Oxfordshire Highways

Cogges Link Road
Agriculture Report

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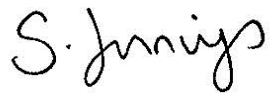
Checked by	:	Sarah Jennings	
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KERNON
COUNTRYSIDE CONSULTANTS

INPUT TO

ENVIRONMENTAL ASSESSMENT

COGGES LINK ROAD

AGRICULTURAL IMPACTS

DMRB Stage 3 Assessment

MARCH 2008

Authorised By VMD 04/08

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1. EXECUTIVE SUMMARY

1.1 This report has assessed the impacts of the proposed Cogges Link Road (CLR) on agricultural assets. The report has looked at the effects on two key areas, namely agricultural land quality and the effects on farm businesses.

1.2 The CLR will involve the irreversible development of approximately 11.6 hectares of agricultural land of which 1.8 hectares is **"best and most versatile"** agricultural land.

1.3 The Cogges Link will affect two farming occupations; the affects on farm businesses after mitigation are slight negative on one agricultural business and slight positive on the other business.

1.4 We are of the opinion that there is no reason why the beneficial continued agricultural use of all adjoining agricultural land cannot take place.

1.5 In summary the Magnitude of Impact of the CLR is:

- **Agricultural Land Quality:** **Slight Negative**
- **Farm Businesses:** **Slight Negative**

1.6 The Impact Significance of the scheme is deemed to be Not Significance.

2. INTRODUCTION

Scope of Report

2.1 This technical report sets out an assessment of the potential effects on agricultural assets of the proposed Cogges Link Road (CLR). The proposals are illustrated at **Appendix KCC 1.**

2.2 The assessment is to Stage 3 as set out in the Design Manual for Roads and Bridges Volume 11 Section 3 Part 6 (DMRB) (1993, amended 2001) and in accordance with Interim Advice Note 76/06-82/06. In line with advice set out in the DMRB this report covers loss of land and soil resources, the type of land management and farming practices currently operated and the potential effects on these, and matters such as severance, disturbance and disruption. It covers construction phase / short term effects and the operational / permanent / long term effects.

The Authors

2.3 The report has been prepared by Kernon Countryside Consultants (KCC). KCC specialises in assessing the effects of development proposals on agricultural businesses, and in farm development and rural planning issues. The authors and those contributing to the report are:

- Tony Kernon BSc (Hons) MRICS FBIAC;
- Verity Drewett BSc (Hons) MRICS MBIAC;
- Rose Simmons DipSurv MRICS;
- William Whitfield MA MSc MISoil Sci.

3. METHODOLOGY

3.1 The effects of the scheme on agricultural assets have been identified in accordance with the guidance given within the DMRB Volume 11, Section 3 Part 6 (1993, amended 2001) and in accordance with IAN 76/06 – 82/06.

3.2 The methodology has involved:

i) study of available published soil, geology and climate data, land quality records and topographic information;

ii) study of the plans provided showing the proposals and land referencing information;

iii) a review and update of the 2004 stage 3 assessment work; and

iv) an over-the hedge inspection of the affected land in July 2007 and an interview with a representative of Witney Town Council.

3.3 The main affected landowner provided us with details of the farmer who is currently renting his land. We contacted the tenant however he was not willing to discuss his farming operations with us. Accordingly the assessment of affects on this land has been based upon information gained in 2004 and an "over-the hedge" inspection in July 2007. The assessment is based upon the drawings provided by Jacobs.

3.4 This assessment considers the effects both during construction and longer term. There are a number of construction phase impacts, which can also become long-term impacts. The assessment has divided the effects as shown in the table below:

Table KCC 1 : Construction Phase Impacts

Potential Impact	Description
Crop loss and timing	The potential losses which may have a knock on effect for other enterprises.
Construction severance	Short-term severance of accesses which may have time limited implications for the management of agricultural and diversified activities.
Construction phase disruption to services and drainage	These effects may be for the duration of mitigation works or for the duration of the construction period. Disruption to either will have consequential land management implications.
Disease transmission and bio-security	Generally problems during the construction phase only.
Generation of noise and Dust	Could affect crops, grazing livestock or diversified income.

Table KCC 2 : Operational Phase Impacts

Potential Impact	Description
Land quality and take	This is the effect on the national agricultural resource of the loss of farmland, in policy terms.
Land take by farm	The effects on individual farm holdings due to permanent land take.
Severance	The effect of dividing land by the construction of a road.
Access and workability of remaining land	Associated effects such as post construction changes to field shape, size and time to access.
Drainage	Long term effects on land where drainage may be affected.
Water supplies	Water from natural sources or mains / private farm supply.
Noise	The effects on grazing and housed livestock, and diversified businesses.
Farm diversification	The effects on any farm diversification activities.

3.5 Each effect is described in detail. The effects have been assessed against the significant criteria set out in Tables KCC 3 and 4 below:

3.6 There are no defined thresholds for assessing the impacts of non-agricultural development on soil resources. Planning Policy Statement 7 'Sustainable Development in Rural Areas' (2004) (PPS 7) states that it is for Local Authorities to decide whether "best and most versatile agricultural land" (BMV) land can be developed. BMV land is identified in PPS 7 as worthy of protection. Accordingly the existence of and the loss of BMV land is a measure of impact.

Table KCC 3 Impact Magnitude

Impact Magnitude	Definition	
	Impact on Soils	Impact on Local Agriculture
Major Negative	The proposed scheme would directly lead to the loss of over 50 hectares of "best and most versatile agricultural land" (Grades 1, 2 and 3a).	The impact of the scheme would render the agricultural businesses non-viable either through land loss or other workability effects.
Moderate Negative	The proposed scheme would directly lead to the loss of between 20 and 50 hectares of "best and most versatile agricultural land" (Grades 1, 2 and 3a).	The impact of the scheme would not render the business non-viable but would require significant changes in the day to day management / structure of the business, either through land loss or other workability effects.
Slight Negative	The proposed scheme would directly lead to the loss of less than 20	The impact of the scheme would not render the business non-viable; but

Impact Magnitude	Definition	
	Impact on Soils	Impact on Local Agriculture
	hectares of "best and most versatile agricultural land" (Grades 1, 2 and 3a), or any area of land of Grade 3b, 4 or 5.	would require minor changes in the day to day management / structure of the agricultural business either through land loss or other workability effects.
Negligible	No direct impacts upon agricultural land.	No direct impact on agricultural businesses.
Slight Positive	The proposed scheme would directly lead to the re-instatement of less than 20 hectares of "best and most versatile agricultural land" (Grades 1, 2 and 3a), or any area of land of Grade 3b, 4 or 5.	The impact of the scheme would result in minor positive changes in the day to day management / structure of the agricultural business either through land gain or other workability effects.

3.7 Having assessed the magnitude of impact the significance of the impact has then been considered. The significance of an impact is determined by the interaction of magnitude and sensitivity. The sensitivity of soil resources is deemed to be high, as it is recognised in PPS 7 as being of national importance. Farm businesses are deemed to be of low sensitivity as they are only of local importance and can be tolerant of change.

Table KCC 4 : Impact Significance

Overall Significance	Definition	
	Impact of National Significance	Impact of Local Significance
Significant	Major impact on soil resources.	/
Moderately Significant	Moderate impact on soil resources.	Major impact on farm businesses.
Not Significant	Slight or negligible impact on soil resources.	Moderate, slight or negligible impact on farm businesses.

4. FINDINGS

Baseline Conditions

4.1 Baseline conditions can be divided into:

- inherent conditions, ie those not influenced by man to any significant degree such as soils and land quality;
- land use conditions, which are generally of a more transient nature, such as farming occupation and management.

Inherent Conditions

4.2 The inherent soil resources, interacting with factors such as climate and topography, influence the extent to which land can be exploited for agricultural purposes. As a means of measuring and comparing land in different locations, the Ministry of Agriculture, Fisheries and Food (MAFF) (now DEFRA) have devised a system of Agricultural Land Classification (ALC). This sub-divides land from Grade 1 "excellent" quality to Grade 5 "very poor" quality. PPS 7 identifies Grades 1, 2 and 3a as **"best and most versatile agricultural land".**

4.3 The areas of land that are being assessed in this report are shown on provisional 1:63,360 scale ALC map (MAFF 1971) as being of undifferentiated Grade 3 land on the slightly raised ground covered by the river terraces and the Oxford Clay with Grade 4 land shown in the flood plain.

4.4 Published plans are only for use in strategic planning and cannot be relied upon for assessing accurately the quality of any particular site. Accordingly in 2004, using the recommended methodology, set out in the DMRB a desk based ALC survey of the route was undertaken as part of the Stage 2 survey work. A copy of the 2004 desk-based ALC report, including a plan is attached at **Appendix KCC 2.**

4.5 The desk based ALC concluded that:

- Sub-grade 3b land will cover much of the land over the outcrop of Oxford Clay and the clayey soils in the Windrush flood plain.
- Droughty soils associated with a narrow floodplain terrace provide contrasting Grade 2 quality to a small area flanking the flood plain.

4.6 As per the guidance in the Design Manual for Roads and Bridges the Government Office for the South East (GOSE) were consulted on the desk based results and they confirmed that due to the small amounts of BMV land that had been identified, a detailed ALC survey would not be required as part of the Stage 3 assessment work. A copy of their letter is attached at **Appendix KCC 3**.

Land Use Conditions

4.7 The Cogges Link Road passes through an area of mixed arable and pasture land. Land on the urban fringe is in a number of non-agricultural uses, including industrial uses, open space and allotments.

4.8 The boundaries of the holdings have been provided by land referencing plans, and have been used for assessing potential impacts. The main affected farming occupier was interviewed in 2004. The landowner was contacted in 2007 and he provided details of the farmer who is currently renting the land. We contacted the Tenant however he was not willing to discuss his farming operations. Accordingly the baseline data is based upon information gained in 2004 and an "over the hedge" assessment carried out in July 2007. Non-farming occupations are not described. A land reference map is attached at **Appendix KCC 4**.

- **Church Farm, South Leigh** – A mixed arable and pasture farm which extends to approximately 180 hectares (445 acres) in total. The land affected by the Witney Cogges Link is rented out on a 2 year Farm Business Tenancy (29th September 2006 to 28th September 2008) to a farmer based in the nearby village of Stanton Harcourt. The Witney Cogges Link crosses land in both arable and pasture use.

- **Witney Country Park** – the park which is owned by Witney Town Council, extends to 30 hectares including Witney Lake. The Country Park is sub-divided by the A40. The land is sub-let on an annual grazing agreement to a single grazier who grazes a small number of cows and calves. Approximately 5 hectares is a traditional hay meadow. The Country Park is open to the public.

5. REGULATORY / POLICY FRAMEWORK

Value (sensitivity) of resource

5.1 **Land Resources** are matters of potentially national importance. There are no defined criteria against which to set thresholds. National planning guidance relating to development and the protection of agricultural land is at paragraph 28 of PPS 7. The effect on land resources is a combination of the quantum and quality of agricultural land affected, relative to both the national resource and the relative availability of land of that quality locally. Land resources are classified as being of high environmental value (sensitivity).

5.2 **Farm Business** impacts are of potentially local importance. The way that farms are operated will vary over time according to ownership, local and international factors. Effects on farm businesses are of a shorter-term, transient nature, and sensitivity is generally lower as a consequence.

Regulatory / policy framework

5.3 The assessment work has been carried out in accordance with the guidance set out in DMRB Volume 11, Section 3 Part 6: Land Use (1993, as amended August 2001), IAN 76/06 – 82/06 and PPS 7. In line with advice in the DMRB this assessment covers four main areas, namely:

- Land-take;
- Type of husbandry;
- Severance;
- Major accommodation works for access, water supply and drainage.

Planning Policy

5.4 National Planning Policy is set out in PPS 7 in paragraph 28 which identifies the "best and most versatile agricultural land" (BMV) as land in ALC Grades 1, 2 and 3a. Throughout England and Wales that amounts to one third of agricultural land, but in parts of England the proportion is much higher.

5.5 Paragraph 28, notes:

"the presence of best and most versatile agricultural land should be taken into account alongside other sustainability considerations (e.g. biodiversity; the quality and character of the landscape; its amenity value or heritage interest; accessibility to infrastructure, work force and markets; maintaining viable communities and the protection of natural resources, including soil quality) when determining planning applications. Where significant development of agricultural land is unavoidable, Local Planning Authorities should seek to use areas of poorer quality land (Grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Little weight in agricultural terms should be given to the loss of agricultural land in grades 3b, 4 or 5, except in areas (such as uplands) where particular agricultural practices may themselves contribute in some special way to the quality and character of the environment or the local economy. If any undeveloped agricultural land needs to be developed, any adverse effects on the environment should be minimised."

5.6 Paragraph 29 notes:

"It is for Local Authorities to decide whether BMV agricultural land can be developed having carefully weighed the options in light of competent advice".

6. EVALUATION : WITHOUT MITIGATION

CONSTRUCTION PHASE IMPACTS

Crop Loss and Timing

6.1 The potential route options involve a mix of arable and grassland. In most cases the crops on the arable land will be planted in the August – October period (autumn sown) for harvest in July-August the following year. In many cases, and dependant upon the weather, the land will be cultivated and the next crop sown within a few weeks of the harvesting of a previous years crop. Grass for hay or silage is usually cut in May and June. Accordingly there is the potential for loss of crop at most times of the year.

6.2 With arable land, the effect of loss of crop is generally an economic consideration. Where pasture land is used to produce either hay or silage to feed livestock during the winter months, the supply of winter fodder may be affected, which could have a knock on effect on the ability of the farm to feed the livestock over winter, or on available areas for Single Farm Payment claims.

6.3 Without mitigation the effects of the scheme on crop loss will have slight negative impacts on the farm businesses.

Construction Severance

6.4 The scheme severs a number of parcels of land. Without mitigation there will be a number of parcels of land that will be inaccessible and therefore unfarmable during the construction period. The affects of the loss of this land during the construction period will have moderate negative effects on farm businesses.

Construction Disruption to Services and Drains

6.5 During construction there will be severance of existing water supplies and land drainage schemes. Drainage schemes under fields, are generally but not always, whole field schemes so disruption is possible where only parts of fields are taken.

6.6 Without mitigation the drainage of the large arable field located to the east of Cogges will be affected. The drains in the bottom half of the field will be severed from the outfall. Without mitigation, land to the east of the proposed scheme will become water logged, as the drainage pipes will have no outfall. This could result in the field no longer being suitable for arable cropping. Accordingly the field may have

to revert to grassland which is better suited to coping with wet land. The magnitude of impact as a result of the severance of field drains would be slight negative

6.7 There are water troughs in the grassland fields on the eastern edge of Cogges. The scheme would sever these tanks from the majority of the grazing land. Without mitigation these fields will no longer be suitable for livestock grazing unless the farmer provides water via a field bowser. The effects of the severance of water supplies will be slight negative.

6.8 There are no mains water supplies in the Country Park, cattle drink from the banks of the river. This will be able to continue and accordingly there will be no affects.

Disease Transmission / Bio-security

6.9 When the scheme is being constructed there is potential for plant and machinery to spread diseases, both animal and plant, between farms, together with the spread of weeds and soil borne pathogens.

6.10 Without appropriate mitigation there is the potential for disease spread, the effects on agricultural enterprises will be slight negative.

Generation of Noise and Dust

6.11 Most agricultural enterprises are not sensitive to normal amounts of noise or dust during construction. However some agricultural enterprises are particularly susceptible to increased noise (in particular free-range poultry units) and dust (mushroom enterprises).

6.12 The use of the land for arable cropping, hay production or the grazing of cattle will not be adversely affected by construction noise or dust. The magnitude of impact will be negligible.

OPERATIONAL PHASE IMPACTS

6.13 This section of the report covers those effects of long term or potentially permanent nature

Land Take and Quality

6.14 The CLR involves the irreversible development of about 11.6 hectares of agricultural land, this includes land within the Highways Boundary and the area proposed for Public Open Space to the north of the scheme. Land to the south of the scheme

which is proposed as exchange land for the Country Park will remain in an agricultural use and accordingly will not be lost to the scheme.

6.15 To assess the significance of this loss Planning Policy Statement 7 "Sustainable Development in Rural Areas" (2004) identifies the **"best and most versatile agricultural land"** (BMV) as that in Grades 1, 2 and 3a.

6.16 Land quality across the north western section of the route was classified as Grade 3b ie not best and most versatile land, by a MAFF semi-detailed survey carried out in 1998. A desk based study predicts that the remainder of the route will comprise predominately Grade 3b land, with a small section of Grade 2 land running along the western edge of Cogges. Table KCC 5 below sets out the estimated agricultural land take per ALC Grade, for the CLR. *Please note this table should be seen in context and used accordingly: no site survey has been carried out to the west of the High Cogges Road and accordingly the table shows estimations of likely land quality only.*

Table KCC 5 : Proposed Land Take for Cogges Link Road (Figures to be added when scheme design is completed)

ALC Grade	Description	Area (Ha)	%
2	Very Good	1.8	14
3b	Moderate	9.8	77
N/A	Other Land	1.2	9
TOTAL		12.8	100

6.17 In summary the proposed Cogges Link will include the development of approximately 11.6 hectares of agricultural land of which 1.8 hectares is likely to comprise BMV land.

6.18 The magnitude of impact of the loss of 11.6 hectares of agricultural land of which 1.8 hectares is "best and most versatile" is slight negative.

Potential Effects on Farms (land take, severance and workability)

6.19 The potential effect on individual farm holdings will principally be a combination of land take and severance. Accordingly the two factors are considered together. For example, the loss of 0.5 ha from a field may not of itself have a significant effect on the farm, but if the consequence is that a further 2.5 ha of the field is severed and can not be farmed, the cumulative impact is 3ha and much greater.

6.20 This option affects two blocks of land that are in an agricultural use, namely land comprising part of Church Farm, South Leigh and a Country Park.

6.21 **Church Farm South Leigh:** The proposed Witney Cogges Link will result in the loss of approximately 10.5 hectares less than 6% of Church Farm.

6.22 The eastern half of the road, from the junction to the minor road that leads to Stanton Harcourt, crosses three fields (two grassland and one arable). It results in the severance of approximately 1.4 hectares of land. However, this land is allocated for housing in the West Oxfordshire Plan Local Plan (Adopted 2006) and therefore any agricultural severance is expected to be a short-lived impact. In the period before non-agricultural development takes place, access and therefore continued agricultural use will be possible.

6.23 The western half of the scheme, from the minor road to River Windrush severs two fields, both currently in grassland. The severed land in the northern field is to be acquired as part of the scheme.

6.24 Although the remaining parcels will be more difficult to work, due to decreased field sizes, the proposal will not result in any significant implications for the viability or continued farmability of the holding. The effects of the scheme on this agricultural business are slight negative.

6.25 **Witney Country Park:** The scheme will result in the loss of 1.25 hectares of land comprising the Country Park. The scheme will also sever the park into two separate blocks. This will affect the workability of the area for agricultural purposes. However the land is only let on a short-term non-secure basis and accordingly the effects are slight negative.

Land Drainage

6.26 During construction there will be severance of existing water supplies and land drainage schemes. Drainage schemes under fields, are generally but not always, whole field schemes so disruption is possible where only parts of fields are taken.

6.27 Without mitigation the drainage of the large arable field located to the east of Cogges will be affected. The drains in the bottom half of the field will be severed from the outfall. Without mitigation land to the east of the proposed scheme will become water logged, as the drainage pipes will have no outfall. This could result in the field no longer being suitable for arable cropping, accordingly the field may have to revert to grassland which is better suited to coping with wet land. The magnitude of impact as a result of the severance of field drains would be slight negative

6.28 There are water troughs in the grassland fields on the eastern edge of Cogges. The scheme would sever these tanks from the majority of the grazing land. Without mitigation these fields will no longer be suitable for livestock grazing unless the farmer provides water via a field bowser. The effects of the severance of water supplies will be slight negative.

6.29 There are no mains water supplies in the Country Park, cattle drink from the banks of the river. This will be able to continue accordingly there will be no affects.

6.30 In summary the effects on agricultural businesses will be Slight Negative.

Other Effects

Environmentally Sensitive Area

6.31 Part of the study area is within the Upper Thames Tributaries Environmentally Sensitive Area (ESA). A plan of the Upper Thames Tributaries ESA is attached at **Appendix KCC 5.**

6.32 Much of the ecological interest in the Upper Thames Tributaries ESA is associated with the wet grassland of the valley bottoms. Of particular importance are the remnants of semi-natural hay meadow and wet pasture. These support botanically diverse swards and several rare and scarce plant species, regionally important populations of breeding waders and a rich invertebrate fauna including the marsh fritillary butterfly.

6.33 Agricultural land within the ESA can be entered into a 10 year management agreement, whereby farmers are offered annual payments for farming their land in a way that conserves the traditional environment of the ESA.

6.34 Having interviewed the affected landowners it has been confirmed that none of the agricultural land within the ESA has been entered into an ESA agreement. Accordingly the scheme will not have any impacts on any agricultural operations that are being carried out specifically to conserve the traditional environment.

6.35 The construction of the road will not prevent any of the remaining agricultural land from being entered into an ESA Agreement. It may be that it becomes a more attractive proposition to enter land into arable reversion if the road is constructed, because the remaining agricultural land will suffer from workability issues and as a result will be less attractive for arable production.

7. MITIGATION

Crop Loss and Timing

7.1 The provision of reasonable periods of notice is normal practice. This will enable farmers sufficient time to harvest crops and / or make alternative arrangements to source additional feed stuffs.

Construction Severance

7.2 It is normal practice to provide continued access across the construction area until alternative accesses have been provided.

Construction Disruption to Services and Drains

7.3 It is standard practice to connect new headers or collector pipes to all affected drains, thus channeling the water along an appropriate alternative route and mitigating the effect of severance. Provision is made for drained water to be piped to the outfall. Such work should generally take place in the drier months when drains are not flowing and soil damage will be minimised, and be checked for effectiveness the following winter.

7.4 Severed water supplies will be re-instated.

Disease Transmission

7.5 There is a need for tight bio-security measures to prevent the spread of disease. In general terms:

- soils to be retained for restoration should not be moved between farms;
- construction plant should be cleaned between holdings;
- plant and staff should remain within the construction easement.

Generation of Noise and Dust

7.6 No specific mitigation is proposed.

PERMANENT / LONG TERM IMPACTS

Land Take and Quality

7.7 It is not possible to mitigate against the loss of agricultural land. The soils along the Published Scheme are representative of the district as a whole, and so there is no opportunity to find an alternative route on poorer quality agricultural land. The area of land that would be permanently acquired and land over which easement rights would be obtained would be the minimum considered necessary to construct the Published Scheme.

7.8 The land identified for permanent essential mitigation purposes is considered the most suitable and the minimum needed to provide replacement landscape features, habitat and foraging areas to replace those lost as a result of the Published Scheme.

Effects of Farms (land take, severance and workability)

7.9 Various mitigation measures are proposed to minimise the impacts on agricultural enterprises as a result of land take and severance, these include:

- provision of Country Park Compensation land which will mitigate against the loss of land currently used for grazing and hay production; and
- provision of new accesses into severed parcels of land

Land Drainage

7.10 It is standard practice to connect new headers or collector pipes to all affected drains, thus channeling the water along an appropriate alternative route and mitigating the effect of severance. Provision is made for drained water to be piped to the outfall. Such work should generally take place in the drier months when drains are not flowing and soil damage will be minimised, and be checked for effectiveness the following winter.

7.11 Severed water supplies will be re-instated.

8. EVALUATION WITH MITIGATION

CONSTRUCTION PHASE IMPACTS

8.1 The residual effects of the construction phase impacts on farm businesses i.e. the operational effects after mitigation are set out below.

8.2 If appropriate mitigation is provided as set out in Section 7 in relation to Crop Loss and Timing, Construction Severance, and Disease Transmission the CLR will have only slight negative impacts on both the agricultural grazier who occupies the Country Park and the tenant who occupies the land owned by Church Farm during the construction period.

OPERATIONAL PHASE IMPACTS

8.3 The residual effects of the operational phase impacts on farm businesses i.e. the operational effects after mitigation are set out below.

Land Take and Quality

8.4 The CLR involves the irreversible development of about 11.6 hectares of agricultural land as set out above it is not possible to mitigate against the loss of agricultural land. Accordingly the magnitude of impact of the loss of 11.6 hectares of agricultural land of which 1.8 hectares is "best and most versatile" will remain as slight negative.

Potential Effects on Farms (land take, severance and workability)

8.5 After mitigation the effects on the two occupying farm businesses will be:

8.6 **Church Farm South Leigh:** The proposed Witney Cogges Link will result in the loss of approximately 14.8 hectares less than 10 % of Church Farm.

8.7 The eastern half of the road, from the junction to the minor road that leads to Stanton Harcourt, crosses three fields (two grassland and one arable). It results in the severance of approximately 1.4 hectares of land. However, this land is allocated for non-agricultural development in the West Oxfordshire Plan Local Plan (Revised Deposit Draft) and therefore any agricultural severance is expected to be a short-lived impact. In the period before non-agricultural development takes place, access and therefore continued agricultural use will be possible.

8.8 The western half of the scheme, from the minor road to River Windrush severs two fields, one in arable production and one in grassland. Access to the severed land is provided as part of the scheme. It has been negotiated that the land between the A40 and the Link Road will be made available to the Witney Town Council to replace land lost from the Country Park.

8.9 Although the remaining parcels will be more difficult to work, due to decreased field sizes, the proposal will not result in any significant implications for the viability or continued farmability of the holding. To be completed when scheme is finalized.

8.10 **Witney Country Park:** The scheme will result in the loss of 1.25 hectares of land comprising the Country Park. As part of this scheme provision is made for 4.3 hectares of compensation land. Accordingly in this case the agricultural tenant will have additional land to graze / make hay off. Although the Country Park will be divided by the River Cherwell and the proposed road, this will have only negligible impacts of the farmability of the land. In our opinion the scheme has a positive impact on agriculture as there will be more land available for agricultural use. The effect will be slight positive.

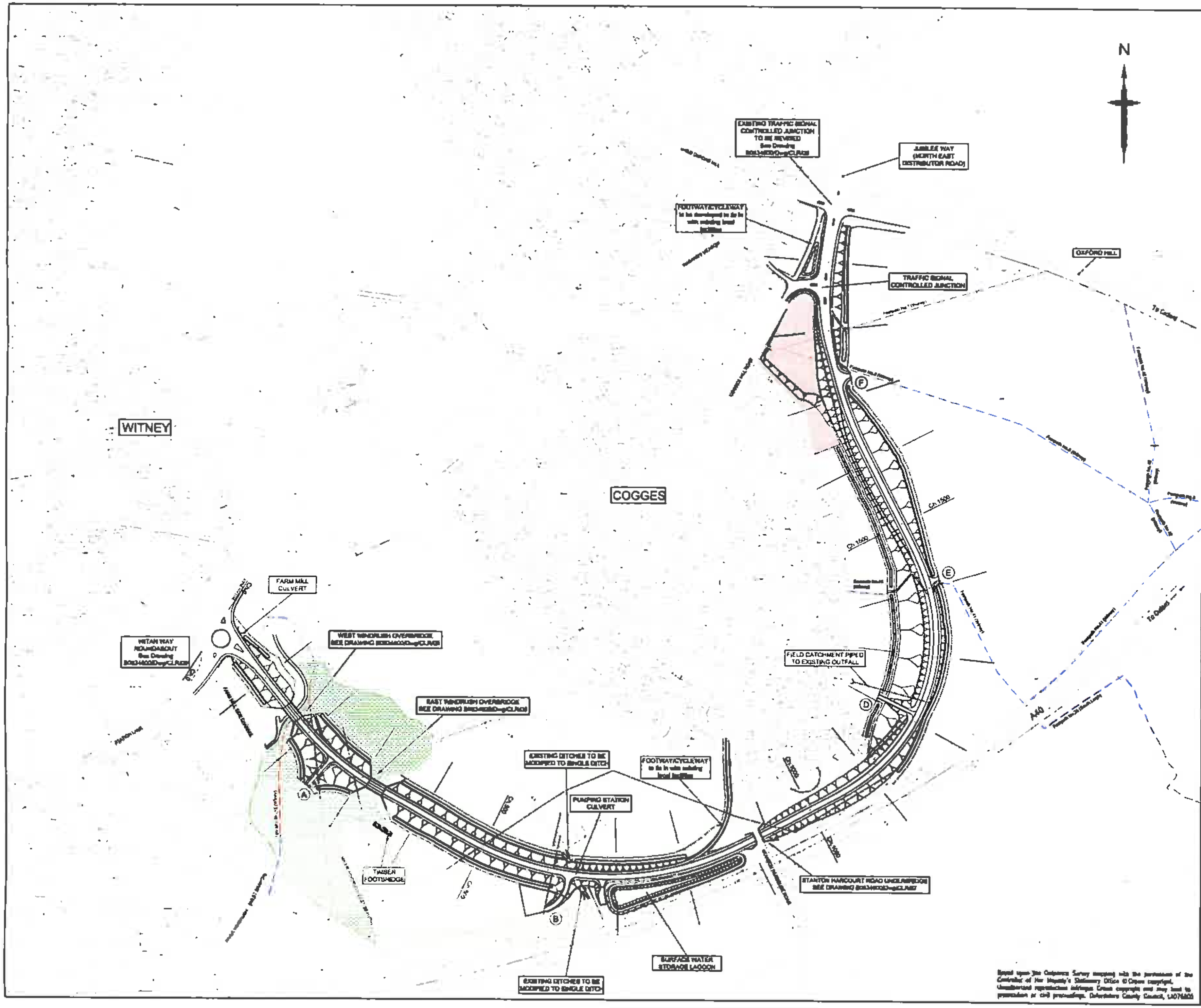
Land Drainage

8.11 Some of the land affected by the proposed Witney Cogges Link is under drained, mitigation measures are included as part of the scheme. Post construction supplies of water to all areas currently supplied can be provided. The effects on land drainage and water supplies after mitigation will be negligible.

8.12 In summary the effects on agricultural businesses after mitigation will be Slight Negative.

APPENDIX KCC 1

SCHEME DRAWINGS (NOT TO SCALE)



LEGEND

- Soft landscape treatment within highway boundary
- Replacement area of Public Open Space See Drawing No. B0834600/Dwg/CLR/13
- Retained area of Public Open Space See Drawing No. B0834600/Dwg/CLR/12
- Country Park compensation land See Drawing No. B0834600/Dwg/CLR/14
- Parking for Country Park See Drawing No. B0834600/Dwg/CLR/14
- Areas of Grasscrete
- Landscape and biodiversity mitigation within Country Park See Drawing No. B0834600/Dwg/CLR/14
- Swale
- Ditch
- Surfaced paths & cycleways
- Public footpaths
- Public footpath diversion
- Public footpaths stopped up
- Existing overhead cables to be diverted underground
- Existing highway boundary fence
- Vehicular Access Point
- Gate
- Highway boundary fence

SCHEDULE OF VEHICULAR ACCESS

A	Management of Country Park
B	Country Park Car Park and management of Country Park
C	Maintenance of surface water lagoons
D	Agricultural purposes - [illegible] in West Oxfordshire Local Plan
E	Agricultural purposes
F	Agricultural purposes and [illegible] Cemetery (subject to planning permission)

Do not scale this drawing

Rev	Description	By	Date	Chk'd	Appd
E	[illegible]	ALB	03.03.08	JH	JM
D	Area of flood compensation removed, [illegible] footbridge added	ALB	15.02.08	AD	JM
C	[illegible]	TMW	08.07.07	RKS	JM
B	[illegible]	TMW	12.04.07	RKS	JM
A	[illegible]	TMW	21.03.07	RKS	JM

Purpose of Issue	Rev	Date	Appd
UPDATED SCHEME PLAN	E	12.03.08	JM
UPDATED SCHEME PLAN	D	15.02.08	JM
UPDATED SCHEME PLAN	C	08.07.07	JM
ISSUE FOR CLIENT APPROVAL	B	12.04.07	JM
ISSUE FOR CLIENT APPROVAL	A	21.03.07	JM
FIRST ISSUE	0	19.03.07	RKS

JACOBS

Oxfordshire Highways

Project: COGGES LINK ROAD

Title: SCHEME PLAN

Scale	Drawn By	Checked By	Approved By
1:2500	TMW	RKS	JM
	Date 19.03.07	Date 19.03.07	Date 19.03.07

Drawing Number: B0834600/Dwg/CLR/03 Rev: E

APPENDIX KCC 2
DESK BASED ALC RESULTS

A1 **Methodology.** The baseline conditions are based on published information and known soil surveys/agricultural land classification (ALC) obtained from DEFRA. The assessment predicts the likely land quality of the route as defined using the MAFF system of Agricultural Land Classification (1988), but predicting quality rather than using intrusive survey methods. Accordingly the results should be treated as preliminary and estimated.

A2 **Agricultural Land Classification.** ALC is a methodology to identify the agricultural utility of soil and land resources. Effectively it assesses soil against a series of limiting criteria, and from this identifies whether any criteria limit the utility of the soil resources for use in modern agriculture. Under this system, land with few or no limitations is classified as Grade 1 **"excellent"** quality, whereas land with severe limitations is classified as Grade 5 **"very poor"** quality and has limited agricultural use. Grade 3 is subdivided into Grade 3a **"good"** quality and Grade 3b **"moderate"** quality. Limiting factors in ALC include climate, topography and relief and soils, and the way that these variables interact.

A3 **Geology.** The solid geology is dominated by rocks of the Oxford Clay Formation, which comprise greyish and olive mudstones, which weather to give heavy textured soil materials. The mudstones are dissected by the floodplain of the Windrush and low river terraces comprising loamy and gravelly materials flank the floodplain, which give rise to well drained and moderately well drained light loams. The floodplain is mainly of clayey alluvium, locally calcareous and overlying peat in places.

A4 Soil information for the major part of the study area is available at detailed scale (SSEW 1983) and heavy textured soils of the Denchworth and Lawford series over much of the exposed Oxford Clay. Narrow strips of Hook and Badsey series flank the floodplain south of Cogges and the clayey alluvium gives Fladbury and Thames soils, the latter with shallower profiles locally over peat (Windrush series).

A5 Soils information for the two short crossings of the Windrush is available on Sheet 6 of the National Soil Map (SSEW 1983) and shows soil of the Thames association over the narrow floodplain. This association comprises wet clayey alluvial soils.

A6 **Topography and Relief.** The proposed roadworks are over gently sloping land and there are no gradient limitations to land quality over any of the land to be crossed.

A7 **Climate.** The area receives, on average, about 700-720 mm of annual rainfall and has equable temperatures. There is no direct climatic limitation to land quality and, other things being equal land could be of **"excellent"** (Grade 1) quality. The field capacity period, that period when soils are potentially wet, of just over 150 days gives adequate opportunity for both autumn and spring fieldwork.

A8 There is a relatively high plant-water demand and many of the soils, even clay soils, may suffer from a lack of available water at times so that yields will be reduced in most years due to moisture stress.

Published Provisional Land Classification

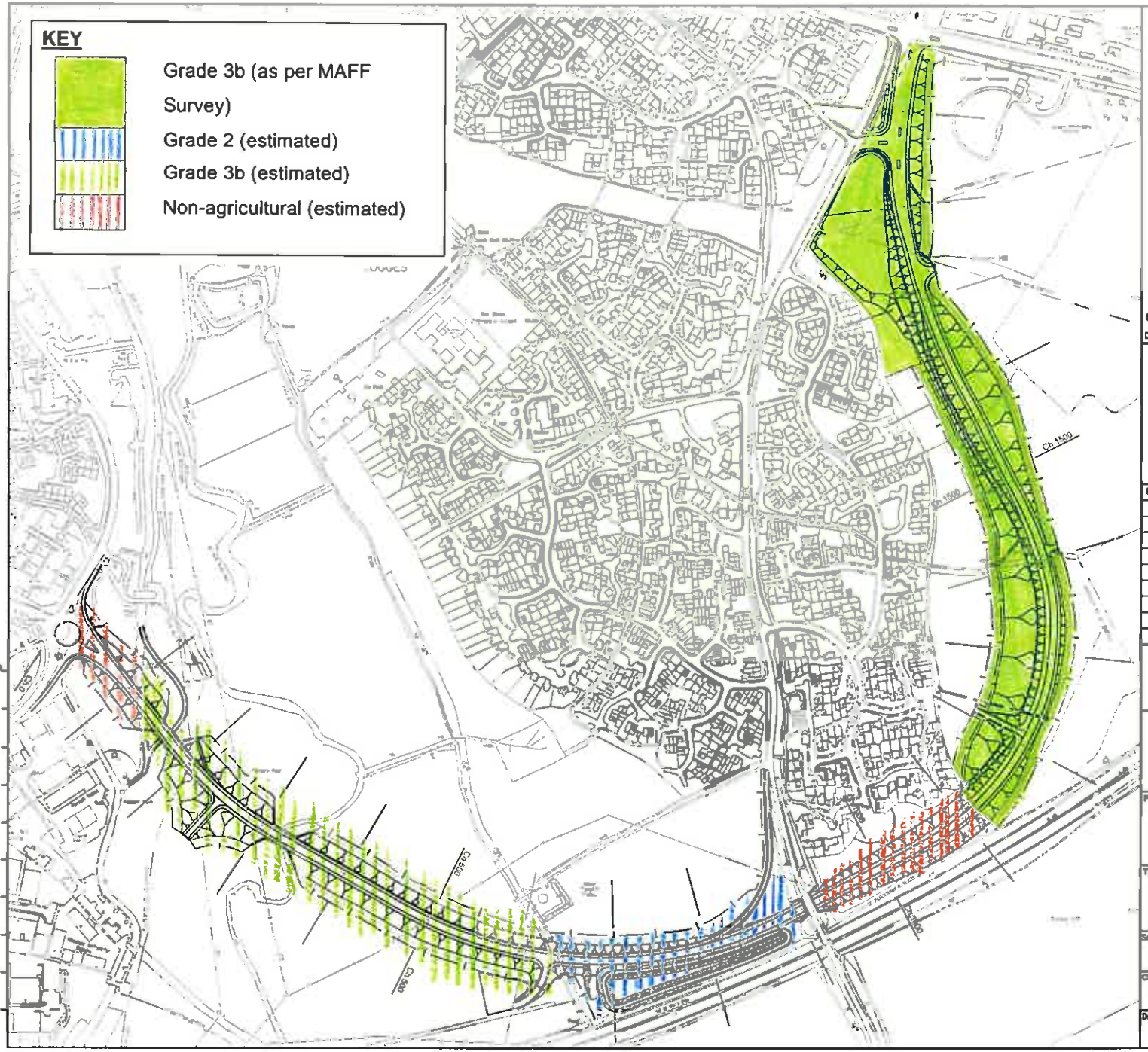
A9 The provisional 1:63,360 scale ALC map (MAFF 1971) shows undifferentiated Grade 3 land on the slightly raised ground covered by the river terraces and the Oxford Clay with Grade 4 land in the flood plain.

A10 A field appraisal of the land quality carried out by DEFRA east of Cogges shows that land to be of moderate quality (Grade 3b). This semi-detailed investigation using the current classification has not addressed the land quality over the river floodplain. The findings are reproduced at **the rear of this report.**

A11 Much of the land over the Oxford Clay outcrop had seasonally wet (Wetness Class III) clay soils and will have wetness and access limitations restricting most if it to sub-Grade 3b. There may be patches of ground with loamy over clayey soils, which will be of good quality (3a) but the mapped information generally indicates soils of heavy texture over much of this land. The alluvium soils, which are probably wetter than those on the surrounding solid clays, are also of moderate quality with local patches, particularly at the back edge of the floodplain, of more or less permanently wet soils downgraded to the poor category (Grade 4). The river terraces, which form a narrow strip above the floodplain, are generally of freely drained soils, which lack sufficient water to sustain full growth. They are easily worked and capable of growing a wide

range of crops, but the lack of water is sufficient to impose a drought limitation and this land will be mainly of Grade 2 (very good) quality.

A12 **Summary.** Land quality over the agricultural land around Witney is largely determined by the clayey nature of the soils, which are limited because of wetness and autumn/winter access. Sub-grade 3b land will cover much of the land over the outcrop of Oxford Clay and the clayey soils in the Windrush flood plain. Droughty soils associated with a narrow floodplain terrace provide contrasting Grade 2 quality to a small area flanking the flood plain. These findings are illustrated at the **rear of this report.**



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Rev	Description	By	Date	Chk'd	Apprd

Purpose of Issue	Rev	Date	Apprd

KERNON

Oxfordshire Highways
www.oxfordshire-highways.org

Project

Title

ALC Survey Results

Scale	Drawn By	Checked By	Approved By
N.T.S. @ A4	Date	Date	Date

Clients Ref

Drawing Number	Rev

A1

WEST OXFORDSHIRE DISTRICT LOCAL PLAN
Land East of Witney, Oxfordshire

Agricultural Land Classification
ALC Map and Report

December, 1998

Resource Planning Team
Eastern Region
FRCA Reading

RPT Job Number: 3305/101/98
MAFF Reference:EL 33/01860

AGRICULTURAL LAND CLASSIFICATION REPORT

WEST OXFORDSHIRE DISTRICT LOCAL PLAN
LAND EAST OF WITNEY, OXFORDSHIRE

INTRODUCTION

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of approximately 68 hectares of land east of Witney, in Oxfordshire. The survey was carried out during December 1998.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF). The survey was carried out in connection with MAFF's statutory input to the West Oxfordshire District Local Plan. This survey supersedes any previous ALC information for this land, including a 1983 survey (FRCA ref: 3305/42/83) covering part of the area to the north.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey the agricultural land use on the site included permanent grassland and cereals. The areas mapped as 'Other land' include farm dwellings and associated buildings, two telecommunication towers, and woodland. A small area of agricultural land (1.2 hectares), in the west of the site, was not surveyed as permission for access was not forthcoming

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:15,000. It is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

7. The fieldwork was conducted at an average density of 1 boring per 1.4 hectares of agricultural land. In total, 46 borings and 4 soil pits were described.

8. The majority of the agricultural land at this site has been classified as Subgrade 3b (moderate quality) with a smaller extent of Subgrade 3a (good quality). The principal limitation to land quality is soil wetness.

[1] FRCA is an executive agency of MAFF and the Welsh Office

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	2.8	4.4	4.1
3b	60.2	95.6	88.8
Agricultural land not surveyed	1.2	N/A	1.8
Other land	3.6	N/A	5.3
Total surveyed area	63.0	100	92.9
Total site area	67.8	-	100

9. Land of good quality is quite variable and may be related to an outcrop of gravelly material resting over the Oxford Clay substratum. Soils are typically non-calcareous with fine loamy or fine silty topsoils. These overlie similar or clayey subsoils, or pass through very stony layers to the poor draining clays beneath. It is the depth to these less permeable clays which plays a major part in determining the final ALC grade. Where these occur at moderate depth on this site, the land is better drained and results in a land classification of Subgrade 3a.

10. Moderate quality land covers most of the site and occurs in conjunction with the underlying Oxford Clay. Soils comprise non-calcareous fine loamy or fine silty topsoils. These overlie poor draining clays or pass through a shallow fine loamy layer to the clays beneath. It is the depth to these less permeable horizons, combined with the topsoil texture and the local climate, which determines the overall ALC grade. As these poor draining clays are close to the surface and the topsoils are heavy the land is limited by wetness and Subgrade 3b is appropriate. Wetness causes land utilisation to be restricted and yield potential to be reduced.

FACTORS INFLUENCING ALC GRADE

Climate

11. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

12. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SP 375 098	SP 370 093
Altitude	m, AOD	105	90
Accumulated Temperature	day°C (Jan-June)	1395	1413
Average Annual Rainfall	mm	713	705
Field Capacity Days	days	154	153
Moisture Deficit, Wheat	mm	100	102
Moisture Deficit, Potatoes	mm	91	93
Overall climatic grade	N/A	Grade 1	Grade 1

13. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

14. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

15. The combination of rainfall and temperature at this site mean that there is no climatic limitation. Local climatic factors, such as exposure and frost risk do not significantly affect land quality at this location. The site is climatically grade 1. However, climatic factors do interact with soil properties to influence soil wetness and droughtiness. At this locality the climate is average, in regional terms.

Site

16. The site lies at altitudes in the range 85–112 m AOD. The highest land occurs over the central area of the site, with land falling with moderate to gentle gradients away from here. The lowest ground is found in the extreme south of the survey area, close to the A40(T). The site does not suffer from any site restrictions (i.e., gradient, microrelief or flooding).

Geology and soils

17. The most detailed published geological information for the site (BGS, 1982) indicates that it is mostly underlain by Oxford Clay, with a small area of Glacial Sands and Gravels mapped on high ground around Gibbets Close Farm.

18. The most detailed published soils information covering the site (SSEW, Record No. 77, 1982) shows it to mainly comprise the Oak soil series. This is described as 'stony loamy or silty over clayey; drift (till or Head, plateau Drift). A further two soil series constitute the remainder. The most extensive of the two is the Denchworth soil series. This is described as 'clayey-smectitic over Jurassic or Cretaceous clay or clay-shale (Oxford Clay). A small area along the south-west boundary is shown as the Lawford soil series. This is described as 'stony, clayey drift (head) over Jurassic or Cretaceous clay or clay shale (Oxford Clay). Soils fitting these descriptions were observed across the site.

AGRICULTURAL LAND CLASSIFICATION

19. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

20. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II.

Subgrade 3a

21. Land of good quality covers a small area, either side of Gibbets Close Farm and the B4022. It occurs in conjunction with two soil types.

22. All of the land classified as Subgrade 3a is affected by a soil wetness limitation, often in combination with a less severe soil droughtiness limitation. The first soil type comprises non-calcareous heavy silty clay loam or heavy clay loam topsoils, which may contain up to 2% total flints by volume. Subsoils may be gleyed from below the topsoil but have no slowly permeable clays within auger depth or are not gleyed within 40 cm but have slowly permeable layers from 65 cm. Soil pit 1P (see Appendix II), is similar to these soils although in the 3a mapping unit the depth to the slowly permeable clay is greater. Soil structure of the heavy clay loam was assessed as moderate and poor for the clay. It is the depth to gleying and the depth to a slowly permeable layer, which determines the final ALC grade. The depth to these, results in soils which are assigned to Wetness Class II. This combination of imperfect drainage, topsoil texture and the prevailing field capacity level (154 days) results in land classified as Subgrade 3a. Soil wetness can affect the range of crops which can be grown and the level of yield. In addition, soil wetness is a major factor in determining the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

23. Where the influence of the glacial sand and gravel is more evident, soils comprise non-calcareous heavy or medium clay loam topsoils, which may contain up to 2% total flints by volume. These overlie slightly stony sandy clay loam (SCL) subsoils or pass through a thin horizon of heavy clay loam to the SCL beneath. These stony layers distinguish the soils described above. These were impenetrable to the auger from 65 and 90 cm. Soil pit 3P (see Appendix II), is typical of these soils and proved the existence of these stony subsoils, which were measured from the pit as 29%, increasing to 47% total flints by volume. Due to the high stone contents, soil structure could not be determined. Consequently, a moderate assessment of structural conditions has been assumed. At 75 cm, the SCL passed to a slowly permeable clay. This results in these soils being again assigned to Wetness Class II and individual borings classified as Grade 2 (good quality) or Subgrade 3a. Moisture balance calculations indicate that these soils experience a slight to moderate soil droughtiness limitation and that Grade 2 is appropriate. However, the limited extent of this and the scale of mapping is such that this better (Grade 2) land could not be distinguished separately and is therefore appropriately included in the Subgrade 3a mapping unit.

Subgrade 3b

24 Land of moderate quality has been mapped over most of the site. It is coincident with the underlying Oxford Clay.

25. All of the land classified as Subgrade 3b suffers from a significant soil wetness limitation. Soils comprise non-calcareous heavy clay loam or heavy silty clay or clay topsoils, which may contain up to 5% total flints by volume. These overlie slowly permeable clay or pass through a thin horizon of permeable heavy clay loam to the clay beneath. Soil pits 1P, 2P and 3P (see Appendix II), confirm the existence of these shallow poorly structured clayey subsoils. It is the depth to these slowly permeable layers (between 17–39 cm), which will determine the overall ALC grade and in this locality assigned to Wetness Class IV or III.

This combination of poor drainage, topsoil texture and the prevailing field capacity level (154 days) gives rise to a land classification of Subgrade 3b. Excessive soil wetness adversely affects seed germination and survival, partly by a reduction in soil temperature and partly because of anaerobism. It also inhibits the development of a good root system, all of which can affect the range of crops that can be grown and the level of yield. Soil wetness also influences the sensitivity of the soil to structural damage and is, therefore, a major factor in determining the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

Colin Pritchard
Resource Planning Team
Eastern Region
FRCA Reading

SOURCES OF REFERENCE

British Geological Survey (1982) *Sheet No. 216, Witney*, 1:50,000, Solid and Drift Edition. BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.* Met. Office: Bracknell.

Soil Survey England and Wales (1982) *Soil Survey Record No. 77, Soils in Oxfordshire, Sheet SP30, Witney South.* SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

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 or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the 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 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: 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: Moderate Quality Agricultural Land

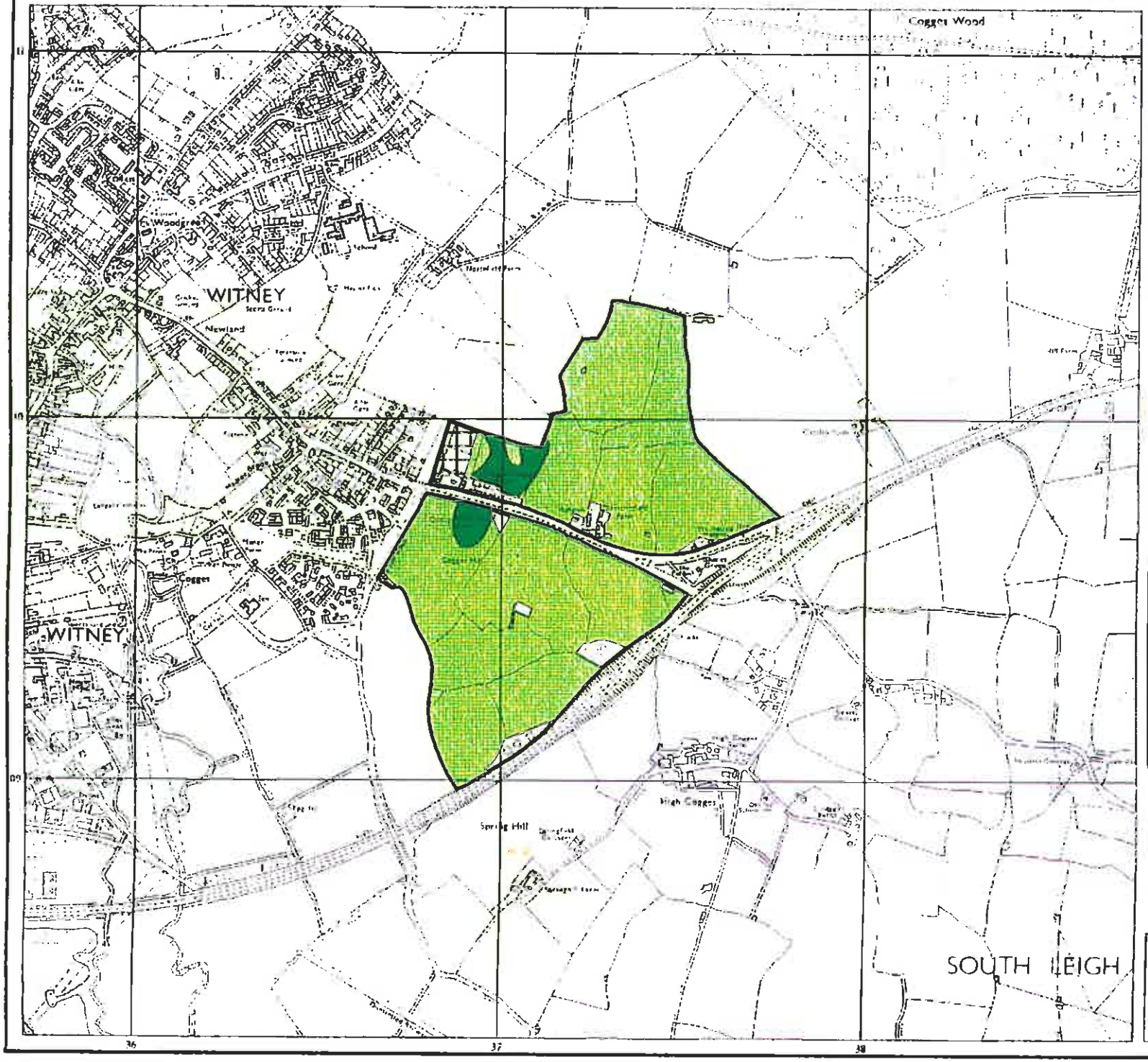
Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the 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 severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.



MAFF Ministry of Agriculture Fisheries and Food

Agricultural Land Classification

West Oxfordshire District Local Plan

Land east of Witney

Semi-detailed survey

Legend

	Quality	Area (ha)
Grade 1	Excellent	Nil
Grade 2	Very Good	Nil
Grade 3a	Good	2.8
Grade 3b	Moderate	60.2
Grade 4	Poor	Nil
Grade 5	Very Poor	Nil
	Agricultural land not surveyed	1.2
	Other land	3.6
	Site Boundary	
	Total survey area	63.0
	Total site area	67.8

* Not present within survey area

Scale 1:10,000

0 200 400 600

Metres

Further details contained in MAFF (1988) Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land. Maff (publications), London SE99 7TP.

The information is accurate at base map scale but any enlargement would be misleading.

Surveyed and drawn by the Resource Planning Team, FRCA, Reading

Source map(s): SP30NE, SP31SE

Reference no: 3305/101/98

APPENDIX KCC 3

LETTER DATED 29TH MARCH 2004 FROM GOVERNMENT OFFICE FOR THE SOUTH EAST

GOVERNMENT OFFICE
FOR THE SOUTH EAST

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Purton Stoke
Swindon
SN5 4JE

Rural Team
Government Office for the
South East
Bridge House
1 Walnut Tree Close
Guildford
GU1 4GA

TEL: 01483 882448
FAX: 01483 882289

e-mail: dpryce-jones.gose@go-regions.gov.uk

29 March 2004

Dear Ms Scott

Witney Cogges Bypass – Environment Assessment and ALC requirement

To confirm our phone conversation last week:

From the information provided in the Environmental Assessment – on Agricultural impacts, on the basis of the areas affected, we would not require a detailed field assessment of ALC. The area (of BMV land) affected is below the threshold at which we would object, and in this case, for the total area affected a desk study would be sufficient – especially if the ALC survey data was refreshed quite recently.

The other information in the Assessment on the impact on the farm businesses affected by the route would also adequately meet our needs if and when we are consulted by the Local planning authority.

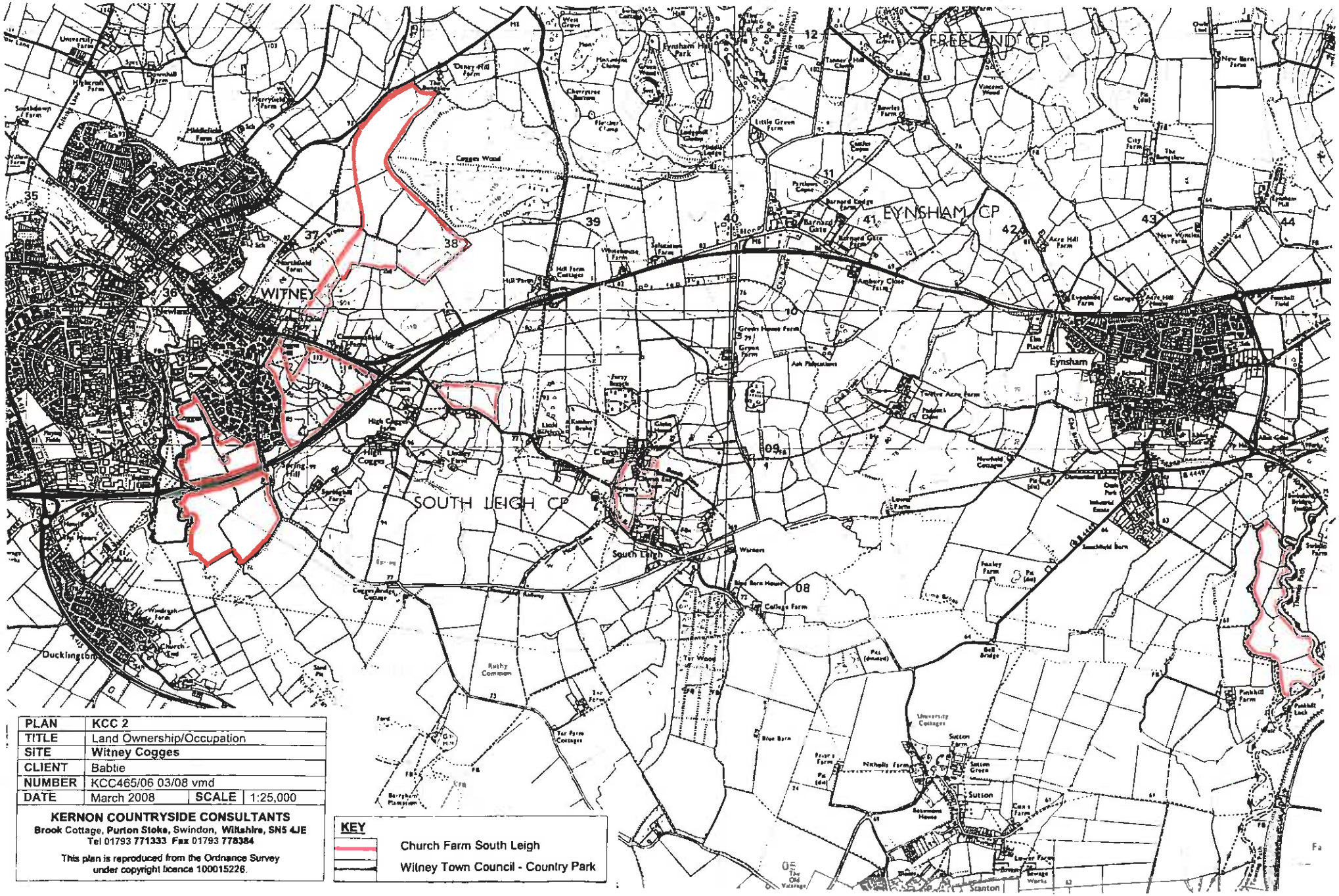
I am sorry that you had to chase me for a reply

Yours sincerely

David Pryce-Jones
Rural Team, Advisor

APPENDIX KCC 4

LAND REFERENCE PLAN



PLAN	KCC 2		
TITLE	Land Ownership/Occupation		
SITE	Witney Cogges		
CLIENT	Babtie		
NUMBER	KCC465/06 03/08 vmd		
DATE	March 2008	SCALE	1:25,000

KERNON COUNTRYSIDE CONSULTANTS
Brook Cottage, Purton Stoke, Swindon, Wiltshire, SN5 4JE
Tel 01793 771333 Fax 01793 778384

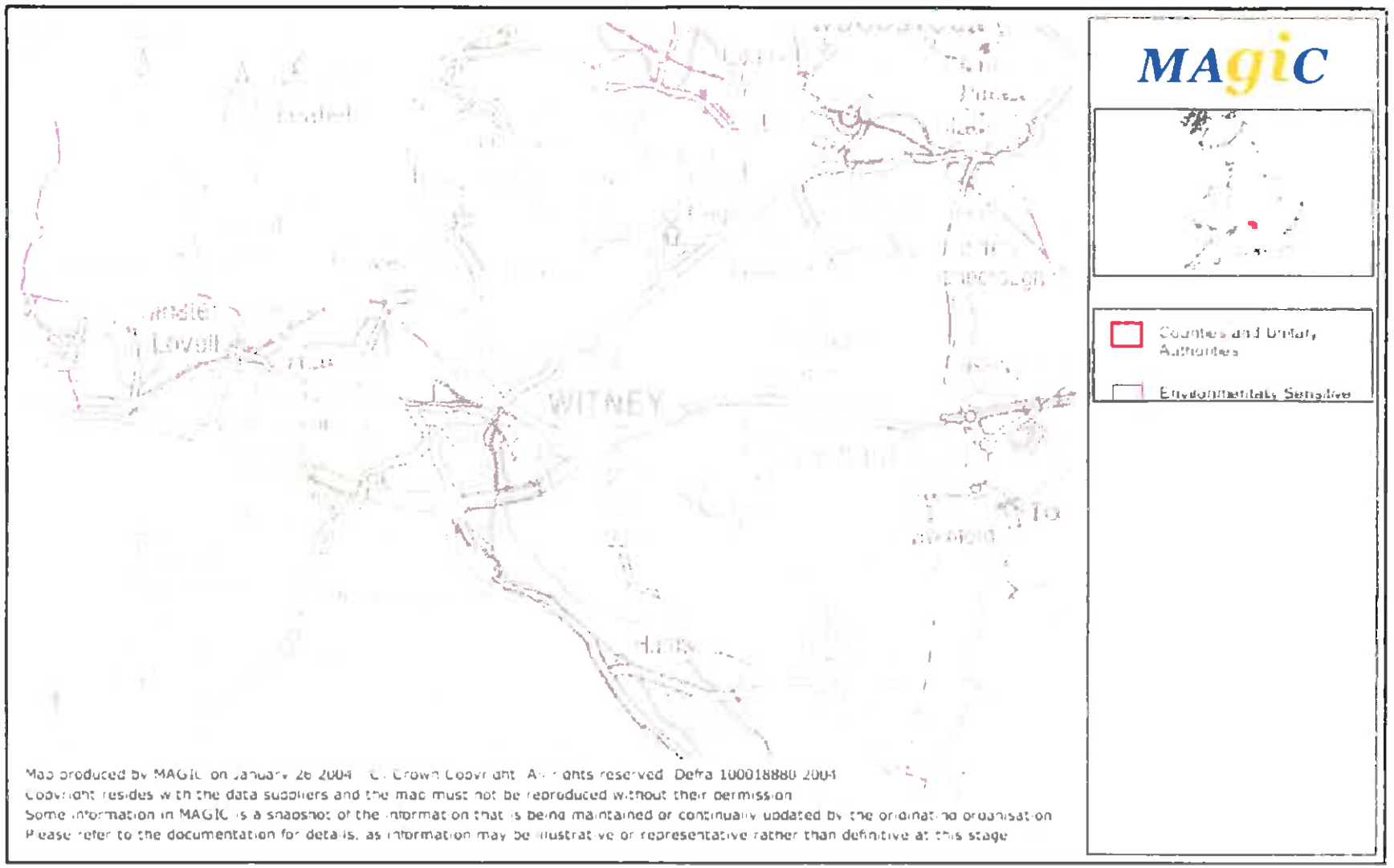
KEY

Church Farm South Leigh

Witney Town Council - Country Park

APPENDIX KCC 5

UPPER THAMES TRIBUTARIES ESA BOUNDARY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