

Welsh Government

**A40 Llanddewi Velfrey to Penblewin  
Improvements**

Environmental Statement Chapter 12:

Community and Private Assets: Agriculture

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## 12 Effects on Agricultural Land

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### 12.1 Introduction

12.1.1 This chapter addresses impacts in relation to the effects on agricultural land and businesses associated with the Scheme. It was undertaken in accordance with the methodology within DMRB Volume 11, section 3, Part 6 and follows guidelines outlined in IAN 125/09(W).

### 12.2 Legislation and Policy Context

12.2.1 In relation to agricultural land, national planning policy on the development of land is set out in Planning Policy Wales Edition 10 (PPWE10) (December 2018)<sup>1</sup> [12.1] and the accompanying Technical Advice Note 6 (TAN 6, 2010)<sup>2</sup> [12.2].

12.2.2 Agricultural land is graded according to its long-term physical limitations for agricultural use. Land is divided into grades 1 to 5, with Grade 3 further subdivided into two Subgrades 3a and 3b. PPWE10 advises in paragraph 3.54 that agricultural land of Grades 1, 2 and 3a of the Agricultural Land Classification (ALC)<sup>3</sup> [12.3] is the ‘best and most versatile’ (BMV) and should be conserved as a finite resource for the future. In development management decisions, considerable weight should be given to protecting such land from development, because of its special importance. Such land should only be developed if there is an overriding need for the development and either lower grade agricultural land is unavailable or has a recognised environmental value that outweighs the agricultural considerations.

12.2.3 TAN 6 advises on factors to consider when assessing the effects of development on agricultural land (section 6.2) including:

- a) The effects on farm size and structure;
- b) The effects on the efficient use of buildings, fixed equipment and capital investment; and
- c) The effects on drainage, both surface water and land drainage systems.

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<sup>1</sup> Planning Policy Wales (Edition 10, December 2018)

<sup>2</sup> Technical Advice Note 6 “Planning for Sustainable Rural Communities” (July 2010)

<sup>3</sup> Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land, MAFF (1988)

- 12.2.4 The Pembrokeshire County Council Local Development Plan (2013)<sup>4</sup> [12.4] notes at 3.16 that “*agriculture, tourism, energy and public services dominate the current economy of Pembrokeshire*”. There is no particular policy governing agricultural land or businesses.

## 12.3 Assessment Methodology

- 12.3.1 The assessment was carried out in accordance with the methodology within the DMRB Volume 11, section 3, Part 6. As per the DMRB and national and local policy, the agricultural assessment covers loss of land and soil resources, the type of land management and farming practices currently operated and the potential impacts on these. The assessment covers matters such as severance, disturbance and disruption. The assessment covers direct and indirect, secondary, short, medium and long-term, permanent and temporary, beneficial and adverse impacts of the Scheme.

- 12.3.2 The assessment considers the severity of the impact for two different scenarios:

- a) Where no mitigation is provided;
- b) Where mitigation is provided. Mitigation is built into the Scheme, and accordingly this represents the assessment of the proposed Scheme.

### Data collection and sources of information used

- 12.3.3 In terms of land use and ownership, a combination of desk-based research, questionnaire surveys and meetings with affected parties was undertaken. This includes:

- a) Searches of Land Registry information;
- b) Issuing of questionnaires to affected parties;
- c) Meetings held with affected parties.

- 12.3.4 From this work, a detailed knowledge of land ownership interests affected by the Scheme was collated.

- 12.3.5 In relation to the effects on agricultural land and businesses, the assessment work included:

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<sup>4</sup> Local Development Plan: Planning Pembrokeshire’s Future, PCC (2013)

- a) A study of the available published soil, geology and climate data, land quality records and topographic information;
- b) A study of the Predictive Agricultural Land Classification Map (2017)<sup>5</sup> [12.5] and the Predictive ALC Map Guidance Note (November 2017);
- c) A study of the engineering layout plans and land referencing information;
- d) Interviews with affected farmers, landowners and occupiers mostly during August 2017.

### **Assessment criteria for agricultural land and business**

12.3.6 The process of EIA requires various thresholds to be set to determine the levels of significance of impact. There are no universally recognised definitions of what constitutes “significant”; this will differ according to the perspective of the stakeholder(s). However, for the purposes of this technical assessment, and to assist in its interpretation, common assessment criteria and terminology were developed for the analysis of predicted impacts.

12.3.7 The assessment criteria for impacts on agricultural soil resources and businesses, as set out below, were agreed previously with the Regional Planning Advisor from the Technical Services Department of the Welsh Government. The criteria were based on the formulaic approach proposed in the revised DMRB guidance HA 205/08.

### **Receptors: agricultural land resources**

12.3.8 Agricultural land, particularly the best and most versatile quality (Grades 1, 2 and 3a), is recognised as being a finite resource of national importance. There are no defined thresholds for assessing the magnitude of the impact, so thresholds were agreed in consultation with the Welsh Government (as set out in the Environmental Scoping Report, March 2017).

12.3.9 Therefore, in respect of effects on agricultural land, land of the best and most versatile agricultural quality is a resource of national importance and the thresholds reflect both the quantum and quality of the agricultural land affected.

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<sup>5</sup> Predictive Agricultural Land Classification (ALC) Map and Guidance Note, Natural Resources Wales (November 2017)

## Receptors: farm businesses

- 12.3.10 Farm and land-based rural businesses, whether run by owner-occupiers, tenants, licensees or contractors, and whether affected directly or indirectly, are a key receptor. The assessment considered the physical effects, including land loss, severance, the potential effects on the movement of livestock, field accesses, drainage and the use of farm buildings. It also considered, taking a long-term view, the potential effects on the medium to long-term ability for the remaining holding to continue in a beneficial agricultural use.
- 12.3.11 The effect on occupying and neighbouring land-based businesses was a more transient impact to assess. Such businesses vary from year to year, and even from day to day, affected by many external influences such as management wishes and decisions, market prices, illnesses and diseases, the weather and monetary exchange rates.
- 12.3.12 Whilst the quality and quantity of agricultural land does influence the farming and other land management practices operated over it, the effect on those businesses is assessed as being of local importance, due to their transient nature. That distinction is not intended to denigrate the important role of land managers in providing food for the nation and other opportunities and services.

## Assessment criteria

- 12.3.13 The assessment of impact on land resources was carried out in three stages: first the magnitude, secondly the importance/sensitivity of the receptor, and thirdly the significance of impact. The magnitude of impacts was determined against the criteria set out in Table 12.1.
- 12.3.14 The methodology for determining the sensitivity of the receptors is set out in Table 12.2. There are four identified receptors. Best and most versatile agricultural land is considered to be a receptor of high sensitivity. Land of poorer quality and full-time farm businesses are considered to be of medium sensitivity. This reflects the transient nature of farm businesses and the lesser weight given to protecting poorer quality agricultural land. Part-time farm businesses are considered to be of low sensitivity.
- 12.3.15 A combination of the magnitude and sensitivity allows an assessment of the significance of the impact, as defined in Table 12.3.

Table 12.1 Agricultural Magnitude of Impact Assessment Criteria

Impact Magnitude	Definition	
	Impact on Soils	Impact on Local Agriculture
<b>Major</b>	The proposed development would directly lead to the loss of over 20ha (hectares) of “best and most versatile agricultural land” (Grades 1 / 2 / 3a).	The impact of the development would render a full-time agricultural business non-viable.
<b>Moderate</b>	The proposed development would directly lead to the loss of between 5 and 20ha of “best and most versatile agricultural land” (Grades 1 / 2 / 3a).	The impact of the development would require significant changes in the day to day management of a full-time agricultural business.
<b>Slight</b>	The proposed development would directly lead to the loss of less than 5ha of “best and most versatile agricultural land” (Grades 1 / 2 / 3a) or the loss of any quantity of non BMV land (Grades 3b, 4 or 5).	Land take would require only minor changes in the day to day management / structure of a full-time agricultural business or land take would result in the loss or a significant impact on a part-time business.
<b>Negligible</b>	No direct impact upon agricultural land.	Land take would require only negligible changes to an agricultural business.

Table 12.2 Agricultural Receptor Sensitivity

Sensitivity	Receptor
High	Land resources are matters of potentially national importance, as identified in PPWE10 <sup>6</sup> . The BMV agricultural land (Grades 1, 2 and 3a) is of national importance. The effect on land resources is a combination of the quantum and quality of agricultural land affected, relative to both the national resource and the relative availability of land of that quality locally. Land resources of BMV quality should therefore be classified as being of high environmental value (sensitivity).
Medium	Land that is of poorer quality, Grades 3b, 4 and 5, is of lower sensitivity and is afforded no special protection in PPWE10. It is nevertheless a finite resource of local importance and so is regarded as of moderate sensitivity. Full-time farm businesses are of medium sensitivity, as the way that farms are operated will vary over time according to ownership, security of tenure and local and international economic factors. Farm businesses are tolerant of some change without detriment to their character.
Low	Part-time farm businesses are of low sensitivity. The way that farms are operated will vary over time according to ownership, security of tenure and local and international economic factors. Farm businesses are tolerant of some change without detriment to their character.

<sup>6</sup> Planning Policy Wales (Edition 10, December 2018)

Table 12.3 Agricultural Significance of Impact

Magnitude	Sensitivity		
	High	Medium	Low
Major	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial
Moderate	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Minor Adverse / Beneficial
Slight	Minor Adverse / Beneficial	Minor Adverse / Beneficial	Minor Adverse / Beneficial
Negligible	Negligible	Negligible	Negligible

### Limitations and assumptions

12.3.16 Farm management can change in short periods of time, so whilst the data used was correct at the time of survey (summer 2017), this may change with time. It was assumed that the general farming practices assessed would continue, and as this assessment takes a long-term view such changes in farming practice would not generally affect the conclusions set out below.

## 12.4 Baseline conditions

12.4.1 In relation to agriculture, baseline conditions can be divided into two categories:

- a) Inherent conditions such as soils and land quality, which are not influenced to any significant degree by man;
- b) Land-use conditions, such as farming occupation and management, which are transient.

### Inherent conditions

12.4.2 **Agricultural Land Quality.** In November 2017, the Welsh Government produced Predictive Agricultural Land Classification Maps for Wales. These replaced the “provisional” ALC maps from the 1970s.

12.4.3 As advised in the Guidance Note (November 2017), the map is intended to assist the user in targeting survey work to the most appropriate locations. It is noted that planning applications are expected to be supported by survey evidence “*where BMV agricultural land is an issue for consideration*”.

- 12.4.4 The flowchart at section 4 of the Guidance Note sets out the decision process. Where the predictive map shows that the site does not contain predicted BMV grades, the flowchart directs that survey is not required. The Predictive ALC Map shows the great majority of the area around Llanddewi Velfrey and affected by the Scheme to fall within Subgrade 3b. There are a few small areas shown as Grade 4. See Figure 12.1.
- 12.4.5 The land quality affected by the Scheme is typical of the land quality of the wider area, as shown on Figure 12.1. In Figure 12.2, an even wider area is considered and shows that most of the land in the wider area is Subgrade 3b and Grade 4. Some Subgrade 3a and Grade 2 land is shown to the north, but most of the land in the wider area is of similar quality to that affected by the Scheme.
- 12.4.6 Based on the Guidance Note for the Predictive ALC Map, no field survey for this particular route was required.
- 12.4.7 The majority of the land along the route of the Scheme is farmed and forms part of privately owned or occupied farm businesses. Seven farm and land-based rural units are directly affected. These comprise a mixture of part-time and full-time farm units and mostly beef and dairy units with little arable land, or blocks of land let to others to farm. Table 12.4 provides a summary of the affected farms.

Table 12.4 Summary of the main farm units affected

Plot Ref	Farm Unit	Description
4 and 6	Henllan Estate	The Henllan Estate comprises a substantial block of land split between a number of family members. Most of the land is let out on various mostly short-term tenancies. The parcels of land bordering the A40, labelled unit 6, extend to approximately 72 ha, and unit 4 is considerably larger. There are different ownerships within these areas. At the centre of the main part of the estate, which lies to the west of Llanddewi Velfrey, is a substantial dairy unit based at Henllan Farm. This unit occupies land on the south side of the A40 and some land on the northern side. Other land on the northern side, and Penblewin Farm, is let to a large dairy farm operating from Longford Farm. The eastern part of the estate, to the north-east of Llanddewi Velfrey, is let to Pen-troydin-fawr Farm (unit ref 67).
13 and 14	Pen-ca'rmaenau	This farm is let out to a substantial dairy farm operating from Longford Farm. The parcels labelled 13 and 14 extend to over 90 ha.
68/2	Parc-y-delyn	Parc-y-delyn is a 46ha beef breeding and rearing unit, mostly owned. The breeding and rearing takes place on the land around the buildings, with some off-lying rented land used for the production of silage. The farm is run by family labour. Within the farm is a firewood business which seasons, saws and splits timber for delivery locally.
68/1	Pen-troydin fach	Pen-troydin-fach is a 45ha dairy unit centred on the buildings at Pen-troydin-fach, north of the A40. The farm runs about 90 milking cows and rears its own replacements. Calves are reared to store or finished sizes. Land is rented locally for silage production.
67	Pen-troydin-fawr	Pen-troydin-fawr is a beef breeding and rearing unit, extending to 96 ha. The farm runs a breeding herd of about 60 continental cross bred cows and rears all offspring to finished, together with bought-in calves. The farm is run by two generations of the same family.
66	Henglos	Henglos Farm lies approximately 3.5km east of Llanddewi Velfrey. The farm extends to approximately 142ha of owned and rented land. The farm runs a dairy herd of about 130 cows and rears all followers. The land at Llanddewi Velfrey comprises the western edge of the farm and is used for silage and grazing dry cows or beef animals.
38	Glenfield	Glenfield is a 45ha grassland farm. It is currently understocked, with some land let. The farmer runs a small beef cattle rearing herd, buying in weaned calves and rearing them on to finished. The farm has land both sides of the A40. Given the size of the farm it is treated as a potentially full-time farm unit.

## 12.5 Predicted Environmental Effects

12.5.1 The potential impacts are described in terms of the construction phase and the operational phase. Most agricultural impacts would commence at the start of the construction phase (e.g. land loss, severance) and therefore most agricultural impacts are described under the construction phase impacts. Hence the permanent loss of agricultural land starts at the construction phase and continues throughout the operational phase. In addition, some land may be affected for the duration of the construction phase.

### Construction

#### Agricultural Land Resources

- 12.5.2 The Scheme would require the acquisition of 31.5ha of land for construction, of which 4.1ha would be required only temporarily for the construction phase. This does not include construction camps, the details of which are not yet known.
- 12.5.3 Within the main farms identified, 0.5 ha is identified as required for the construction phase only. This land would be returned to agricultural use on completion. The temporary effects of construction are therefore limited to the loss of use of the land for the duration of the construction period.
- 12.5.4 The land to be taken permanently will be taken at the construction phase and thereafter represents a permanent loss to those farms from which the land is acquired.
- 12.5.5 As shown on the Predictive ALC Map at Figure 12.1, all of the land is predicted to comprise of subgrade 3b and Grade 4. None therefore falls within the category of Best and Most Versatile (BMV) and so no breakdown between grades is necessary.
- 12.5.6 The quantum of land by holding is shown in Table 12.5, with an indication of overall farm size and proportionate impact. It should be noted that the severity of impact will depend upon the location of the land in relation to the farm and buildings, and those effects are assessed later.

12.5.7 The effects of the permanent land loss, and any short-term construction-only land loss, on each farm is identified in Table 12.5, using the magnitude criteria set out in Table 12.1.

Table 12.5 Land take by Holding (rounded to nearest 0.1ha)

Holding No.	Holding Name	Area farmed locally (ha)	Permanent land take (ha)	Temporary land take (ha)	Proportion of land farmed (%)
4/6 (excl. 6/11 – 14)	Henllan Estate	>200 <sup>(7)</sup>	8.8	0	<5
13/14	Pen-ca'rmaenau	90	1.1	0	1
68/2	Parc-y-delyn	46	1.5	0	3
68/1	Pen-troydin-fach	45	2.1	0	5
67 (+ 6/11 – 14)	Pen-troydin-fawr	96	7.8	0.4	8
66	Henglos	142	3.0	0	2
38	Glenfield	45	3.1	<0.1	7

<sup>7</sup> But the estate locally is much larger, so the overall proportionate effect is smaller.

Table 12.6 Impact on Affected Farms

<b>Holding No</b>	<b>Holding Name</b>	<b>Full/ Part-time</b>	<b>Effects of Proposals</b>
4/6	Henllan Estate	Full	The affected land is farmed by different enterprises. Mostly the effect will be along field edges and overall a moderate magnitude.
13/14	Pen-ca'rmaenau	Full	The affected land forms the edge of the farm, which is occupied by a large dairy farm unit. The overall effect is fairly limited but of moderate magnitude.
68/2	Parc-y-delyn	Full	The affected land includes access to the farm and causes some severance (see below). The quantum of land loss of itself is modest, but in combination with the location of the affected land the overall effect is of moderate magnitude.
68/1	Pen-troydin fach	Full	The affected land is close to the farm buildings and causes some severance (see below). It requires altered accesses. The combination of quantum and location leads to a moderate level of impact.
67 (+ 6/11 – 14)	Pen-troydin-fawr	Full	The affected land is close to the farm buildings and causes some severance (see below). The combined effect is a moderate impact.
66	Henglos	Full	The affected land is remote from the main part of the farm but forms important fodder and off-lying grazing land. The effect overall is considered to be fairly limited, given the off-lying nature of the land, but still of moderate magnitude.
38	Glenfield	Full	Whilst currently understocked, the farm has potential and the affected land runs through the centre of the farm. As a result of the proportion and location of the land loss the effect will be moderate.

12.5.8 It is not considered that any farms will be so adversely affected by the additional loss of land taken only temporarily during construction that they would have to close enterprises for the duration of construction. There will be additional costs, such as the need to purchase additional forage or renting additional grazing or forage land, but these will be matters for compensation.

12.5.9 None of the farms losing land permanently will be so affected that they would be rendered non-viable, either financially or physically, as a result of the proposals. Accordingly, none of the farms are considered to experience a major adverse impact as set out in Table 12.1. However, all of the farms will experience a moderate adverse impact, which will mean significant changes in day-to-day farm management.

- 12.5.10 Soil fulfils several functions, as set out in the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites<sup>8</sup> [12.6]. These include environmental interaction with water and air, support for ecological habitats and biodiversity, and as a habitat for living organisms. The Code advises on pre-construction planning, soil management during construction and the use of soils in landscape creation.
- 12.5.11 The soils along the route comprise soils developed over shales, variably affected by springs or fluctuating ground water. It will be important to handle these soils when they are not saturated, and any soils being stripped for re-use should be stripped when they are dry and stored in accordance with best practice, for example as set out in the Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra 2009), which sets out good practice for stripping, handling and storing of soils.
- 12.5.12 With good practice, the topsoil will be capable of restoration without structural damage. Accordingly, their wider benefits will be unaffected.

### **Severance During Construction**

- 12.5.13 Short-term severance of accesses into farmland could, without mitigation, cause significant short-term impacts on all the holdings, especially the Henllan Estate, Pen-ca'rmaenau, Parc-y-delyn and Pen-troydin-fach which are all accessed direct off the current A40. The effect, without mitigation, would potentially be that additional areas of land, and in some cases the farmhouses and buildings, would not be capable of beneficial use until alternative accesses proposed as part of long-term mitigation are provided.

### **Crop Loss and Timing**

- 12.5.14 Most of the affected land is in grassland use, but some is used to produce silage. Much is grazed. The loss of areas planned for winter forage production could affect the ability to overwinter livestock, but this would be a matter for compensation.

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<sup>8</sup> Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, Defra (September 2009)

### **Disease Transmission**

- 12.5.15 There is the potential, without good practice, for agricultural weeds and diseases to be spread between farms. There is very limited potential for animal diseases to spread during construction, even without mitigation, unless a particularly contagious outbreak (e.g. Foot and Mouth Disease) occurs.

### **Field Drainage**

- 12.5.16 Where fields have the benefit of a man-made below-ground land drainage system, severance of that system during construction could affect wider areas of land either where located above (through impaired drainage) or below (through increased run-off) the Scheme.

### **Water Provision**

- 12.5.17 The provision of water to fields being used for the grazing of livestock, and in the case of Pen-troydin-fach and Pen-troydin-fawr, the provision of spring water serving the farm buildings, could be affected during construction. Without mitigation, this could affect the ability of these farms or fields to carry livestock.

### **Noise and Dust**

- 12.5.18 Although no enterprises particularly sensitive to noise and dust were identified, there is potential for short-term impacts during construction.

## **Operational**

### **Agricultural Land Resources**

- 12.5.19 The Scheme would require the permanent loss of approximately 27.4ha of agricultural land from the principal farm businesses.

### **Severance**

- 12.5.20 Long-term severance could, without mitigation, have significant effects on most of the farms affected by the Scheme.

## **Other Effects**

- 12.5.21 Other impacts that are identified and commence at the construction phase could have long-term implications, including impacts on drainage and water provision. No long-term impact on disease transmission is considered likely.

## **12.6 Proposed Mitigation**

### **Construction Mitigation**

#### **Agricultural Land Resources**

- 12.6.1 The Scheme involves the permanent land take of the minimum amount of land necessary. The Scheme design includes land required for construction and essential mitigation only. Wherever possible, land required for use only in the construction phase will be returned to an agricultural quality comparable to that which existed before the Scheme, such that long-term agricultural use of that land will be possible.

#### **Severance during Construction**

- 12.6.2 During the early stages of construction there would be a period when proposed Private Means of Access (PMA), underpasses or overbridges to address severance, are being constructed. For that temporary period alternative access may not be possible. New permanent alternative access arrangements (PMAs) are incorporated into the Scheme to reduce severance on the farm units, as set out in Table 12.7, and these permanent measures will be brought into use as soon as feasible within the construction programme.

#### **Crop Loss and Timing impacts**

- 12.6.3 The impact of crop loss could be reduced by giving advance warning to enable farmers to plan for the year ahead. The timing of entry could minimise the localised impacts e.g. to delay entering a few weeks before a field is to be cut for silage and entering straight after harvest.

#### **Disease Transmission**

- 12.6.4 During construction care to avoid spreading soil and materials, which could potentially carry disease pathogens, between different farms

when the fencing is being erected at the start of the entry process, would minimise the limited risk of spreading diseases. Once the route is fenced, there should be limited opportunity for contact with animals and accordingly limited risk for potential disease transmission. Care would need to be taken with any crossing points used by livestock to avoid mixing of herds during the construction process.

### **Field Drainage**

- 12.6.5 Parts of the route are understood to have the benefit of historic below-ground land drainage systems, but in many cases the details are not known due to their age. Care would be taken during construction to identify any drainage schemes affected and to provide collection or header pipes so that these drainage systems can continue to work effectively under the surrounding land during construction. The drainage of surrounding land would be monitored during construction and if drainage conditions are noted to have altered, remedial works would be carried out.

### **Water Provision**

- 12.6.6 The provision of water would be maintained wherever possible. Water supplies to some areas could potentially be severed. In those circumstances, the owners would either be compensated or provided with other temporary water supplies.

### **Noise and Dust**

- 12.6.7 Noise and dust would be kept to a minimum and within acceptable working limits, as described in Chapters 13 and 14 of this ES, and as set out in the REAC within the CEMP.

## **Operational Mitigation**

### **Agricultural Land Resources**

- 12.6.8 Permanent land loss cannot be mitigated. The Scheme requires land for construction, and the design would take the minimum necessary to construct and operate the Scheme. Severance impacts are mitigated where possible and feasible. In many cases, a balance was struck between mitigation and design/cost. Mitigation considerations for each holding affected by severance are summarised in Table 12.7.

Table 12.7 Severance Mitigation Proposals

Plot Ref	Farm Unit	Alternative Access Proposals
4 & 6	Henllan Estate	A new PMA is proposed to serve the land north of the existing A40. This PMA will enable field accesses, which currently open onto the A40, to be accessed from the much more lightly used PMA.
13 & 14	Pen-ca'rmaenau	This farm is currently accessed via a drive off the A40. The continued access would be provided from a PMA which would connect to the A478 just north of Penblewin roundabout.
68/2	Parc-y-delyn	The access to Parc-y-delyn farm will connect onto the new junction serving Ffynnon Lane and numerous other properties.
68/1	Pen-troydin-fach	Access to this farm also runs from the new junction with the A40. It will then connect into the back of the farmyard along the existing track. A cattle-only underpass is proposed to provide access to severed land south of the Scheme. This will include a 2.3m wide by 2.7m tall cattle underpass, in a box profile. Whilst the underpass is a considerable length due to the contours and embankments, it will alleviate severance and will allow cattle to access the severed land.
67	Pen-troydin-fawr	The farm access from the Llanfallteg Road will not be affected. Access from the farm to severed fields north of the Scheme will be possible using the Llanfallteg Road and bridge.
38	Glenfield	Continued access, including past the proposed balancing pond, will be provided.

### Field Drainage

- 12.6.9 Parts of the route are understood to have the benefit of historic below-ground land drainage systems which would be identified, and header and collection systems continue to work effectively under the surrounding land. The drainage of surrounding land would be monitored and if drainage conditions are noted to have altered, remedial works would be carried out.

### Water Provision

- 12.6.10 The provision of water would be maintained wherever possible. Water supplies to some areas could potentially be severed. In those circumstances, the owners would be compensated to provide other temporary or permanent water supplies.

## 12.7 Residual Environmental Effects Following Mitigation

12.7.1 The significant effects of the Scheme are summarised in Table 12.7.

### Agricultural Land Resources

12.7.2 Approximately 27.4ha of agricultural land would be lost permanently to the Scheme. This is all shown on the Predictive ALC maps to fall within subgrade 3b and Grade 4. Accordingly, none of the land is of BMV quality.

12.7.3 This would be an impact of slight magnitude and medium sensitivity, and accordingly of minor adverse significance.

12.7.4 The additional land required temporarily during construction will not be lost, and its management and restoration will be governed as set out in the CEMP.

### Farm Business and Severance

12.7.5 This assessment considers the cumulative impact of the construction phase impacts on the farms affected. It assesses the impacts after the mitigation described in Section 12.7 is embedded into the Scheme.

12.7.6 The magnitude of the impacts, and the significance, is assessed against the criteria set out in Section 12.3.

12.7.7 All seven farms that would lose land to the Scheme would experience disruption that would require significant changes to their day-to-day land management. None, however, would be rendered unviable. Therefore, whilst in all cases the effect will be significant, in that the changes to day-to-day farm management will be more than minor, no farm business will be so affected that they will not adapt and continue. Farms are medium sensitivity receptors (see Table 12.2) and because of the moderate magnitude of impact, and the medium sensitivity of full-time farm holdings, the effects in all cases are defined to be of minor adverse significance. Hence farms are significantly affected but the effect, in terms of agricultural impacts within the Environmental Assessment methodology, are minor.

- 12.7.8 No agricultural enterprises would be significantly adversely affected by operational impacts that have not been described above.

## **12.8 Monitoring of Mitigation**

- 12.8.1 Monitoring of mitigation measures for significant effects will be undertaken following completion of construction to demonstrate effectiveness.

## **12.9 Summary and Conclusions**

### **Impacts on Land Resources**

- 12.9.1 The Scheme will involve the permanent loss of approximately 27.4ha of agricultural land. None of this is shown to be of the best and most versatile agricultural quality. This is an impact of slight magnitude on a resource of medium sensitivity, leading to an overall impact of minor adverse significance.

### **12.10 Impacts on Farm Business**

- 12.10.1 There are seven farms affected. All will experience significant changes in day-to-day operations, but the viability and continued function of the holdings is not threatened. Accordingly, in all cases, the effect is of moderate adverse magnitude on an interest of medium sensitivity, leading to an impact of minor adverse significance.

### **12.11 Other Impacts**

- 12.11.1 There are no other significant adverse impacts.

Table 12.8 Summary of Significance of Effects

Plot Ref	Farm Unit	Area taken ha (%)	Magnitude of Impact (Post Mitigation)
4 and 6	Henllan Estate	8.8 (<5)	The Henllan Estate would lose of the order of 8.8ha, in two different family ownerships. The effect of such land loss would have a limited impact on the overall size of the estate, or the viability of occupying farms. Access to all severed land would be available post construction. Overall however, due to the quantity of land involved, this would be an impact of moderate adverse magnitude and medium sensitivity, and accordingly of minor adverse significance.
13 and 14	Pen-ca'rmaenau	1.1 (1)	This holding would lose of the order of 1.1ha. Access would not be adversely affected. Overall the magnitude of impact would be moderate and, with the sensitivity and the receptor being medium, the overall impact would be of minor adverse significance.
68/2	Parc-y-delyn	1.5 (3)	This farm would lose of the order of 1.5ha of land. There would be severance of approximately 0.2ha of land, access to which would only be possible by crossing over the A40. The utility of that land would, as a result, be greatly reduced for this farm holding. The overall effect would be moderate magnitude on a full time holding of medium sensitivity, and accordingly an impact of minor adverse significance.
68/2	Pen-troydin-fach	2.1 (5)	The land loss from this farm unit would be of the order of 2.1ha, or 5% of land occupied. Whilst access for cattle would be possible via the proposed farm underpass, there would still be disruption to the working practices of the farm. The provision of the underpass would mitigate successfully the worst of the impact. The farm is provided with water from a spring, and this supply would be continued, or alternate supplies provided. Overall, therefore, with the mitigation the impact would be of moderate magnitude on a farm of medium sensitivity, an overall impact of minor significance.

Plot Ref	Farm Unit	Area taken ha (%)	Magnitude of Impact (Post Mitigation)
67 and 6/11 - 14	Pen-troydin-fawr	7.8 (8)	This beef unit would lose approximately 4.8ha from their owned land and 3.0ha from land they rent. Whilst the rented land is held on a short-term basis, the farm has occupied that land for many years. The farm is supplied by spring water and this would be available post construction or alternate supplies provided. The impact of severance would be mitigated by the provision of field gates onto the Llanfallteg Road, which would reduce the need that currently exists for cattle to be run along the road, which would not be possible otherwise post construction. Overall the impact would be of moderate magnitude on a holding of medium sensitivity, an impact of minor adverse significance.
66	Henglos	3.0 (2)	The farm would lose 3.0ha of land. This is off-lying land and at the periphery of the farm. A small amount of land would be severed without access. The overall impact would be of moderate magnitude on a farm of medium sensitivity, and accordingly of minor adverse significance.
38	Glenfield	3.1 (7)	This farm is currently not farmed to its full extent due to the age of the farmer, but an assessment was made based on the farm's potential. The farm would lose of the order of 3.1ha of land, and some land to the north would only be accessible via a lengthy detour. The access to land south of the A40 would also become more difficult due to the attenuation pond. The overall impact would be of moderate magnitude. The farm is sufficiently large to comprise a full-time unit, and accordingly be of medium sensitivity. The impact is one of minor adverse significance.