

7 Land Use

7.1 Introduction

The purpose of this chapter is to identify potential impacts arising from the scheme on land use, and to assess the significance of these impacts. The scheme may give rise to impacts through the loss of land for a particular use, known as land take. This can be of a temporary or permanent nature.

It should be noted that Chapter 10 – Pedestrians, Cyclists, Equestrians and Community Effects provides an assessment of the impacts upon all users of the A82 and Chapter 12 – Disruption due to Construction includes assessment of the temporary construction impacts associated with the scheme.

7.2 Methodology

The methodology was undertaken with reference to the DMRB (Vol. 11), Section 3, Part 6 (Land–Use). A Stage 3 level of assessment is required for inclusion within an Environmental Statement. The methodology used to assess the effects of the scheme on land-use is described in Table 7.1.

Table 7.1 - Land-use Assessment Methodology

METHODOLOGY STAGE	PROCESS
Consultation	Consultation was required to assess the Loch Lomond and Trossachs National Park Authority's (i.e. the planning authority) view on any potential effects of the scheme on current and future land-use designations. In addition consultation was undertaken with local businesses and community facilities – see Chapter 3 –Consultation.
Collection of baseline data	A desktop study was the initial method of data collection. Documents referred to include the applicable Development Plan for assessing current and future land-use designations, with a number of site visits undertaken in 2010 to evaluate the present land-use throughout the Scheme. In addition the 1:25,000 Ordnance Survey (OS) Map, Loch Lomond North (Explorer 364) was used for baseline data collection.
Assessment	The assessment was undertaken for impacts during both the construction and operation of the scheme The assessment also determined the significance of the effects on land use within the study area
Mitigation	Mitigation measures are proposed to minimise the land use impacts of the Scheme.

Using the guidance from DMRB Vol.11, the magnitude of the impact and sensitivity of the receptor can be described as shown below in Table 7.2 and Table 7.3 respectively.

Table 7.2 - Magnitude of impact

MAGNITUDE	CRITERIA
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Severe	The scheme will result in the permanent land-take of existing beneficial land-uses, the severance of beneficial uses or prevent the development of designated Local Plan sites/proposals.
Moderate	The scheme will result in the permanent land-take of existing land-uses of a less beneficial nature and will impact upon future development of designated Local Plan sites/proposals.
Slight	The scheme will require temporary land-take, or cause temporary severance issues.
Negligible	Barely perceptible changes.

Table 7.3 - Sensitivity of land use receptors

SENSITIVITY	CRITERIA
High	Existing beneficial land-uses.
Medium	Designated Local Plan sites/proposals with developer interest.
Low	Existing land-uses of a less beneficial nature.
Negligible	Designated Local Plan sites/proposals with no developer interest.

The DMRB (Vol. 11) does not describe how the significance of impact should be scaled with regard to land-use. Therefore, Table 7.4 outlines a suggested means of assessing magnitude of effect and the sensitivity of the receptor, with those shaded in grey considered to be the main or significant effects.

Table 7.4 - Significance of Impact Effects (Effects falling within shaded boxes are considered to be significant)

MAGNITUDE OF EFFECT	SENSITIVITY OF RECEPTOR			
	HIGH	MEDIUM	LOW	NEGLIGIBLE
SEVERE	Substantial	Moderate	Minor	Negligible
MODERATE	Moderate	Minor	Minor	Negligible
SLIGHT	Minor	Minor	Negligible	Negligible
NEGLIGIBLE	Negligible	Negligible	Negligible	Negligible

7.2.1 Study Area

It was agreed with the Loch Lomond and Trossachs National Park Authority that the land use assessment should assess land uses within 2km of the Scheme. This covers the area from Arvorlich to just south of Ardlui. This is the study area that is referred to throughout this chapter.

7.3 Information Sources

The quality of agricultural land affected was ascertained by investigating the Macauley Institute Soil Survey for Land Capability Mapping – Sheet 4, Western Scotland (1:250000) and Sheet 56, Loch Lomond (1:50000). Other land uses were identified by site visits and desktop studies. The 1:25,000 Ordnance Survey (OS) Map, Loch Lomond North (Explorer 364) was also used for baseline data collection. The relevant development plans for the area were reviewed including the Argyll and Bute Structure Plan: Developing our Future (2002), the Adopted Dumbarton Wide

Local Plan – March 1999 and the Loch Lomond and the Trossachs National Park Finalised Draft Local Plan (February 2010).

In addition consultations were held with relevant landowners and the Loch Lomond and Trossachs National Park Authority and the outcome of these are described in more detail in the next section.

7.4 Consultations

Two rounds of consultation have been undertaken as part of the assessment process, with the first requesting information from statutory consultation bodies regarding comments for the Stage 2 Scheme Assessment Report (S2SAR), and the second round asking for any comments on the Scoping Report relating to the proposed Scheme. The Loch Lomond and Trossachs National Park Authority (LLTNPA) were included as part of this consultation.

The second round of consultation, on the Scoping Report, included both statutory and non-statutory bodies. The Scottish Government were consulted and responded that they did not hold any relevant information for the preparation of the ES. The only comment received relating to land use was that from LLTNPA who stated;

“It is likely that small areas of land that are currently used for grazing may be lost or may become unviable with the re-alignment of the road. The ES should highlight these areas and note what impact this will have on the relevant rural businesses. It should note the indirect landscape changes this will create, the potential loss of a mosaic of pasture and woodland and the development of scrub woodland and the impacts on views into and out of the A82 corridor. The cumulative impact of the loss of potential grazing or in by land should be noted as this type of land is relatively scarce on the glen sides. The ES should identify those areas temporarily lost during the construction phase and those permanently lost to the road re-alignment.”

This response from LLTNPA was followed up by telephone conversation with the landowner adjacent to the scheme (Stuckendroin farm) in March 2010 who advised that the land is not used for grazing and is considered to be open scrub land with zero value in terms of agricultural use. However, the LLTNPA expressed concern that removing grazing on this land will result in the development of scrub woodland that could impact on views into and out of the A82. The restoration planting proposals for the scheme are presented in Chapter 6 - Landscape and Visual Assessment and there are no proposals for any tree planting on this area of land.

It was agreed in a meeting with LLTNPA on 18 March 2010 that any land lost as a result of the scheme will not be considered valuable grazing land but as it has the potential to be used for grazing in the future it shall be assessed here as ‘rough grazing land’.

A more detailed description of the consultation process, and the responses received can be found in Chapter 3 – Consultation.

7.5 Baseline

The scheme study area is bounded on the east and north east by Loch Lomond and by the main Glasgow to Forth William railway line to the south west. The main land use types within the scheme study area are native woodland interspersed with areas of open space with the potential for rough grazing. The existing baseline situation is shown in Figure 7.1 – Existing Land-use. The land use types are described in more detail in the following sections:

7.5.1.1 Residential, Commercial and Community Property

There are no properties within 200 m of the scheme; the closest properties are at Stuckendroin over 800m to the north and at Ardvorlich over 1400m to the south. There are a small number of further residential properties within the study area further north of Stuckendroin and further south of Ardvorlich.

There is no commercial property within 200m of the Scheme, and the only commercial property within the study area is that of Stuckendroin farm which is considered a mix of residential and commercial / agricultural.

Ardvorlich House Bed and Breakfast is also within the study area to the south of the scheme in Ardvorlich.

There are no community properties within the study area.

There are a range of other commercial properties along the A82 from Tarbet to Crianlarich including a number of Bed and Breakfast's, Hotels and retail businesses. In addition there are also community properties such as the Loch Lomond Outdoor Education Centre which is located just north of Ardlui.

7.5.1.2 Land Used by the Community

There is no land used by the community or public open space within the study area

7.5.1.3 Agricultural

There is a small amount of rough grazing land adjacent to the A82 surrounding the site of Pulpit Rock, to the north of the scheme. It should be noted that the scoping report stated that this area of open land was used for cattle grazing; this has now been clarified by the land owner (Stuckendroin Farm), who stated that the land is currently not used for grazing (see Section 7.4). However, even though the land is not currently used for grazing it has the potential to be utilised for this use in future and is therefore still considered as rough grazing land for the purposes of this assessment.

There is an existing sheep creep underneath the Glasgow to Fort William Railway line which provides a link through to other areas of land in agricultural use beyond the railway line.

Agricultural rough grazing land surrounds the residential properties at Stuckendroin to the north of the Scheme.

Land capability for agriculture was sourced from the Macaulay Land Use Research Institute's (MLURI) maps which indicate the capability of land to grow certain types of crops and grasses. The Macaulay institute devised an Agricultural Land Classification (ALC) which classifies land on a scale from 1 to 7 with land classed as 1 being land suited to arable cropping through to land suited only to improved grassland and rough grazings. The soils in the immediate study area fall into Grade 6(1), which is defined as land capable of use only for rough grazing, and falls outside the "best and most versatile (BMV) land" category, which is considered most flexible, productive and most likely to deliver future crops. Furthermore, the majority of land immediately surrounding the A82 at Pulpit Rock is generally unsuitable for agricultural purposes due to the steep contours, rock outcrops, and existing trees and mature vegetation. Within the wider study area there are also areas (northwards towards Ardlui and also south towards Arvorlich) which fall into category 5 (3) which is defined as land capable of use as improved grassland.

The field and land boundaries within the scheme study area are generally wire and post fencing with some boundaries formed by woodlands, and drainage watercourses.

7.5.1.4 Forestry / Woodland

There are areas of semi-natural broad-leaved woodland, which vary in character throughout the study area. Land use to the south of the scheme is mainly woodland. Around the scheme there are areas of woodland on either side of the A82 and particularly along the loch foreshore.

7.5.1.5 Loch / Loch Foreshore

The A82 is bounded on the east and north east by Loch Lomond and the loch foreshore is defined as predominately woodland.

7.5.1.6 Transportation Land

Apart from the A82, the Glasgow to Fortwilliam railway runs to the south west of the scheme.

7.5.1.7 Development Land and Planning Applications

The LLTNPA provided information relating to planning applications within the study area, however, there were no valid applications approved or pending within the last 5 years. There are a number of applications submitted within the last 5 years within Ardlui which is just outside of the study area, however all were householder applications and Ardlui is also considered to be a different land use context to the study area given its built up character.

The Loch Lomond and Trossachs Finalised Draft Local Plan (February 2010) does not designate any development proposals within the study area. The nearest designations are within Tarbet to the south with land allocated for open space and recreational tourism uses. There are also no development designations for the study area contained in either the Argyll or Bute Structure Plan: Developing our Future (2002) or the Adopted Dumbarton Wide Local Plan – March 1999.

7.6 Assessment of Environmental Effects

Environmental effects on land use will be experienced during both the construction and operational phase of the development, with impacts being both permanent and temporary. Likely impacts are:

- Temporary land take for construction works;
- Permanent land take for road improvements;
- Impacts on future land use designations.

No properties will be demolished as a result of the scheme and, no land used by the community will be lost and there are no anticipated effects on Development Land or land currently with valid planning permissions during either construction or operation. However, land take requirements include a small area of open grazing land to the north-west end of the scheme and some loss of woodland on either side of the existing A82 and from the loch foreshore.

Construction and operational effects are highlighted below, with a subsequent section describing the significance of these environmental effects.

7.6.1 Construction Effects

There would be no permanent severance to properties or fields, although there may be temporary interference during construction with access to land via the sheep creep under the railway line during construction, and to land around Pulpit Rock itself due to Health and Safety reasons.

The scheme would involve a land take at the northern extent of the Scheme to facilitate the widening of the current road alignment. This will include part of the area of rough grazing between the A82 and Pulpit Rock and will alter the field boundary adjacent to the A82 in this area. In addition land take will be required in this area to allow the formation of the dry swale as part of the drainage proposals and to extend the existing access track to allow maintenance vehicles to access the swale. It is not expected that the land take in this area will impact on farm viability in the future and the impact on this agricultural land is assessed as minor. There would be a direct impact on the Loch as a result of inserting the piles required to support the viaduct into the bed of the Loch and during construction the area required within the loch will be greater than during operation to allow the construction of the viaduct. It will also be necessary to remove areas of woodland along the Loch foreshore and the opposite site of the A82 to facilitate construction activities and the scheme improvements.

In total during construction there will be a requirement for approximately 16500m² of land take to accommodate the works. This will consist of:

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|--------------------------|---------------------|
| • Woodland | 5700 m ² |
| • Rough Grazing Land | 2200 m ² |
| • Loch Lomond/ Foreshore | 9800 m ² |

It must be stated that the above figures represent the land required to facilitate construction and as such not all of this land will require clearance and may be restored to full use after the works. The amount of permanent land take is discussed in section 7.6.2.

Additional temporary landtake will be required for the construction process, as a site(s) will be required for the contractor's compound. This will ideally be adjacent to or in close proximity to the proposed improvements and have good access from the existing road network. The precise location of the contractor's compound has still to be determined.

Apart from the minor direct impact on agricultural land there will be no direct impact on any residential, commercial or community properties. The main impact during the construction period will be on users of the A82 accessing and this indirect temporary impact is address in Chapter 10 – Pedestrians, Cyclists, Equestrians and Community Effects.

Temporary severance will occur during certain times of the construction period. More details regarding access impacts and effects are reported in Chapter 10 – Pedestrians, Cyclists, Equestrians and Community Effects and Chapter 12 - Disruption due to Construction.

7.6.2 Operational Effects

The operational effects on land use within the study area relate to the permanent land take that will be required for the development of the Scheme. This will include land take of areas of woodland, rough grazing land and a small amount of land take within the loch for the pile foundations of the viaduct structure. It is expected that a lot of land take required for the construction process will be returned to its existing use once the scheme is constructed. It is not expected that the area of rough grazing land required for the operation of the scheme will result in any farm viability issues for the landowner. It should be noted that both the dry swale and the access track will both be planted with grasscrete and therefore will blend with the existing vegetation. There will be no areas of hard standing and the grasscrete coverage will not prevent future grazing of the land. The amount of land take which would be required is estimated at around 3300 m² consisting of approximately:

- Woodland 2200 m²
- Rough Grazing Land 1000 m²
- Loch Lomond/ Foreshore 700 m²

7.6.3 Significance of Effects

Table 7.5 below assesses the significance of land take impacts for both the construction and operational phases. Where permanent land take is required this is addressed in the Operation section of the table as it is a long term impact.

Table 7.5 - Significance of Environmental Effects

Feature	Potential Impact	Magnitude of Impact	Sensitivity of Receptor	Significance of Impact (No Mitigation)	Mitigation Measure	Significance of Impact (Mitigation)
CONSTRUCTION						
Sheep Creep	Potential temporary severance	Slight	Low	Negligible	Maintain access where possible	Negligible
Works Compound	Temporary land take	Moderate	High	Moderate	In preparing detailed design land take for construction compounds should be minimised as far as possible. Consult with LLTNPA and relevant landowners to establish preferred compound location.	Moderate
OPERATION						
Agriculture	Permanent land take of low value agricultural rough grazing land.	Slight	Medium	Minor	In preparing detailed design land take should be minimised as far as possible	Minor
Forestry / Woodland	Permanent land take of small areas of semi natural woodland	Moderate	Medium	Minor	Mitigation planting as proposed in Chapter 6 Landscape and Visual Effects. In preparing detailed design land take should be minimised as far as possible	Minor
Loch / Loch Foreshore	n/a	n/a	n/a	n/a	n/a	n/a
Transportation Land	n/a	n/a	n/a	n/a	n/a	n/a
Residential	n/a	n/a	n/a	n/a	n/a	n/a
Land used by	n/a	n/a	n/a	n/a	n/a	n/a

Feature	Potential Impact	Magnitude of Impact	Sensitivity of Receptor	Significance of Impact (No Mitigation)	Mitigation Measure	Significance of Impact (Mitigation)
the community						
Development Land and Planning Applications	n/a	n/a	n/a	n/a	n/a	n/a

7.7 Mitigation Summary

In preparing the detailed design for the scheme land take for woodland and rough grazing areas should be minimised as far as possible. When determining the area for the site compounds the contractor should seek to minimise the land take required as far as possible. In addition when determining the area for the construction compounds the contractor should liaise with Loch Lomond and Trossachs National Park Authority and any landowners likely to be affected.

Measures will be taken to ensure that access to the enclosed rough grazing area (in which the Pulpit Rock is situated) and the Loch are maintained whenever possible, otherwise alternative access arrangements will be provided if possible.

Where land-take will occur, during both construction and operation, compensation will be required for the landowner, dependant on the type and scale of land use lost.

Specific mitigation measures for temporary and permanent land take are described above in Table 7.5.

7.8 Residual Impacts

The residual land use impacts associated with the scheme includes the loss of a small area of rough grazing land and the loss of areas of woodland on either side of the existing A82.

7.9 Summary

The impacts on land-use as a result of the scheme will be minor, while the construction will necessitate the land take of some areas of agricultural land; this has limited agricultural value due to its topography and soil quality. Furthermore, this land also has minimal grazing potential, and the operational impacts of the grasscreted dry swale and access track will not impact on future farm viability. Small areas of semi-natural broad-leaved woodland will be required but mitigation planting should ensure the impact of this land take is kept to a minimum.