11 AGRICULTURE AND LAND USE

Summary

This chapter assesses the potential effects on agriculture and land-use as a result of the construction, operation and decommissioning of the Proposed Project. The assessment has focused on the soil types present, the quality of the agricultural land and the farming practices being used. The majority of the land comprises pastoral farmland. The land is generally of poor quality, with topography and soil characteristics limiting the way the land can be used thus limiting its productivity. As such, the land is defined as a 'Less Favourable Area' for agriculture.

The main effects of the Proposed Project on agriculture and land-use relate to temporary effects on agricultural practices, and the permanent loss of 0.3ha of land, along with the potential for increased disturbance to livestock as a result of the temporary diversion of the Trans Pennine Trail. The design of the project, the adoption of best practice construction techniques and approaches, and compensation discussions with landowners will minimise any potential effects so that no significant effects on agriculture and land use are predicted.

11.1 Introduction

11.1.1 This chapter of the Environmental Assessment Report presents an assessment of the potential agriculture and land use effects arising from the construction (including overhead line (OHL) removal), operation and decommissioning phases of the Proposed Project. This includes an assessment of potential impacts, their significance, the requirements for mitigation and any residual impacts. In particular the assessment focuses on the potential for effects on agricultural practices, the potential for impacts on soils, biosecurity and on the ability of farmers and landowners to achieve their commitments made under agri-environmental schemes.

11.2 Scope and Methodology

11.2.1 The scope of this assessment has been established through a formal environmental assessment scoping process undertaken in 2016. No specific comments in relation to this topic were raised.

11.2.2 This assessment has been informed by data from other assessments as follows:

- Chapter 7 (Ecology);
- Chapter 10 (Geology, Soils and Contaminated Land); and
- Chapter 13 (Socio-Economics and Tourism).

11.2.3 This assessment focusses on the following principal factors:

- The soil types and their sensitivity and suitability for reinstatement;
- The extent of permanent land take in relation to effects on high quality land as assessed within the Agricultural Land Classification (ALC) system (with particular reference to the potential presence of best and most versatile (BMV) land (ALC grades 1, 2 and 3a);
- The type of farm enterprises and farming/land management practices present, including any agri-environment schemes; and,
- The possible presence of crop/soil/animal diseases or noxious weeds, and the risk of spreading such disease/weeds.

11.2.4 The objectives of the assessment are to:

- Characterise the baseline environmental conditions for soils, land-use and agriculture within the Study Area;
- Identify all soils, land-use and agricultural receptors within the Study Area that may be affected during the construction, operation and the decommissioning phases of the Proposed Project;
- Assess the likely significant effects of the Proposed Project on soil, land-use and agriculture, taking account of temporary and permanent land-use requirements and site restoration; and,
- Recommend measures, if appropriate, to mitigate potential significant adverse effects on soil, land-use and agriculture.

11.2.5 As detailed in the Scoping Report (National Grid, July 2016) the following topics have been scoped out:

- Potential economic effects that the Proposed Project will have on individual landowners and farmers; and
- Temporary land take during construction and decommissioning.

11.2.6 Any financial consequences on individual landowners and farmers due to the Proposed Project will be temporary, as the land will be reinstated after the construction and decommissioning phases. In addition, farmers will be reasonably compensated for loss of earnings as a direct result of the Proposed Project.

11.2.7 In relation to temporary land take, as the Study Area is not located on high grade land, as defined under the ALC system, it is not proposed to assess the impact on temporary loss of the agricultural resource during the construction and decommissioning phase.

Study area

11.2.8 The Study Area for the agriculture and land use assessment comprises the Area of Search for Permanent and Temporary Works which was established for data collection purposes to encompass the likely maximum extent of all temporary and permanent works associated with the Proposed Project.

11.2.9 The Area of Search for Permanent and Temporary works has subsequently been refined as design has progressed to define the Site Boundary, this Site Boundary is located immediately to the east of Winscar Reservoir and is shown on Figure 11.1.

Assessment criteria

11.2.10 There are no established or published methods for assessing the impacts of development upon agricultural receptors; however, there are a number of other guidance documents which are of relevance. The following documents have been used to inform the methodology:

- Design Manual for Roads and Bridges (DMRB), Volume 11, Section 2, Part 5: Assessment and Management of Environmental Effects (Highways England, 2008); and,
- DMRB, Volume 11, Section 3, Part 6: Land Use (Highways England, 2001).

11.2.11 In assessing the significance of potential effects of the Proposed Project two factors have been taken into account:

- The sensitivity of the receiving environment; and,
- The magnitude of the potential impact.

11.2.12 The approach to assigning levels of sensitivity to receptors was outlined in the scoping report, as detailed in the Table 11.1. Whilst the effects on temporary loss of agricultural land have been scoped out, reference to land quality and its sensitivity is provided within the table below to provide the context on this and to enable assessment of permanent land take.

Table 11.1: Assessment of the value/sensitivity of receptors for agriculture and land use

Sensitivity of receptor	Description	Examples
High	Very high agricultural and land use value, quality or rarity on a national scale.	• National land use allocations • Grade 1 agricultural land • Higher Tier Countryside Stewardship (CS)/ Higher Level Stewardship (HLS) land • Soils with a very low resilience to structural damage (e.g. clayey soil) • Pastoral Farms
Medium	High agricultural and land use value, quality or rarity on a national scale.	• Regional land use allocations • Grade 2 and 3a agricultural land • Soils with a moderate resilience to structural damage (e.g. loamy soils) • Mixed farms
Low	Medium agricultural and land use value, quality or rarity on a regional scale.	• Local land use allocations • Grade 3b agricultural land • Soils with a low resilience to structural damage (e.g. sandy soils) • Organic arable farms
Very Low	Low or negligible agricultural and land use value, quality or rarity on a local scale.	• Grade 4 and 5 agricultural land • Individual planning applications • Capital Grants Countryside Stewardship (CS)/Entry Level Stewardship (ELS) land • Other soil types (e.g. made ground) • Non-organic arable farms

11.2.13 The magnitude of impact is based on the consequences the Proposed Project would have upon agricultural and land use receptors. There is no published guidance on thresholds for assessing what scale of loss should be regarded as significant, but the presence of best and most versatile land is a key factor in the consideration of the sustainability of development proposals, as set out in paragraph 170 of the National Planning Policy Framework (NPPF)[1].

11.2.14 Table 11.2 below details the approach to the assessment of the magnitude of impacts.

[1] National Planning Policy Framework (NPPF) February 2019

Table 11.2: Assessment of the magnitude of impact agriculture and land use

Magnitude of Impact	Description	Examples
High	Results in total loss or substantial change to key features or attributes of the resource, or its key characteristics, features or elements, such that post development character/composition will be fundamentally changed, affecting its integrity or viability.	• Permanent loss or degradation of over 20ha of best and most versatile land (BMVL), or entire regional resource of BMVL (ALC Grades 1, 2, 3a) • Permanent, full displacement of intended land uses • Current farm practice is seriously affected leading to major viability issues
Medium	Results in partial loss or alteration to key features or attributes of the resource, or its key characteristics, features or elements, such that post development character/composition will be materially changed, affecting its integrity or viability.	• Permanent loss or degradation of 5-20ha of BMVL, or large proportion of regional resource of BMVL • Permanent, moderate displacement of intended land uses • Current farm practice is affected but overall viability unlikely to be affected
Low	Results in a measurable, but not material change, to key features or attributes of the resource, or its key characteristics, features or elements, such that post development character/composition will be similar to the pre-development situation.	• Permanent loss or degradation of <5ha of BMVL, or small proportion of regional resource of BMVL • Permanent loss of peripheral land for intended land use or temporary loss of large-moderate area • Current farm practice is marginally affected but with no effect on viability
Very Low	Results in a little or no change to key features or attributes of the resource, or its key characteristics, features or elements, such that change is barely distinguishable.	• No loss of BMVL • Permanent loss of small land parcels, such that existing and intended land use can continue or temporary loss of minor area • No noticeable changes in farm practices

11.2.15 Table 11.3 below details the matrix used for the classification of the significance of effects.

Table 11.3: Significance of effects

		Magnitude of impact			
		High	Medium	Low	Very Low
Sensitivity of receptor	High	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	Very Low	Minor	Negligible	Negligible	Negligible

11.2.16 Following the classification of an effect as presented in Table 11.3, a clear statement is made as to whether the effect is 'Significant' or 'Not Significant'. As a general rule, major and moderate effects are considered to be significant and minor and negligible effects are considered to be not significant. However, professional judgement is also applied where appropriate.

Assessment methodology

11.2.17 The principal agricultural and related receptors are the quality of the agricultural land and the land management practices (along with the facilities/machinery required for such operations), as well as diversified activities on farms.

11.2.18 A range of baseline information sources held in the public domain have been reviewed in order to assess the baseline character of the Study Area in terms of land use, agriculture and soils, including:

- Ordnance Survey mapping and aerial photography to establish land use and settlement patterns;
- ALC details for the area (1:250 000 scale; available on the MAGIC website[2]);
- Climatic data and Land Information System Soil Site Report, purchased from National Soil Resources Institute (NSRI);
- Review of Land Information System Soilscapes database (available on the MAGIC website);
- MAGIC Website to ascertain information on agri-environmental schemes;
- Available information on known agricultural practices affected by the Proposed Project;
- Consultation with Natural England to ascertain information on agri-environmental schemes;
- Review of the Peak District National Park Core Strategy Development Plan Document (Peak District National Park Authority, 2011), and the Barnsley Local Plan (2019).

11.2.19 In addition, a site walkover was undertaken to assess how the land was being used.

Assumptions and limitations

11.2.20 No assumptions or limitations have been identified.

[2] www.natureonthemap.naturalengland.org.uk

11.3 Consultation Undertaken

11.3.1 The scope of the assessment has been informed by ongoing consultation and engagement with statutory consultees throughout the design and assessment process. As detailed in Table 11.4 below no specific advice was received as part of the Scoping Opinion with regard to the land-use and agriculture chapter.

Table 11.4: Consultation comments and responses on Agriculture (National Grid Scoping Report 2016)

Date	Summary of Scoping Opinion	Where addressed in the Agriculture and Land Use Chapter
25 November 2016	Peak District National Park Authority – Scoping Opinion - no comments were made specifically relating to agriculture and land use.	Whilst no specific comments have been made, the potential effects on agriculture and land use have been assessed in this chapter.
16 January 2017	Barnsley Metropolitan Borough Council – Scoping Opinion - no comments were made specifically relating to agriculture and land use.	Whilst no specific comments have been made, the potential effects on agriculture and land use have been assessed in this chapter.

11.4 Statutory and Planning Context

11.4.1 This section identifies and describes legislation, policy and guidance of relevance to the assessment of the potential agriculture and land-use impacts associated with the Proposed Project. Legislation and planning policy has been reviewed where relevant to the agriculture and land use assessment; this has influenced the identification and categorisation of sensitive receptors and the scope and method of assessment.

National

11.4.2 There are no legislative requirements governing the assessment of agricultural matters, and the framework of any assessment is derived from a combination of EU and national agricultural and land use policies and measures. The key elements of these can be summarised as:

- The conservation of the BMV resources of agricultural land;
- Retention of a competitive and sustainable agricultural industry;
- The diversification of individual farm businesses into supplementary non-agricultural activities;
- The more positive engagement of individual farm businesses with the delivery of environmental benefits.

National Planning Policy

National Planning Policy Framework

11.4.3 The NPPF states that '*planning policies and decisions should contribute to and enhance the natural and local environment by: b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and*

ecosystem services, including the economic and other benefits of the best and most versatile agricultural land.'

11.4.4 A footnote also states that '*Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.*'

The Soil Strategy for England

11.4.5 The Soil Strategy for England[3] sets out the Governments aims in relation to protecting agricultural soils and in relation to protecting the soil resource during construction and development. There is a commitment to review the weight given to protecting best and most versatile land and review the need for any change to policy; no change has currently been advised.

11.4.6 Within the Strategy there is an aim of encouraging better management of soils during the construction process. As part of this, a Code of Practice for the sustainable re-use of soils on construction sites has been published by Defra (2009) to protect soil resources disturbed on construction sites. Whilst the Code is not legislatively binding, the wider benefits of following the guidance (in terms of sustainability, cost savings and waste controls) are clearly set out.

Local Planning Policy

11.4.7 The planning application for the Proposed Project is accompanied by a Planning Statement which considers the extent to which the proposed development complies with the following planning policy:

- Barnsley Local Plan (BMBC, January 2019);
- Peak District National Park Authority Local Development Framework Core Strategy Development Plan Document (PDNPA, 2011); and
- Peak District National Park Authority Development Management Policies: Part 2 of the Local Plan (2019).

Other guidance

11.4.8 A number of other guidance documents relevant to soils and agriculture are available. In general these relate back to the policy and guidance documents referenced above, and include:

- Natural England Technical Information Note 049. Agricultural Land Classification: protecting the best and most versatile agricultural land (2012)[4];
- Good Practice Guide for Handling Soils (MAFF, 2000)[5]; and,
- British Standard Specification for Topsoil and Requirements for Use (BS3882:2007)[6].

[3] Defra (2009). Safeguarding our Soils: A Strategy for England.

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

[5] MAFF (2000). Good Practice Guide for Handling Soils.

[6] British Standard Specification for Topsoil and Requirements for Use (BS3882:2007).

11.5 Existing Environment

Land Use

11.5.1 The majority of the Study Area comprises pastoral farmland, with scattered farm buildings to the north, off Brook Hill Lane. In the southern area is the River Don, along with a line of woodland and moorland (Thurlstone Moor). There are also a number of properties at Dunford Bridge.

11.5.2 There are also a number of Public Rights of Way (PRoW) that dissect the Study Area, including the Trans Pennine Trail and National Cycle Route 62 which follow a disused railway line as well as the Don Valley Trail from west to east. National Cycle Route 68 runs from North to South around the Winscar Reservoir.

11.5.3 A small section of the Study Area, closest to the Woodhead Tunnel, is located within the Peak District National Park boundary. This section of the National Park is denoted as a 'Natural Zone' within the Core Strategy Development Plan Document (Peak District National Park Authority, 2011) and restricts development, other than in exceptional circumstances. There are no applicable land allocations, as included in the Barnsley Local Plan for the majority of the Study Area.

11.5.4 Within the Study Area are a variety of habitats which include woodland (coniferous and mixed plantations, as well as broadleaved), scrub, grassland and dry heath/acid grassland mosaic (see Chapter 7 (Ecology) for further details of the habitats present).

Topography

11.5.5 The topography within the Study Area ranges from 410m AOD to 270m AOD. Tinker Hill in the north rises to 410m AOD with south or south-east facing slopes of approximately 6°.

11.5.6 The OHL runs through the valley adjacent to the River Don. To the south the land rises again with slopes up to 6° towards the A628.

11.5.7 The topography in the western part of the Study Area is steeper, with slopes up to 8° around parts of Winscar Reservoir.

Geology

11.5.8 The geology underlying the Study Area comprises Carboniferous rocks which dip gently towards the east and more steeply towards the west. This geology comprises the Marsden Formation, consisting of mudstone, siltstone, sandstone with seat earth beds, coal seams and marine bands of black shale.

11.5.9 Made Ground was encountered along the entire length of the Study Area which is consistent with the sites historical use as a railway line. The nature and depth of the Made Ground varies significantly across the Study Area. Further detail on the geology of the Study Area is provided in Chapter 10 (Geology, Soils and Contaminated Land).

Soils

11.5.10 Soil types present within the Study Area are shown on Figure 11.1 (the data has been presented at a larger scale than it was published at to ensure the Site boundary is visible; use of this larger scale does not infer any greater ability to rely on the boundaries shown between soil types). In the north-western part of the Study Area across the plateau of Tinker Hill, as well as the southern and eastern slopes, blanket bog peat soils are present. These soils are naturally wet and have a very

low natural fertility. These soils are also present in the western and south-western parts of the Study Area, particularly where the ground lies at over 300m AOD.

11.5.11 On the lower slopes the soils become very acid loamy upland soils with a wet peaty surface, again with these soils having a very low natural fertility. These soils generally lie between 270m AOD and approximately 370m AOD across the centre of the Study Area around Townhead.

11.5.12 In the low lying areas within the valley slowly permeable, seasonally wet acid loamy and clayey soils are present. These soils have impeded drainage and a low natural fertility.

11.5.13 The areas of lower relief land in the eastern part of the Study Area comprise slowly permeable wet very acid upland soils with a peaty surface. These soils also have impeded drainage and a low natural fertility.

11.5.14 The blanket bog soils belong to the Winter Hill Series. Soils on the lower slopes belong to the Wilcocks and Belmont Series, with the valley bottom soils belonging to the Dale Series.

Agriculture

11.5.15 The Study Area lies within the Dark Peak National Character Area (NCA), close to the boundary with the Yorkshire Southern Pennine Fringe NCA. The Dark Peak NCA is a landscape of large-scale sweeping moorlands, in-bye pastures enclosed by drystone walls, and gritstone settlements, within the Pennine chain. The Yorkshire Southern Pennine Fringe is characterised by steep slopes that are cut through by narrow rivers, notably the Don, the Calder, the Hebble Brook and the Colne in the north and the Sheaf, the Rivelin and the Loxley in the south near Sheffield, which open up into valleys on lower land.

11.5.16 Agriculture is largely limited to livestock grazing on upland pastures, with some small-scale dairy farming in the valley bottoms. Dry gritstone walls, built from local stone, are the only traditional form of field enclosure. Enclosures are generally irregular to regular in shape on flatter, lower margins, displaying a long history of enclosure from the medieval period, and larger in scale towards higher ground. Improved pastures are found on the relatively better quality land on lower moorland fringes and in the wider valleys, and in places (for example the Hope Valley) there are extensive strong, regular patterns of walled fields. Many of the farms hold rights, which they actively exercise, to graze livestock on the moorlands.

11.5.17 The land in the Study Area is defined as a 'Less Favoured Area' for agriculture. This is an EC Designation which provides special measures to assist farming in the areas designated (mainly upland) areas where the natural characteristics make it difficult for farmers to compete.

11.5.18 The Moor Line lies to the south of the Trans Pennine Trail and encloses land within England which has been defined as predominantly semi-natural upland vegetation, or predominantly of rock outcrops and semi-natural vegetation, used primarily for rough grazing).

Agricultural Land Classification

11.5.19 The main physical factors influencing agricultural land quality are:

- Climate
- Site (gradient, micro-relief, risk of flooding)
- Soil (including geology)

- Interactive limitations (such as soil wetness or droughtiness).

11.5.20 The provisional (pre-1988) ALC mapping (see Figure 11.2) shows that most of the land in and around the Study Area in the high relief areas comprises Grade 5 land (described as very poor quality agricultural land with very severe limitations which restrict its use to permanent pasture or rough grazing). The lower relief area comprises Grade 4 land (described as poor quality land with severe limitations which significantly restrict the range of crops and/or level of yields).

11.5.21 Some small areas of land outside the Study Area are mapped as either Grade 4 or 5 land (from the post-1988 available mapping; see Figure 11.3).

11.5.22 The available climate data for the land within the Study Area indicates that this land would generally be limited to Grade 4 or below due to climatic limitations. The slope angles present will also, in places, limit the grade that can be achieved.

Agri-environmental schemes

11.5.23 Land within the Study Area is fairly extensively under Stewardship agreements (as shown on Figure 11.4). For example, land to the south of the Trans Pennine Trail is under a combined Entry and Higher Level Stewardship agreement. Immediately north of the Trans Pennine Trail the land is under a Higher Level agreement.

Forestry and Woodland Scheme

11.5.24 The woodland below the reservoir dam is subject to English Woodland Grant Schemes and Felling Licence Agreement.

11.5.25 The Study Area is also entirely within the White Rose Community Forest area, a network of local woodlands, parks and estates that offer people a chance to explore the natural environment. From the information available none of the sites making up this network lie within the Study Area.

Notifiable Scheduled Diseases

11.5.26 Based on Defra and the Animal and Plant Health Agency (APHA) information and data (as of November 2018) no notifiable scheduled diseases have been reported within the Study Area.

Noxious/ Injurious Weeds and Invasive Plant Species

11.5.27 As indicated within Chapter 7 (Ecology) the only Schedule 9 invasive species recorded is Rhododendron, located on the embankment within the region of the cable building.

11.6 Key Parameters for Assessment

11.6.1 ***Embedded Mitigation*** Of particular relevance to Agriculture and Land Use are the following embedded mitigation measures which will be implemented during the construction phase:

- A Construction Environmental Management Plan (CEMP) will be prepared and used to manage environmental impacts during construction; this will include measures for controlling dust and general pollution from construction operations to the surface and groundwater environments and details of the approach to soil management to ensure protection, conservation and reinstatement of soil material, its physical and chemical properties and functional capacity for its intended end use.

- Construction in agricultural land will not be undertaken during extreme wet weather where erosion of sediments and risk from flooding may increase and where there is a risk of structural damage to soils during handling.
- All soils will be stored as far away from watercourses as practical and any potentially contaminated soil will be stored on an impermeable surface and covered to reduce leachate generation and potential migration to surface waters.
- Appropriate industry best practice and published guidelines will be followed to reduce pollutant and sediment movement during construction.
- All fuel and chemical storage will comply with relevant storage regulations and suitable precautions will be taken to prevent spillages from equipment containing small quantities of hazardous substances.
- Environment Agency guidance on the assessment of risks from potentially contaminated land will be followed in line with Contaminated Land Report 11 (CLR11)[7].
- Work will stop if any previously unidentified contamination is encountered until the nature and concentration of the contaminant(s) are determined and appropriate risk control measures implemented.
- The main works contractor will cease work and advise the Animal Health Regional Office should animal bones be discovered which indicate a potential burial site.
- The Trans Pennine Trail will be diverted, with the diversion remaining open for the duration of underground cable and SEC installation activities. The conditions of the diversion will be agreed with the Rights of Way Officer. The measures set out in the Trans Pennine Trail Management Plan will be adhered to.
- Measures to reduce the effect on the environment will be in place as outlined in the CEMP and this will include awareness-raising, through tool box talks, of the sensitivity required should livestock be in close proximity to works.
- Temporary fencing will be erected to limit the potential for livestock to be in danger during the construction of the temporary Trans Pennine Trail diversion.
- A Construction Traffic Management Plan will be prepared to secure appropriate routing and management of construction traffic.
- Deep excavations may require de-watering. Water pumped or removed from excavations will be passed through a silt-separator tank or equivalent, and discharged to ground. If there was a requirement to discharge to surface water a permit would be sought from the Environment Agency prior to undertaking such operations.
- Clay bungs or other vertical barriers will be constructed within trench excavations where deemed necessary to prevent the creation of preferential drainage pathways or to prevent the creation of preferential migration pathways for contaminants (where suspected).

[7] Environment Agency, Management of Land Contamination, Contaminated Land Report 11

- Measures contained in relevant Defra and Environment Agency best practice guidance on the control and removal of invasive weed species will be implemented.
- Following completion of construction operations all agricultural land will be restored to its previous condition unless specified otherwise in the LEMP. Topsoil will be prepared and seeded using an appropriate seed mix or returned to previous cultivation. A LEMP has been prepared to detail restoration objectives in key sensitive areas such as Wogden Foot LWS.
- Permanent surface water/ agricultural drains will be re-installed to reinstate any pre-existing field drainage systems to pre-construction condition.
- Following the completion of all cable installation construction works, the land within the working width will be fully reinstated as near as practically possible to its former condition, or as agreed with landowners and stakeholders in advance (this will include the reinstatement of most stretches of drainage ditches and existing culverts).
- Trees which will have been removed during the construction period will be replanted as outlined in the LEMP. Trees will not be planted above or within 3m of the cables to avoid the risk of damage to the cable by tree roots.
- Unless specified in the LEMP areas of habitat will be restored to equivalent habitat condition post-construction. Restoration will seek to replace vegetation with the same species identified in the extended Phase 1 habitat survey as far as is practicable, unless a specification is provided in the LEMP.
- In relation to temporary land take requirements or access limitations National Grid will liaise with landowners to agree commercial terms with affected parties including any loss of ongoing payments or fines relating to agri-environmental stewardship schemes. In addition, in discussion with landowners, temporary water supplies and troughs will be provided for livestock as necessary.

11.6.2 During the operational phase, the following embedded mitigation are relevant to this topic:

- Use of appropriate measures to prevent spillage of potentially polluting substances.
- Fuels, lubricants solvents etc will be stored in appropriately bunded areas and a range of other pollution prevention measures taken.
- For areas of permanent land take or where any permanent restriction of certain activities above the cables, these will be discussed with affected landowners and secured in the commercial terms.

11.7 Predicted Impacts

11.7.1 The potential impacts of the Proposed Project are detailed below. This assessment is based on the assumption that the embedded mitigation measures outlined above are put into place.

11.8 Assessment of impacts during construction

Trans Pennine Trail Diversion – Subject to Planning Application

11.8.1 The Trans Pennine Trail will be diverted for the duration of the Cable Corridor construction works. The proposed diversion will leave the existing Trans Pennine Trail to the east of the car park at Dunford Bridge and follow an existing farm track as far as possible. The diversion will cross onto the northern side of the River Don and pass across the fields before crossing back to the southern bank over a newly constructed temporary bridge. The diversion will then merge back into the Trans Pennine Trail passing the proposed SEC site.

11.8.2 The land required for the diversion is currently used for grazing and the works could potentially bring construction activities into close proximity to livestock. This receptor (including the soils, agricultural practices and agri-environment schemes) is of **High** sensitivity. However, the embedded mitigation will minimise the potential for any direct contact and thus it is considered that the magnitude of impact would be **Very Low**, resulting in a **Minor** effect which would be **Not Significant**.

11.8.3 Following completion of the works and reinstatement of the Trans Pennine Trail, the trail will be re-opened and the temporary diversion will be removed. Measures outlined above will be adopted to minimise the potential for impacts in relation to disturbance to agricultural activities to occur.

Wogden Foot Sealing End Compound (SEC) – Subject to Planning Application

11.8.4 The construction of the SEC and construction of the permanent access to the SEC will result in the permanent loss of approximately 0.3ha of agricultural land (which includes the planting area beyond the SEC fence line) currently used for grazing.

11.8.5 This land is mapped as Grade 4 and thus would be of **Very Low** sensitivity in relation to agricultural productivity. At the scale of land take proposed, this would be an impact of **Very Low** magnitude resulting in a **Negligible** effect which would be **Not Significant**.

11.8.6 A limited area (approximately 2.7ha) of land within Higher Level Stewardship agreement would be affected. The land use (including the soils supporting this) is a receptor of High sensitivity; with the embedded mitigation in place the impact magnitude would be Very Low giving a **Minor** effect which is **Not Significant**.

Access Point 7 and Northern Access Road – Subject to Planning Application

11.8.7 Access Point 7 will require a new access to be made off the existing highway (Windle Edge) to access the Works Area. This will be a temporary facility and as such with the embedded mitigation detailed above in place the potential for impacts will be limited. Appropriate measures to prevent injury or disturbance to livestock will be put in place. The farming practices would be considered a receptor of **High** sensitivity; as the potential for injury or disturbance is minimal, the magnitude of impact would be **Very Low**, resulting in a **Minor** effect which would be **Not Significant**.

400kV Cable (Undergrounding)

11.8.8 The full width of the Trans Pennine Trail and adjacent grassed areas (varies between 12m to 40m wide in parts) will be required to facilitate construction activities, including a temporary haul road for construction traffic. A diversion of the Trans Pennine Trail will also be required (see below), resulting in additional temporary land take. The impacts would last for the duration of the Cable Corridor installation construction works; this is likely to be approximately 1.5 to 2.5 years.

11.8.9 Whilst the land take required for the Cable Corridor could potentially result in impacts on agricultural land use (including soils, agricultural practices and agri-environment schemes), a receptor of **High** sensitivity, the implementation of the embedded measures would result in impacts of no more than **Very Low** magnitude, resulting in **Minor** effects which are **Not Significant**.

11.8.10 In relation to areas required as temporary construction compounds or lay down areas, the embedded mitigation will minimise the potential for any direct contact between construction activities and livestock and thus it is considered that the magnitude of impact would be **Very Low**, resulting in a **Minor** effect which would be **Not Significant.**

Removal of Existing Infrastructure (VIP subsection)

11.8.11 With the embedded mitigation detailed above in place the potential for impacts from the removal of the overhead line will be limited. Appropriate measures to prevent injury or disturbance to livestock (e.g. stock-proof fencing) will be put in place. The farming practices would be considered a receptor of **High** sensitivity; as the potential for injury or disturbance is minimal, the magnitude of impact would be **Very Low**, resulting in a **Minor** effect which would be **Not Significant**.

Construction of replacement Pylon 4ZO157R

11.8.12 The new pylon will be constructed along with the Sealing End Compound (SEC) resulting in a small loss of agricultural land associated with the footings. Land loss will be minimal and with the embedded mitigation detailed above in place the potential for impacts will be limited. Appropriate measures to prevent injury or disturbance to livestock will be put in place. The farming practices would be considered a receptor of **High** sensitivity; as the potential for injury or disturbance is minimal, the magnitude of impact would be **Very Low**, resulting in a **Minor** effect which would be **Not Significant**.

11.9 Assessment of Impacts during Operation

11.9.1 Impacts during operation would be very limited. Once the Cable Corridor and associated infrastructure have been installed any impacts would be associated with regular maintenance activities and access to link boxes as well as any emergency repairs required to be carried out.

Wogden Foot Sealing End Compound – Subject to Planning Application

11.9.2 With the embedded mitigation in place there would be no impacts during the operational phase.

400kV Cable (Undergrounding)

11.9.3 With the embedded mitigation in place there would be no impacts during the operational phase.

Removal of Existing Infrastructure (VIP subsection)

11.9.4 There would be no impacts during the operational phase. As the footprint of the pylons which will have been removed is minimal, any beneficial effects as a result will be minimal as it is not considered that the presence of the pylons limits activity currently.

11.10 Assessment of Impacts during Decommissioning

Wogden Foot Sealing End Compound – Subject to Planning Application

11.10.1 The lifespan of a SEC is approximately 40-50 years. Unless there is a compelling need for removal of the foundations, these would be removed to approximately 1m deep and subsoil and topsoil reinstated. If the foundations were to be removed, similar methods and access would be required as outlined for installation.

11.10.2 The detailed decommissioning methodology cannot be finalised at this point. However, it is likely that the embedded mitigation outlined above for the construction phase would all still be relevant and would be used to minimise any potential impacts such that no significant impacts would be identified

400kV Cables (undergrounding)

11.10.3 The Cable Corridor has a life expectancy of approximately 40-50 years and National Grid would seek to utilise a maximum life expectancy. When they reach the end of their life or when a connection is no longer required it is proposed that the Cable Corridor would be left *in situ* to avoid disruption associated with their removal along the Trans Pennine Trail and at Wogden Foot.

11.11 Mitigation

11.11.1 For all the potential impacts, the mitigation embedded within the project design would be sufficient to minimise effects.

11.12 Cumulative Effects

11.12.1 As detailed in Chapter 15 (Cumulative), only one potential cumulative development (B&B and campsite) has been identified. As the land associated with the application is not currently in agricultural production, no cumulative impacts on agriculture and land-use receptors are anticipated.

11.12.2 In terms of Intra-Project Effects (impact interactions which arise where more than one impact source from the Proposed Project acts upon the same receptor), none have been identified. Chapter 10 (Geology, Soils and Contaminated Land) deals with potential effects on soils from contaminated land but concludes that residual effects would be negligible and not significant.

11.13 Summary of Residual Effects

During Construction

11.13.1 During construction, there will be Minor effects on agricultural working practices and the permanent loss of approximately 0.3ha of non-BMV agricultural land for the SEC and associated infrastructure. There would also be Minor effects resulting from the removal of existing infrastructure.

11.13.2 In relation to the Trans Pennine Trail diversion, there would be Minor effects during the construction and use of the diversion.

During Operation

11.13.3 Impacts during operation would be very limited and not significant.

During Decommissioning

11.13.4 Impacts during decommissioning would be limited, and less than those identified during construction, given that the Cable Corridor and infrastructure foundations will not be removed.