

Agricultural Resources

10

10 Agricultural Resources

10.1 Introduction

10.1.1 Land Research Associates have been appointed to undertake an assessment of the proposed development, with respect to agriculture and soil resources. The proposed development site is currently partly in agricultural use; hence agriculture would be a receptor of potential effects arising from the proposals. Development could affect both the land resource and agricultural businesses operating on the site.

10.1.2 The soil within the site is largely undisturbed and acts as a filter to attenuate and immobilise substances falling on it, regulates rainfall movement to surface water and groundwater and supports ecological habitats and biodiversity. The sustainable management of soil and land is a central pillar in sustainable development and, consequently, any effects on soil will also be important.

10.2 Legislation and Policy

National Policy

10.2.1 National planning policy guidance relating to agriculture and soils is in National Planning Policy Framework (NPPF)¹ which states at paragraph 112 that:

“Local planning authorities should take into account the economic and other benefits of the best and most versatile agricultural land (defined as land in Grades 1, 2 and 3a of the Agricultural Land Classification). Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of a higher quality.”

10.2.2 Paragraph 109 of the NPPF states that:

“The planning system should contribute to and enhance the natural and local environment by ... protecting and enhancing valued landscapes, geological conservation interests and soils’ and ‘preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.”

10.2.3 National Planning Practice Guidance (NPPG)² states that the planning system should protect and enhance valued soils and prevent the adverse effects of unacceptable levels of pollution. This is because soil is an essential finite resource that provides important ecosystem services, for example as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution.

Local Policy

10.2.4 The Forest Heath and St Edmundsbury Joint Development Management Policies Document³ refers in Policy DM5 to possible restrictions to new development in the countryside on best and most versatile agricultural land. However, the presumption in favour of sustainable development, set out in the NPPF and adopted as Policy DM1 of the Joint Development Management Policies Document, effectively means that where significant development on Greenfield land is viewed to be necessary, the adverse impacts on agricultural land resources (and soils resources) should be weighed against the benefits of the development.

10.3 Methodology

10.3.1 The assessment is designed to assess the effect on three receptors - agricultural businesses, agricultural land resources, and soil resources.

Data sources

10.3.2 Data was obtained from the sources described below.

- Existing agricultural land quality information: Natural England's MAGIC website.
- Information on soil types: 1:250,000 soil map and the accompanying book 'Soils and Their Use in Eastern England' (Soil Survey Bulletin No. 13).

Assessment Approach

10.3.3 Details of the agricultural businesses that would be affected by the proposed development were identified by interview with the main user. That covered issues such as nature of the agricultural business, land use practices, entry of land into schemes such as environmental stewardship, and the use of land outside of the proposed development site.

10.3.4 Soil resources were reviewed by means of a desk study of published and unpublished soil maps and reports, and more accurately assessed by a detailed survey across the proposed development site, involving observations of soil and land characteristics at intersects of a 100m grid, giving a sample density of one observation per hectare.

10.3.5 Agricultural land quality was assessed using information from the soil resources survey and other constraints to agricultural land use, such as climate, flooding and slope.

Significance Criteria

10.3.6 There is no nationally agreed scheme for classifying the effects of development on agriculture or soils and the approach used in this chapter has been developed over a number of years. Effects of a project can be adverse, causing significant negative effects on a receptor, beneficial, resulting in advantageous or positive effects on a receptor, or negligible.

Magnitude of Effects

10.3.7 The magnitude of effect on best and most versatile land will depend on the amount to be taken by the development. Article 18, Schedule 4 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 only requires Natural England to be consulted (on behalf of the Secretary of State for the Environment, Food and Rural Affairs) on development that involves the loss of not less than 20ha of Grades 1, 2 or 3a agricultural land. Consequently, the magnitude of losses smaller than this threshold is considered to have a small effect on the national stock of best and most versatile land. Losses of over 80ha of best and most versatile land are equivalent to the size of a medium to large farm and consequently the magnitude of effect is considered to be large. The judgment-based classification is given in Table 10.1.

10.3.8 In considering the magnitude of the effect on farm businesses it is necessary to consider what proportion of the land utilised by the business will be taken by the proposed development, whether the farm will

remain a viable business after development is complete and how much restructuring might be necessary as a result of the proposed development. Where land is farmed by the owners of the land, and the sale is voluntary (as opposed to a compulsory purchase order) the effect is considered beneficial, and no further assessment is made. Table 10.1 gives examples of adverse effects of different magnitude.

10.3.9 Assessing the effects on soil is complicated as it is a multi-functional resource. Soils are able to mitigate flood risk, provide physical support and nutrient cycling to plants and dispose and decompose of wastes and dead organic matter. A provisional classification is included in Table 10.1 (below).

Table 10.1: Magnitude of effects on the three receptors

Magnitude of effect	Agricultural land	Agricultural businesses	Soil resource
Large	Irreversible loss of >80 ha of best and most versatile land	Full-time farm business rendered unworkable and unviable. The farmer will have to seek alternative means of income.	Loss or irreversible damage to all topsoil resources. Sealing of more than 75% of the soils within the Site.
Moderate	Irreversible loss of 20-80 ha of best and most versatile land	Reduction in net farm income requiring such that substantial restructuring is required.	Loss or irreversible damage to at least 50% of topsoil resources. Sealing of 50-75% of the soils
Small	Irreversible loss of 5-20 ha of best and most versatile land	Reduction in net farm income such that only minor restructuring is necessary.	Beneficial re-use of all or nearly all good quality topsoil resources ² . Sealing of <50% of the soils within the site.
Negligible	Irreversible loss of <5 ha of best and most versatile land	Minimal effects, such as changed field accesses, not necessitating farm restructuring	Only minor disturbance of soils within the site, with minimal surface sealing

Note 1: as by impermeable surfaces or through over-compaction of exposed soils.

Note 2: defined for this purpose as undamaged light or medium loamy or silty topsoils.

Sensitivity of Receptors

10.3.10 Best and most versatile agricultural land (i.e. Grades 1, 2 & 3a on MAFF's 1988 Agricultural Land Classification system) is considered to be a finite national resource, is given special consideration in national policy, and can be considered to be of higher sensitivity than land in Grades 3b, 4 and 5. Land quality varies regionally and in areas such as West Suffolk and Cambridgeshire, best and most versatile land is the norm (unlike Wales for example, where it is relatively rare). In such areas, subgrade 3a land, as a very common local resource, and often the lowest quality available, is viewed as of medium rather than high sensitivity.

10.3.11 Where land is contract-farmed or farmed through a tenancy arrangement without long-term security of tenure and without a long-term history of occupying that land, then the sensitivity to loss of use of that land is deemed to be low, because the right of the tenant or contractor to farm the land could cease, with agreed notice, at any time. Conversely, a farm business occupied by a long-term agricultural tenant is likely to be highly sensitive to change. Economic benefits from sale of agricultural land for development might also influence perceived and actual sensitivity (Table 10.2).

10.3.12 Assessing the sensitivity of soils is more complicated as soil is a multi-functional resource that provides a range of ecosystem services. These include physical support and nutrient cycling for plants, moderation of the hydrological cycle, providing a habitat and gene pool, and disposal of wastes and dead organic matter. For example, permeable loamy soils capable of absorbing heavy rainfall and attenuating flooding, or

supporting valued habitats will be more sensitive than impermeable clay soils used for intensive arable monoculture.

Table 10.2: Sensitivity of the three receptors

Sensitivity	Agricultural land in the St Edmundsey Borough	Agricultural businesses	Soil resource
High	Grades 1 & 2	Long-term Agricultural Holdings Act tenant	Permeable loamy soils providing a broad range of ecosystem services, or supporting valuable habitats
Medium	Sub-grade 3a	Mixed business farming some owned land and some medium- or short-term rented land	A mixture of soils, none of them supporting valuable habitats
Low	Sub-grade 3b and grades 4 & 5	Full time owner-occupied farm business that will gain sufficiently from sale of land to be economically unaffected OR agricultural user on a short-term tenancy or licence	Slowly permeable, damaged or contaminated soils providing a limited range of ecosystem services.

Significance of effects

10.3.13 The significance of any beneficial or adverse effect can be assessed as either ‘major’ or ‘moderate’ (i.e. significant), ‘minor’ or ‘negligible’ according to the magnitude of the effect of the proposed development and the sensitivity of the receptor, as set out in Table 10.3 below. Moderate and major adverse effects are considered to be ‘significant’.

Table 10.3: Significance of effects

Magnitude	Sensitivity			
	High	Medium	Low	Negligible
Large	Major	Major	Moderate	Minor
Moderate	Major	Moderate	Minor	Negligible
Small	Moderate	Minor	Minor	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

10.4 Baseline Conditions

Agricultural Businesses

10.4.1 The agricultural land within the proposed development site is mainly in arable use – under winter cereals and oilseed rape at the time of survey. Small areas are under permanent grass. The land is all farmed in-house by Great Wilsey Farm as part of a wider holding.

Agricultural Land Quality

10.4.2 The site contains 107.9ha of subgrade 3a land, 36.2ha of subgrade 3b land (most limited by soil wetness) and 21.7ha of non-agricultural land. Full explanations of the grading are provided in Appendix 10.1. The soil type is the same as that of all land around Haverhill and much of the wider area. Provisional

Agricultural Land Classification mapping of the area shows grade 2. It is therefore concluded that this land is of average or below average quality for the local area and is not a scarce local resource.

Soil Resources

- 10.4.3 The proposed development site contains heavy soils with impeded drainage. These soils support mainly arable cropping, with non-agricultural areas of semi-mature deciduous woodland. The better-draining soils, covering approximately 25% of the site, have a high capacity to absorb excess rainfall in summer and a moderate capacity in winter. The soils of the remainder of the site have slowly permeable subsoil at shallow depth, with a high capacity to absorb rainfall in summer, and a low capacity in winter. Full details are provided in Appendix 10.1.

10.5 Predicted Effects

During Construction

Agricultural Businesses

- 10.5.1 Loss of agricultural production from parts of the site will occur as soon as construction commences; given construction will be phased, continued access to unaffected land for agricultural production could continue however. The development of the whole site would ultimately result in the loss of 144ha of agricultural production land from the Great Wilsey Farm business. However, the landowners would be compensated through the sale of the land, and no tenancy business would be affected. Since the sale of the land is voluntary and does not affect any tenancy businesses the effect is considered to be beneficial.

Agricultural Land Resources

- 10.5.2 Construction would result in progressive loss of agricultural land. The development of all agricultural land at the site would result in a high magnitude loss of a medium sensitivity resource (107ha of subgrade 3a land): this would have a major adverse effect on agricultural land resources.

Soil Resources

- 10.5.3 The soils support valuable habitats and serve as a store of rainwater during heavy rainfall events. The topsoils are a valuable finite resource which could be lost or damaged if mixed with geological materials or buried. The topsoils are also heavy and susceptible to structural damage if handled with machinery when wet. The upper subsoils are often naturally moderately permeable with capacity to store and transmit excess rainfall. If compacted by construction traffic they may be rendered impermeable, resulting in increased runoff and erosion and impeded rooting depth. Areas of soils also support valuable habitats (semi-mature deciduous woodland) but these would be retained under the proposed development. The proposed development could result in the loss or sealing of soils over 50-75% of the site, constituting a moderate magnitude effect on a medium sensitivity resource, and a moderate adverse effect.

Operation

Agricultural Businesses and Agricultural Land Resources

- 10.5.4 The effects on farm businesses and agricultural land resources which would occur during the construction phase would be permanent effects (i.e. would not differ during the construction phase).

Soil Resources

10.5.5 If soils are compacted, some recovery of soil function due to settlement and plant rooting will occur. However, severe compaction and loss of soil resources are long term impacts and therefore the major adverse effect of construction would persist into the operational phase.

10.6 Mitigation, Monitoring and Residual Effects

Agricultural Businesses

10.6.1 Given the voluntary sale of the land would be beneficial to the land owners, no mitigation is necessary.

Agricultural Land Resources

10.6.2 The loss of agricultural land to construction cannot be mitigated. The residual effect is therefore major adverse, and should be weighed against the benefits of the scheme in accordance with the guidance in the NPPF and the presumption in favour of sustainable development. In this regard, the fact that any similar development scheme around Haverhill or the wider locality would result in significant loss of best and most versatile agricultural land should be a material consideration when evaluating what weight should apply to the loss of agricultural land.

Soil Resources

10.6.3 As part of the mitigation proposed for drainage and flood risk (see Chapter 11) the enhanced risk of flooding is mitigated by the provision of a SUDS scheme. This means that the loss of soil function in storing and transmitting water to prevent urban flooding is effectively offset. The proposed development also includes retention of 78.28ha of green infrastructure, where soil function (principally water storage and supporting plant growth) may be retained, as well as in private gardens. The potential adverse effects on soil functions (described in paragraph 10.5.3) can be mitigated against in these areas, as described below.

10.6.4 The Construction Code of Practice for Sustainable Use of Soils on Construction Sites⁴ provides guidance on good practice in soil handling. Soil management to be employed on the project will form part of the Construction Environmental Management Plan and include.

- Avoidance of traffic in areas that do not need to be disturbed;
- Careful stripping of topsoil (using suitable soil-handling equipment) from areas to be disturbed, ensuring no mixing with subsoil;
- Storing soils in temporary low stockpiles, protected from contamination by other materials and sown with grass if being stored for more than 6 months;
- Spreading topsoil only onto subsoil that has been de-compacted; and
- Using any surplus topsoil beneficially elsewhere.

10.6.5 These measures, and the soil and land functions that they are designed to protect, are summarised in Table 10.4.

Table 10.4: Mitigation measures to avoid or reduce the main effects of construction on soil and land functions

Soil/land function	Design measure
Landscape support	Retention of stripped topsoil. Minimising soil compaction in landscaped areas. Avoidance of traffic on undisturbed areas.
Transformation and buffering	Maximising use of porous surfaces. Minimising soil compaction.
Supporting habitats/biodiversity	Minimising soil compaction in landscaped areas. Avoidance of traffic on undisturbed areas.
Storing and transmitting water	Maximising use of porous surfaces. Minimising soil compaction in landscaped areas.

10.6.6 The residual effect on soil resources after the proposed mitigation would be minor adverse.

10.7 Non-Technical Summary

10.7.1 This chapter concerns the potential effects of the proposed development on agriculture (agricultural businesses and loss of agricultural land) and soils. The study has been conducted through a detailed survey of the land in February 2015.

10.7.2 The survey showed the land to be mainly under use for winter cereal-oilseed rape cropping under the operation of the land owners, Great Wilsey Farm. The site contains areas in non-agricultural use (21.7ha), principally under woodland. The soils are heavy with impeded drainage, giving a mixture of subgrade 3a (107.9ha) and subgrade 3b (36.2ha) agricultural land.

10.7.3 The voluntary sale of the land by the landowners would not affect any other businesses and the effect is therefore viewed as beneficial.

10.7.4 The loss of 107.9ha of best and most versatile agricultural land in subgrade 3a would constitute a major adverse impact to be weighed against the benefits of the scheme. The fact that any similar development on Greenfield land in this area would inevitably result in significant loss of best and most versatile agricultural land should be considered in such a weighting.

10.7.5 The proposed development could potentially result in a significant adverse effect on finite soil resources, through loss and damage during construction. Mitigation is proposed in the form of a soil management plan which accords with the Construction Code of Practice for Sustainable Use of Soils on Construction Sites. The residual effect after such mitigation would be minor adverse.

Table 10.5: Summary of Potentially Significant Effects

Predicted Effect	Sensitivity	Magnitude	Significance	Other Parameters	Mitigation, Monitoring & Controls	Magnitude	Significance	Other Parameters
Effect on agricultural businesses	N/A	Positive	Positive	N/A	N/A	Positive	Positive	N/A
Loss of agricultural land	Medium	Major Negative	Major Negative	P, Ir	None possible	Major Negative	Major Negative	P, Ir
Loss of or damage to soil function	Medium	Moderate Negative	Moderate Negative	P, Ir	Protection and reuse of topsoils Soil management plan in accordance with Code of Practice	Small Negative	Minor Negative	P, Ir

Notes: Short term (0-5 years) = ST, medium term (5-10 years) = MT, long term (10+ years) = LT, permanent = P, temporary (construction) = T, intermittent = I, reversible = R, irreversible = Ir.

10.8 References

- 1 DCLG. (March 2012). National Planning Policy Framework.
- 2 DCLG. (March 2014). National Planning Practice Guidance.
- 3 Forest Heath District Council & St Edmundsbury Borough Council. (February 2015). The Forest Heath and St Edmundsbury Local Plan Joint Development Management Policies Document.
- 4 DEFRA. (September 2009). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.