

7 Land Use

7.1 Introduction

This Chapter provides an assessment of the potential effects of the proposed scheme on existing and future land use based on the guidelines set out in DMRB Volume 11, Section 3, Part 6 (1993 and amendments).

The main effects considered are land-take and the effects on private property and agricultural land. The impact of the scheme upon other land uses including the loss of land used by the community and the effects on development land are also assessed. This assessment has been divided according to land use type for ease of reference. Land use types included are: private property, community land, development land, agricultural land, forestry land and waterways.

7.2 Methods

7.2.1 Baseline Information

Information relating to agricultural land classifications was obtained from the Macaulay Land Use Research Institute (MLURI) map data.

Information relating to farm holdings was initially obtained from SBC mapping of farm boundaries. This information was confirmed by consultation with the individual landowners.

Information relating to development and community land provisions was obtained from the SBC Local Plan (SBC, 2004).

7.2.2 Impact Assessment

As outlined in Chapter 3 (Approach and Methods), impacts were considered in terms of both the site value and the magnitude of impact. The significance of predicted impacts was then determined through a combination of value and magnitude.

Site Value

The site value and sensitivity of each site was determined as detailed in Table 7.1 below by reference to the quality of agricultural land (refer to section 7.3.4), the presence of forestry, private property, community land and development land.

Table 7.1. Definition of Site Value for Land Use.

Value or Sensitivity	Criteria
High	Private property, forestry, community and development land of high value nationally. Agricultural land of Prime Quality, including Grade 1 to Grade 3.1.
Medium	Private property, forestry, community and development land of value regionally/locally. Agricultural land assessed to be Grades 3.2 to 5.3.
Low	Private property, forestry, community and development land of no specific importance. Agricultural land assessed to be Grades 6.1 to 7.

Impact Magnitude

The magnitude of impact was assessed independently of the site value and assigned to one of the categories presented in Table 7.2 based on professional judgment.

Table 7.2. Impact Magnitude Criteria for Land Use.

Criteria	Definition
Major	A major loss or alteration of land use or where there would be complete severance of important parts of a site such as to significantly affect the post-development value of the site.
Moderate	A loss, alteration or severance of land use such that the post-development value of a site would be diminished but to a minor degree.
Slight	Minimal loss, alteration or severance of land use such that there would be a measurable change but this would not significantly affect the use of land from pre-construction conditions.
Negligible	Very little appreciable effect on existing land use or where there are impacts, which are not considered relevant to the existing use of the land and would not affect its value.

Impact Significance

The significance of impact (beneficial and adverse) was determined by a combination of the value of the site and the magnitude of impact as shown in Table 7.3.

Table 7.3. Assessment of Significance Criteria for Land Use.

Site Value	Magnitude of Impact			
	Major	Moderate	Slight	Negligible
High	Major	Major	Moderate	Slight
Medium	Major	Moderate	Slight	Negligible
Low	Moderate	Slight	Negligible	Negligible

Impacts of the proposed scheme upon features of archaeological and ecological importance are assessed in Chapters 6 (Cultural Heritage) and 8 (Ecology and Nature Conservation) respectively.

7.3 Baseline Conditions

7.3.1 Private Property

There are two areas of private, non-agricultural land, within the study area. The first area is a small single residential property known as Riggsyde (0.11ha) adjacent to the A68, marked number 11 and shaded in purple on Figure 7.1. The only access to this property is directly from the A68 which will be affected by the proposed scheme. This property also includes an agricultural field (3.19ha) which is informally let to a local farmer for grazing. The land associated with the house is assessed as being of **medium value** in terms of land use.

The second area, marked pink on Figure 7.1, is known as Henry's Wood, which is a small (0.6ha) area of immature mixed hardwood planting adjacent to the A68 at the north end of the proposed scheme. This was planted in the early nineties on an area of land previously used as a site compound for construction of the existing climbing lane on the A68, and is privately owned by the occupier of Channelkirk Cottage, Oxton. This land is assessed as being of **low value** in terms of land use.

7.3.2 Community Land

No community land has been identified within the study area. The presence of public footpaths / bridleways and cycle routes is discussed in Chapter 11 (Pedestrians et al.).

7.3.3 Development Land

No proposed development land has been identified within the study area.

7.3.4 Agricultural Land

The land capability for agriculture of the area between Soutra South and Carfraemill is shown on Figure 7.2 – Land Capability Plan based on the MLURI Soil Survey of Scotland, Sheet 7 – South East Scotland, Land Capability for Agriculture. The proposed scheme is located within Land Capability for Agriculture Classes 4.1 and 4.2, which are described in Table 7.4 below.

Table 7.4. Land Capability Classifications and Descriptions.

Category	Description
4	Category 4 comprises land capable of producing a narrow range of crops.
4 ₁	Sub-category 4.1 is suited to rotation, which although based on ley grassland includes forage crops and cereals for stock feed. Yields of grass are high, while other crop yields are very variable and usually below the national average.
4 ₂	Sub-category 4.2 is primarily grassland with some limited potential for other crops. Grass yields can be high but difficulties of conservation or utilisation may be severe.

The valley on either side of the road is predominantly used for grazing as would be expected from the land capability classification descriptions above. Field boundaries are defined by post and wire fences and defunct hawthorn or beech hedges. This land is assessed as being of **medium value** in terms of land use.

Individual farm holdings are shown on Figure 7.1. The main farm holdings are Headshaw, Kirktonhill, Carfrae, Netherhowden and Justicehall (areas numbered 1, 2, 3, 4 & 14 and 5).

7.3.5 Forestry Land

Although no commercial forestry land has been identified within the immediate study area, there are two areas of forestry which lie to the southwest of Hartside and Threburnford. The preferred route for extraction from these forests will be via the C83 to the A68.

7.3.6 Waterways

There are no navigable, disused or abandoned waterways within the study area.

7.4 Assessment of Impacts

7.4.1 Potential Impacts

Potential impacts may result from the direct or indirect effects on existing land use and can include:

- Demolition of or damage to private property;
- Loss, damage or disturbance of agricultural land, areas of commercial forestry, land used by the community or land identified for future development; and
- Loss or severance of existing access arrangements.

This chapter relates to permanent impacts upon land use. There will be other temporary effects on identified features during construction and these are discussed within Chapter 15 (Disruption due to Construction).

Potential Impacts have been identified with respect to the following:

- Private property – closure of existing access and formation of new side road and access road to Riggsyde; and
- Agricultural land – loss of grade 4 land due to land take; disruption and severance of stock movements.

7.4.2 Assessment of Impact Significance

Private Property

No buildings are to be demolished as part of the proposed scheme.

The majority of the proposed land take is within agricultural areas as described below.

The existing access to the only private property within the scheme boundary, Riggsyde, will be stopped up as part of the proposed scheme. An access to the property, which will also include a turning area, will be formed from the proposed new side road linking the existing C84 and C83 side roads (See Figures 2.1b and 2.1c). There will be some loss of land associated with the new side road, access road and turning area and the new access will split the existing agricultural field into two separate fields. There will also be a loss of land associated with the online widening of the A68. In total the area of land associated with the property will be reduced by 1.15ha and thus fall from 3.19ha to 2.04ha, although the land lost to the property is grazing land and not garden ground. The impact magnitude of this loss of land is considered to be moderate adverse. Combining this with the site's medium sensitivity gives rise to a **moderate adverse** impact significance.

There will be a loss of land at Henry's Wood, which is the only other area of private, non-agricultural land, within the study area. The total area of Henry's Wood will be reduced from 0.6ha to 0.4ha. The impact magnitude of this loss of land is considered to be moderate adverse. Combining this with the site's low sensitivity gives rise to a **slight adverse** impact significance.

Community Land

Based on current information, there will be no impact on community land as part of the proposed scheme.

Development Land

There will be no impact on development land as part of the proposed scheme.

Agricultural Land

Implementation of the scheme will result in the loss of approximately 5.6ha of agricultural land classified as grade 4₁ and 4₂ (medium value). In comparison to the amount of surrounding medium quality agricultural land, this is a relatively small area of land, primarily in close proximity to the existing A68. The magnitude of the impact of the loss of agricultural land is considered to be no more than slight and when combined with the medium value of the land the impact significance is assessed as being **slight adverse**.

In addition to the land lost at Riggsyde, the proposal to construct the new side road

between the existing C84 and C83 side roads will result in the loss of agricultural land forming part of Justicehall, Carfrae and Kirktonhill Farms. This land amounts to approximately 1.0ha, which is included in the 5.6ha detailed above. It is considered that the impact magnitude of this loss of agricultural land is slight adverse and combined with the medium value of the land this gives rise to a **slight adverse** impact significance.

Carfrae Farm (marked light green on Figure 7.1) and Netherhowden Farm (marked turquoise and light orange on Figure 7.1) have land holdings on both sides of the A68, within the scheme limits.

Carfrae Farm is located mainly on the east side of the A68 but has a single field on the west side. The area of this field is approximately 7.8ha, which is a small percentage of the total area of the farm. At present this field is in set-a-side but it has in the past been used for grazing sheep. Thus, stock movements across the trunk road to this field using field access gates A2 and A3 are on occasion required. The farmer considers that this is becoming more untenable with increasing traffic volumes and he tends to move stock very early in the morning. There is therefore a degree of severance at present. It is proposed as part of the scheme to stop up all field accesses onto the A68. The field will therefore be further severed from the main farm. However, access to this field will be provided from the proposed new side road. It is considered that the impact magnitude of this loss of direct access is slight adverse and combined with the medium value of the land this gives rise to a **slight adverse** impact significance.

The proposed realignment of the D47/5 and the widening of the mainline will result in Carfrae Farm losing land to the east of the existing D47/5. This land is currently used for grazing sheep and the field is approximately 8.66ha. After completion of the works the area will be 7.50ha, this is a 13.3% reduction and as such the magnitude of the impact can be considered as slight. The realignment of the D47/5 will also result in the severance of access from the field to Headshaw Burn. This will prevent the farmer from allowing livestock access to a water supply. The small pocket of land between the realigned D47/5 and Headshaw Burn is unusable for the farmer due to its size. Thus it is proposed to buy this land for landscape mitigation measures. Combining the slight impact magnitude with the site value of medium, results in an impact of **slight adverse** significance.

Netherhowden Farm is located mainly on the west side of the A68. It has however a number of fields on the east side. These fields are used for grazing sheep and cattle. Stock is moved across the trunk road around 10 times a year between field access gates A10 and A11 (see Figure 7.1). These gates are located within the existing three lane section of road associated with Carfraemill Roundabout and as such this operation can only be carried out in the early morning when traffic flows are light. There is therefore a degree of severance at present. As part of the scheme it is proposed that all field accesses onto the A68 will be stopped up. Due to the surrounding topography it is not practicable to provide an underpass but it is also not feasible to consider

purchasing the land to the east of the A68 because of the large area involved. Due to the higher usage of the direct access across the A68 in comparison to Carfrae Farm it is considered that the impact magnitude of its loss is moderate adverse. Combining this with the medium value of the land this gives rise to a **moderate adverse** impact significance.

Netherhowden Farm will lose agricultural land on either side of A68. However due to the proposed location of the drainage pond, the field located to the southeast of the C84 junction, which is currently used for grazing sheep, will experience the largest impact. With the erection of temporary fencing at different times of the year, this field varies in size from approximately 1.7ha, up to around 8ha. After completion of the works the area will be reduced by 0.9ha, and as such the magnitude of the impact can be considered as moderate. Combining the moderate impact magnitude with the site value of medium, results in an impact of **moderate adverse** significance.

Forestry Land

The scheme will have no impact on forestry land.

Waterways

There will be no impact on waterways as part of the proposed scheme.

7.5 Mitigation

Mitigation measures to reduce the impacts of the proposed scheme upon the various land uses of the study area include the following:

- Minimisation of land-take where possible.
- Re-use of excavated agricultural soils in landscape mitigation.
- Restoration of disturbed areas to original use wherever possible.
- Compensation for the loss of land and the relocation of existing access arrangements.

Other measures which may be provided as part of the accommodation works for the various landowners include: (please note that the following measures are subject to the necessary agreements and approvals being obtained from the affected landowners/occupiers)

- Provision of access tracks for Netherhowden Farm to provide access to fields previously accessed directly off the A68.
- Provision of water troughs in the fields to the east of the existing D47/5 for Carfrae Farm, in the fields forming part of Riggsyde and in the field southeast of the existing C83 junction for Kirktonhill Farm (if required).
- Provision of stock holding pens to facilitate the movement of stock across the A68 for Carfrae and Netherhowden Farms.

7.6 Residual Impacts

Whilst the design of the proposed scheme options will minimise agricultural land take wherever possible, a degree of adverse impact remains unavoidable. The proposed alternative access arrangements will provide safer access to fields. Table 7.5 below presents the residual impacts and enables comparison of the anticipated impacts with and without mitigation.

Table 7.5. Land Use Impacts With and Without Mitigation.

Land Use	Impact Without Mitigation	Impact With Mitigation (Residual Impact)
Private Property		
Land Take - Riggsyde	Moderate adverse	Slight adverse
Land Take - Henry's Wood	Slight adverse	Slight adverse
Agricultural Land		
Land Take - Online widening	Slight adverse	Slight adverse
Land Take - New Side Road	Slight adverse	Slight adverse
<i>Carfrae Farm</i>		
Stock movement	Slight adverse	Negligible adverse
Land Take - D47/5 Realignment	Slight adverse	Slight adverse
<i>Netherhowden Farm</i>		
Access Arrangements/ Stock movement	Moderate adverse	Slight adverse
Land Take - SUDS Pond	Moderate adverse	Slight adverse