

Welsh Government

**A40 Llanddewi Velfrey to Penblewin  
Improvements**

Environmental Statement Chapter 10:  
Archaeology and Cultural Heritage

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## 10 Cultural Heritage

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### 10.1 Introduction

- 10.1.1 This chapter considers the direct and indirect impact of the Scheme on cultural heritage assets, including buried archaeological features, historic buildings and historic landscapes. It identifies the likely impacts on these heritage assets in terms of the potential for direct physical disturbance and changes within the settings of the assets and assesses the overall significance of effect.
- 10.1.2 The following stages of the Scheme are likely to affect the historic environment:
- a) **Construction (including land take):** this is the phase where direct, physical impacts on built heritage assets and buried archaeological remains are most likely to occur.
  - b) **Operation:** this is the phase during which nearby heritage assets may experience impacts due to visual and acoustic changes within their settings, and there would also be changes to the character of the historic landscape.
- 10.1.3 Physical assets were considered within the 500m study area on either side of the Scheme boundary. Within this corridor, 125 assets were identified. Of these, 31 assets are found within the Scheme boundary and are potentially physically impacted. The remaining 94 assets are outside the Scheme and should not be impacted. The assets are listed in Table 10.9. Of these, 4 were designated sites, with a further 164 in the zone between the 500m boundary and 5km. These sites consisted of a total of 32 scheduled ancient monuments (SAM) and 127 listed buildings (LB).
- 10.1.4 Figure 10.1 shows the locations of the designated sites. Figure 10.2(A, B, & C) show the effects on cultural heritage assets, while 10.3 is a draft mitigation plan.

## 10.2 Legislation and Policy Context

### Relevant Legislation

- 10.2.1 The primary legislation applicable to this chapter comprises the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990.
- 10.2.2 The Historic Environment (Wales) Bill was passed by the National Assembly for Wales on 9th February 2016. The Act makes changes to the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990. It also incorporates stand-alone provisions establishing: statutory historic environment records, a list of historic place names and an advisory panel for the historic environment.

### National Planning Policy

- 10.2.3 The relevant national planning policy is Planning Policy Wales (Welsh Government, 2016) (PPW). Chapter 6 of PPW (Conserving the Historic Environment) establishes the Welsh Government objectives about the protection of the historic environment. It further explains that local planning authorities have an important role in this protection, whilst ensuring that the historic environment can accommodate and respond to the current needs of society.
- 10.2.4 PPW identifies Cadw as the historic environment division of the Welsh Government and ‘*has responsibility for protecting, conserving and promoting an appreciation of the historic environment of Wales*’ (paragraph 6.2.1). It lays out the duties of Welsh Government with regard to the compilation of lists of buildings of special architectural or historic interest (i.e. listed buildings) and the scheduling of ancient monuments that are considered to be of national importance (i.e. scheduled monuments).
- 10.2.5 The roles of the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) and the four Welsh Archaeological Trusts are also defined. PPW goes on to provide advice with regard to the management of designated and undesignated heritage assets.

- 10.2.6 With regard to archaeological remains, Section 6.5 of PPW states that *'The desirability of preserving an ancient monument and its setting is a material consideration in determining a planning application, whether that monument is scheduled or unscheduled. Where nationally important archaeological remains, whether scheduled or not, and their settings are likely to be affected by proposed development, there should be a presumption in favour of their physical preservation in situ. In cases involving lesser archaeological remains, local planning authorities will need to weigh the relative importance of archaeology against other factors, including the need for the proposed development'* (paragraph 6.5.5).
- 10.2.7 The policy regarding listed buildings is presented in Section 6.5 of PPW: *'There should be a general presumption in favour of the preservation of listed buildings.... Where a development proposal affects a listed building or its setting, the primary material consideration is the statutory requirement to have special regard to the desirability of preserving the building, or its setting, or any features of special architectural or historic interest which it possesses'* (paragraph 6.5.11). The latter statement refers to the requirements under Section 66(1) of the Planning (Listed Buildings and Conservation Areas Act) 1990.
- 10.2.8 The Wales Transport Strategy identifies a number of key environmental challenges with regard to the impact of transport on the environment. One of these relates to the loss of landscape and heritage quality and distinctiveness. The Strategy aims to *'Reduce the negative impacts of transport on our heritage – landscape, townscape, historical environment and Wales' distinctiveness'* (Welsh Assembly Government, 2008b, Table 4).
- 10.2.9 Welsh Government advice regarding the importance of good design as a means of promoting sustainability (with regard to buildings and landscapes) is presented in Technical Advice Note (TAN) 12: Design (Welsh Government, 2016).

### Local Planning Policy

- 10.2.10 The Pembrokeshire Local Planning Development Plan, adopted in February 2013, contains the following proposed policy relevant to the historic environment: *GN.38 Protection and Enhancement of the Historic Environment Development that affects sites and landscapes*

*of architectural and/or historical merit or archaeological importance, or their setting, will only be permitted where it can be demonstrated that it would protect or enhance their character and integrity.*

## 10.3 Assessment Methodology

### Relevant Guidance

- 10.3.1 Historic Environment TAN 24, (Welsh Government, 2017) replaces Circular 60/96 Planning and the Historic Environment: Archaeology; 61/96 Planning and the Historic Environment; Historic Buildings and Conservation Areas; and 1/98 Planning and the Environment: Directions by the Secretary of State for Wales. TAN 24 forms a single document giving guidance for the planning system as it considers the historic environment during development plan preparation and decision making planning and listed building applications.
- 10.3.2 The historic environment is defined as: *‘All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past activity, whether visible, buried or submerged, and deliberately planted or managed.’* A historic asset is: *‘An identifiable component of the historic environment. It may consist or be a combination of archaeological site, a historic building or area, historic park and garden or a parcel of historic landscape. Nationally important historic assets will normally be designated.’*
- 10.3.3 Taken together, and set within their cultural context, historic assets contribute to the character and sense of place of different parts of Wales. (TAN 24 1.7).
- 10.3.4 TAN 24 uses the *Conservation Principles for the Sustainable Management of the Historic Environment in Wales* (Conservation Principles), published in 2011 as a basis upon which Cadw discharges its statutory duties. Conservation Principles should be used to assess the potential impacts of a development proposal on the significance of any historic asset/assets and to assist in decision-making where the historic environment is affected by the planning process (TAN 24 1.10).
- 10.3.5 Six principles are used:

1. Historic assets would be managed to sustain their values
2. Understanding the significance of historic assets is vital
3. The historic environment is a shared resource
4. Everyone will be able to participate in sustaining the historic environment
5. Decisions about change must be reasonable, transparent and consistent
6. Documenting and learning from decisions is essential

10.3.6 TAN 24 shows that heritage impact assessment is a structured process to enable the significance of a designated asset to be taken into account when considering proposals for change.

10.3.7 Information on historic assets in Wales is included in TAN 24. This describes the sources of information on designated historic assets (scheduled monuments, listed buildings and protected wrecks) and areas on the register of historic parks and gardens and the register of historic landscape in Wales. The large majority of historic assets are not designated and the largest comprehensive set of data on all known archaeological sites, historic buildings and other components of historic landscape is found in the Historic Environment Records (HERs), maintained by the four Welsh archaeological trusts.

10.3.8 TAN 24 describes the importance of archaeological assets and their fragility and vulnerability to damage. The development management process maintains a presumption that preservation *in situ* is the preferred option for the management of assets that may be affected by development. TAN 24 outlines the procedures to be followed for the preservation, or where considered appropriate, the excavation and recording of archaeological features. This includes defining the scope of work and monitoring performance. The need to provide a contingency to deal with unexpected archaeological discoveries by the developer is also emphasised.

10.3.9 *Setting of Historic Assets in Wales* (Cadw 2017) gives guidance on measures to assess the potential visual impact of developments. The introduction to this makes it clear that all individual historic assets, irrespective of their designation, are affected by this guidance.

10.3.10 Section 4 of *Setting Historic Assets in Wales* lays out the stages of assessment that are to be followed:

**Stage 1:** *Identify the historic assets that might be affected by a proposed change or development.*

**Stage 2:** *Define and analyse the settings to understand how they contribute to the significance of the historic assets and, in particular, the ways in which the assets are understood, appreciated and experienced.*

**Stage 3:** *Evaluate the potential impact of a proposed change or development on that significance.*

**Stage 4:** *If necessary, consider options to mitigate or improve the potential impact of a proposed change or development on that significance.*

10.3.11 The document identifies criteria for the setting of a scheduled monument that Cadw must be consulted on by a planning application. This Scheme meets the following criteria:

*“Development likely to be visible from a scheduled monument and which meets one of the following criteria:*

*it is within a distance of 5 kilometres from the perimeter of a scheduled monument and is 100 metres or more in height, or has an area of 1 hectare or more.”*

Therefore, this assessment considers the setting of all designated assets within 5km of the project boundary.

10.3.12 The overall assessment of impacts and effects presented in this assessment is in line with the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 2, Part 5 (HA205/08) (Highways Agency *et al.*, 2008). This provides guidance on the assessment and management of environmental effects, including advice on determining the magnitude of impacts and the significance of effects.

10.3.13 DMRB guidance specific to the historic environment is provided in the DMRB Volume 11, Section 3, Part 2 Cultural Heritage (HA208/07) (Highways Agency *et al.*, 2007). This splits the cultural heritage resource into three related sub-topics: Archaeological Remains; Historic Buildings and Historic Landscape. Annex 8 of HA208/07 provides guidance on how the processes described within this section of the DMRB may need to be adapted within the devolved administrations.

- 10.3.14 In addition to the above, the following Chartered Institute for Archaeologists' Standard and Guidance documents were utilised within the programme of baseline data gathering:
- a) Standard and guidance for historic environment desk-based assessment (Chartered Institute for Archaeologists, 2017).
  - b) Standard and guidance for archaeological geophysical survey (Chartered Institute for Archaeologists, 2014a).

### Study Area

- 10.3.15 The study area for historic asset collection was the land take itself and a corridor 500m beyond the boundary of the proposed Scheme. Where linear or historic landscape features extend beyond the 500m area, the study area was extended in order to provide sufficient context for the understanding of such features. The desk-based assessment for the Scheme is presented in Appendix 10.4.
- 10.3.16 For designated heritage assets (e.g. scheduled monuments and listed buildings) whose setting could be affected as a result of change, a further study area was used to include all such assets within a zone of 5km. The locations of Designated assets are shown in Figure 10.1 and listed in Appendix 10.3.

### Approach to Identification of Baseline Conditions

- 10.3.17 A desk based assessment of the Scheme was prepared using various sources of data including a walk through survey. Full coverage of the regional HER for the main study area was acquired from the Dyfed Archaeological Trust (DAT), together with details of defined Historic Landscape Character Areas. Information regarding scheduled monuments, listed buildings and Registered Parks, Gardens and Landscapes of Special Historic Interest was obtained from Cadw and published sources.
- 10.3.18 A walkthrough survey was conducted in September 2017, together with secondary visits to specific locations associated with the geophysical survey during that Autumn. Additional visits were undertaken during the dry summer of 2018 to assess the degree to which the fields were developing parchmarks and cropmarks. The degree to which designated sites could be seen from the project boundary, or views from the designated sites affected were assessed during the site visits.

- 10.3.19 Geophysical survey in the form of a fluxgate gradiometer survey was undertaken at a number of locations on the Scheme. The areas were selected for survey on the basis of scheme design and impact; effect of land use on the magnetic survey and overall archaeological potential. A report on the results of this programme of magnetometer survey is presented as Appendix 10.1.
- 10.3.20 LiDAR information contained in the Lle website (lle.gov.wales) was examined and used to provide information on earthworks and topography across the study area.
- 10.3.21 Available satellite imagery covering the Scheme was acquired from commercial suppliers and examined along with other historic aerial photographs.

### Assessment Criteria and Assignment of Significance

- 10.3.22 The assessment of impacts and effects on cultural heritage receptors was undertaken in accordance with the methodology described in DMRB Volume 11, Section 3, Part 2 (HA208/07) (Highways Agency *et al.*, 2007). This is a Detailed Assessment as described in paragraph 3.9 of HA208/07, which is the level required when there is the potential for significant effects on cultural heritage resources.
- 10.3.23 The overall approach to the assessment of the significance of effects is in line with DMRB Volume 11, Section 2, Part 5 (HA205/08) (Highways Agency *et al.*, 2008). This provides guidance on the assessment and management of environmental effects, including advice on determining the magnitude of impacts and the significance of effects.

### Receptor Value

- 10.3.24 In order to reach an understanding of the level of any effect that a scheme may have on a heritage asset, it is necessary to understand the importance of that asset. For example, is it important at a national level or at a local level?
- 10.3.25 HA208/7 (Highways Agency *et al.*, 2007) provides the following tables for assessing the value (significance) of heritage assets.

Table 10.1 Factors for Assessing the Value of Archaeological Assets

<b>Value (sensitivity)</b>	<b>Factors</b>
Very High	World Heritage Sites (including nominated sites). Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives.
High	Scheduled Ancient Monuments (including proposed sites). Undesignated assets of schedulable quality and importance. Assets that can contribute significantly to acknowledged national research objectives.
Medium	Designated or undesignated assets that contribute to regional research objectives.
Low	Designated and undesignated assets of local importance. Assets compromised by poor preservation and/or poor survival of contextual associations. Assets of limited value, but with potential to contribute to local research objectives.
Negligible	Assets with very little or no surviving archaeological interest.
Unknown	The importance of the resource has not been ascertained.

Table 10.2 Criteria for Establishing Value of Historic Buildings

<b>Value (sensitivity)</b>	<b>Criteria</b>
Very High	Structures inscribed as of universal importance as World Heritage Sites. Other buildings of recognised international importance.
High	Scheduled Ancient Monuments with standing remains. Grade I and II* Listed Buildings. Other listed buildings that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in the listing grade. Conservation Areas containing very important buildings. Undesignated structures of clear national importance.
Medium	Grade II Listed Buildings. Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historical associations. Conservation Areas containing buildings that contribute significantly to its historic character. Historic Townscape or built-up areas with historic integrity in their buildings or built settings (e.g. including street furniture and other structures).

Value (sensitivity)	Criteria
Low	'Locally Listed' buildings. Historic (unlisted) buildings of modest quality in their fabric or historical association. Historic Townscape or built-up areas of limited historic integrity in their buildings or built settings (e.g. including street furniture and other structures).
Negligible	Buildings of no architectural or historic note; buildings of an intrusive character.
Unknown	Buildings with some hidden (i.e. inaccessible) potential for historic significance.

## Magnitude of Impact

- 10.3.26 The magnitude of an impact is assessed without regard to the value of the heritage asset. In terms of the judgement of the magnitude of impact, this is based on the principle that preservation of the asset is preferred, and that total physical loss of the asset is least preferred.
- 10.3.27 With regard to buried archaeological remains, it is not always possible to assess the physical impact in terms of percentage loss, and therefore it can be important in such cases to try to assess the capacity of the heritage asset to retain its character and significance following any impact. Impacts resulting from changes within the settings of buried archaeological remains may also be more difficult to assess as they do not involve physical loss of the resource – further information regarding the methodology for assessment of impacts and effects resulting from change within the settings of heritage assets is provided in Table 10.3 which is derived from HA208/07 (Highways Agency *et al.*, 2007).

Table 10.3 Factors in the Assessment of Magnitude of Impact - Archaeological Remains

Impact magnitude	Factors
Major	Change to most or all key archaeological materials, such that the resource is totally altered. Comprehensive changes to setting.
Moderate	Changes to many key archaeological materials, such that the resource is clearly modified. Considerable changes to setting that affect the character of the asset.
Minor	Changes to key archaeological materials, such that the asset is slightly altered.

<b>Impact magnitude</b>	<b>Factors</b>
	Slight changes to setting.
Negligible	Very minor changes to archaeological materials, or setting.
No change	No change.

10.3.28 For impacts on historic buildings, the following table for the assessment of magnitude of impacts on historic buildings from HA208/07 (Highways Agency *et al.*, 2007).

Table 10.4 Factors in the Assessment of the Magnitude of Impact – Historic Buildings

<b>Impact magnitude</b>	<b>Factors</b>
Major	Change to key historic building elements, such that the resource is totally altered. Comprehensive changes to setting.
Moderate	Changes to many key historic building elements, such that the resource is significantly modified. Changes to the setting of an historic building, such that it is significantly modified.
Minor	Change to key historic building elements, such that the asset is slightly different. Change to setting of an historic building, such that it is noticeably changed.
Negligible	Slight changes to historic building elements or setting that hardly affect it.
No change	No change to fabric or setting.

10.3.29 HA208/07 (Annex 7, para. 7.12.1) (Highways Agency *et al.*, 2007) explains that historic landscapes cannot be destroyed, but that impacts on them can change their character. Impacts should be assessed using evaluated historic landscape character units, not the elements/parcels/components that contribute towards that character. There may be impacts resulting from changes within the settings of identified units, especially with regard to designated historic landscapes. Factors to be used in the assessment of magnitude of change are identified in Table 10.5.

Table 10.5 Factors in the Assessment of Magnitude of Impact – Historic Landscape

Impact magnitude	Factors
Major	Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit.
Moderate	Changes to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character.
Minor	Changes to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited changes to historic landscape character.
Negligible	Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character.
No change	No change to elements, parcels or components; no visual or audible changes; no changes arising from amenity or community factors.

## Significance of Effect

- 10.3.30 The level or significance of an effect is a combination of the importance or value of the heritage asset and the magnitude of impact on that asset. Effects can be adverse or beneficial. Beneficial effects are those that mitigate existing impacts and help to restore or enhance heritage assets, therefore allowing greater understanding and appreciation.
- 10.3.31 HA208/07 (Highways Agency et al., 2007) provides the following matrix (Table 10.6 and 10.7) for use within all three sub-topics. As explained within HA208/07 (paragraph 5.38 and Annex 5, paragraph 5.13.3), the matrix is not intended to ‘mechanise’ the process of assessment of the significance of the effect but rather to act as a check that can ensure judgements of importance (value), impact magnitude and significance of effect are balanced. Where the matrix produces a level of effect significance that is clearly unreasonable, the judgements of importance (value) and impact magnitude should be reassessed to ensure that they can be justified.

10.3.32 Within this chapter of the ES, effects of moderate or greater significance are considered to be ‘significant’.

10.3.33 Although HA208/07 (Highways Agency *et al.*, 2007) does not provide definitions of the significance of effects specific to the Cultural Heritage topic, the guidance set out in Table 2.3 of HA205/08 (Highways Agency *et al.*, 2008) was taken into account, see Table 10.6.

Table 10.6 DMRB Descriptors of Significance of Effect Categories

Significance category	Typical Descriptors of Effect
Very large	Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.
Large	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a particular resource or receptor.
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project.
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Table 10.7 Significance of Effects Matrix

<b>VALUE</b>	<b>Very High</b>	Neutral	Slight	Moderate/ Large	Large or Very Large	Very Large
	<b>High</b>	Neutral	Slight	Moderate/ Slight	Moderate/ Large	Large/ Very Large
	<b>Medium</b>	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
	<b>Low</b>	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate
	<b>Negligible</b>	Neutral	Neutral	Neutral/ Slight	Neutral/ Slight	Slight
		<b>No change</b>	<b>Negligible</b>	<b>Minor</b>	<b>Moderate</b>	<b>Major</b>
		<b>MAGNITUDE OF IMPACT</b>				

## Settings

- 10.3.34 As described above, HA208/07(Highways Agency *et al.*, 2007) refers to effects on the settings of heritage assets and explains (paragraph 4.19) that setting is a material consideration in government policy relating to the historic environment.
- 10.3.35 The existence of direct lines of sight between the heritage asset and a scheme is an important factor in judging the visual impact of the development. However, it is possible for changes within the setting to occur even when such a relationship does not exist. For example, views towards a listed building from a frequently visited location, such as a park or a public footpath, may be affected by the presence of a larger development, even if the development is not directly visible from the building itself.
- 10.3.36 Consideration has also been given to the sensitivity to change of the setting of a heritage asset. This is done through examination of the current setting with regard to identifying elements that contribute to the significance of the asset, elements that make a neutral contribution to the significance of the asset and elements that make a negative contribution (i.e. detract from) the significance of the asset.
- 10.3.37 Once the impact on the significance of the heritage asset was examined, this was then related to the magnitude of impact scales defined below. These are closely linked to the magnitude of impact scales used in HA208/07 (Highways Agency *et al.*, 2007).
- c) Major: Substantial change within the setting leading to considerable loss or enhancement of significance of the asset.
  - d) Moderate: Change within the setting leading to some loss or enhancement of significance of the asset.
  - e) Minor: Slight change within the setting leading to a slight loss or enhancement of significance of the asset.
  - f) Negligible: Very minor changes within the setting that hardly affect the significance of the asset.
  - g) No change: No substantive change within the setting.
- 10.3.38 The magnitude of impact was considered with the value/sensitivity of the asset within the overall matrix for identifying significance of effects (see Table 10.6 and 10.7).

## Limitations of the Assessment

- 10.3.39 All readily available data required for the assessment were acquired and examined. Remote sensing methodologies (LiDAR, satellite imaging and geophysical survey) were utilised in order to gain as much potential evidence as possible.
- 10.3.40 No intrusive archaeological investigation within the Scheme boundary has been undertaken to date. This action was not a requirement of the original contract, where it was indicated as being required following the results of the geophysical survey. The assessment of impact and value of any historical asset may change once additional information has been collected by evaluation trenching work. Remote sensing has identified a number of locations that potentially contain buried archaeological evidence. Some appear to be of natural or very recent origin. These will need to be examined by a programme of evaluation trenching, the details of which need to be agreed with the regional curator.
- 10.3.41 As there is not a construction contractor in place for the Scheme, it has not been possible to determine additional work areas, compounds etc. outside the boundary of the Scheme. These will require additional assessment as these are identified

## 10.4 Baseline Environment

- 10.4.1 The archaeological and cultural heritage assets contained within the area covered by the route option is varied. Most assets are from the last two hundred years, with a range of features stretching back through the medieval to the Prehistoric period. A Gazetteer of historical assets in the 500m study area is shown in Table 10.9 and detailed in Appendix 10.2. Designated sites within a wider 5km study area are presented in Appendix 10.3 and Figure 10.1. It should be remembered that there are two study areas: the 500m study area that includes all known assets and the 5km study area that lists designated sites only.
- 10.4.2 Assets identified in both study areas are discussed below. Each asset in the 500m study area is identified by an ID reference number in brackets, e.g. (63). Those identified in the 5km study area are not given a project specific number.

### Palaeolithic, Mesolithic, Neolithic (to 2200 BC)

- 10.4.3 No assets of this period can be identified within the 500m study area.
- 10.4.4 A single designated site, the Neolithic Llan burial chamber is found in the 5km study area.

### Bronze Age (2500 BC to 700 BC)

- 10.4.5 Within the 500m study area, seven locations are believed to be burnt mounds (**3, 9, 16, 20, 37, 88** and **89**). These are collections of burnt fire shattered stone in a matrix of charcoal rich soil. They are typically found in close proximity to springs or small watercourses. Radiocarbon dating normally shows them to be of Bronze Age date, although some are earlier and they can be as late as the Post-Roman era. On excavation, they are often associated with a small water-filled trough. Experimental archaeology shows that water can be brought to boiling point by dropping heated stones into the troughs. This can then be used for cooking or possibly, some form of sauna. These occur frequently in Wales, Ireland and Scotland. All the features in the study area were found by Ordnance Survey surveyors T.C. Cantrill and OT Jones, who identified many in the region during fieldwork in the early 20th century.
- 10.4.6 A single mound (**92**) is thought to be a burial mound, while there are two stones that may originate from this period (**105** and **115**).
- 10.4.7 Five designated sites of the period are recorded in the 5km study area. These are all burial mounds.

### Iron Age (800 BC to AD 43)

- 10.4.8 Within the 500m study area there is a single asset likely to originate in this period, a promontory fort, (**35**).
- 10.4.9 A total of 16 designated sites of this period are identified in the 5km study area. All relate to defended enclosures.

### Roman, Early Medieval (AD 43 to AD 410)

- 10.4.10 No assets of the Roman period have been identified in the 500m study area.

- 10.4.11 Two designated sites of the Roman period are found in the 5km study area. Both relate to the road running westwards from the town of Carmarthen.

### Early Medieval (AD 410 to AD 1066)

- 10.4.12 No assets of the early Medieval period have been identified in the 500m study area.
- 10.4.13 Two designated sites of the period are found in the 5km study area. Both are early Christian inscribed stones.

### Medieval (1066 to 1540)

- 10.4.14 The period saw the early development of local market centres and some of the larger villages such as Lampeter Velfrey, Clunderwen and Llandissilio. The villages were set in a landscape of long rectangular fields, parts of which can be seen in the present-day landscape (63).
- 10.4.15 There are no assets directly identified to this period, the village of Llanddewi Velfrey and the field system (63) may have origins in the period, but no elements can be directly identified of that date.
- 10.4.16 Designated sites in the 5km study area include 12 sites. These include castles and churches.

### Post-medieval (1540-1901)

- 10.4.17 Within the 500m study area, 82 assets relate to this period. These include chapels, Ffynnon, a Listed Building grade II (5) and Bethel (29); two blacksmith workshops are recorded (17, 24); buildings (6, 21, 33, 46, 49, 59); Trefangor Baptist burial ground (48); cottages (4, 15, 18, 30, 34, 36); dwellings (11, 13, 14, 44, 45, 49, 53, 54, 55); farmsteads and homesteads (40, 42, 43, 56, 86); gravel pits (16, 27, 51); possible leat (60); Lodge to Henllan mansion (47); old bridge under the original route of the A40 (57); poorhouse (12); post office (26); public houses (22, 25); quarries (7, 8, 10, 28, 32, 38, 50, 52); the turnpike road between Whitland and Penblewin operated by the Whitland Turnpike Trust (39); the war memorial in Llanddewi Velfrey, one of the earliest in Pembrokeshire is a Listed Building grade II (23); a well (31); at Gwindy, east of the Scheme there are two

Listed Buildings graded II, these are the farmhouse with walls and railings to the garden (84) and the old stable block (85).

- 10.4.18 The Post-medieval designated sites in the 5km study area include a total of 121 sites. Of these, 40 are found in the town of Narberth. All are listed buildings and cover a wide range of assets, such as town house, mansions, bridges, memorials and marker stones.

### Features of Unknown Date

- 10.4.19 There are a number of assets identified as ‘unknown’ date. These probably date from the Post-medieval. The assets are cropmarks (1, 61, 62); a standing stone (2); soil marks (41) and a LiDAR feature (58).
- 10.4.20 The geophysical survey identified 20 features that are of possible archaeological origin. These are of unknown date, although some align with the field layout, so could be of similar age. The features are identified as possible enclosures (64, 65, 66); numerous features (67); curvilinear features (68, 69); multiple features (70); potential trackways (71, 72); possible ridge and furrow (73); linear features (74, 75, 77, 78, 79); possible burnt area (76); quarrying area (80) and possible ferrous material (81, 82, 83).
- 10.4.21 No assets of unknown date are listed as designated sites.

## 10.5 Assessment of Potential Construction Effects

- 10.5.1 Physical impacts of construction are described in section 10.5, while the assessment of potential operational impacts, which is chiefly concerned with settings is described in section 10.6.
- 10.5.2 The potential direct physical land take impacts on heritage assets that would occur at the start of the construction phase, along with the consequent effects, are described in this section.

### Physical impact

- 10.5.3 In the 500m buffer zone on either side of the Scheme boundaries, identified as the study area, 125 assets were identified. 94 assets are not physically impacted by the Scheme, 31 appear to be physically impacted. These assets are listed in Table 10.9 and discussed below.

The effects of the Scheme on cultural heritage assets are shown in Figures 10.2 (A, B & C).

- 10.5.4 The assessment includes the entire Scheme footprint for permanent construction. Information is not available for areas of temporary land take, which will need to be assessed once they are identified once a construction contractor is appointed.
- 10.5.5 **9 *Burnt mound.*** Burnt mound identified by Cantrill and Jones. No evidence is visible for this feature, although it lies in a typical location for such a feature. Further similar features could be located in the vicinity. The geophysical survey was unable to operate in this area due to wet conditions and high undergrowth.
- 10.5.6 The significance of this asset is derived from its archaeological value that may give additional information on the development, economy and environment of the prehistoric period in this area. This is regarded as a heritage asset of medium value.
- 10.5.7 Situated on the edge of the Scheme boundary, but possibly not correctly located. This area is intended as a balancing pond for drainage of the road. The scale of the impact on the site is assessed as moderate as the condition of the site cannot be determined, with a subsequent significance of effect assessed as moderate.
- 10.5.8 **19 *Burnt mound.*** Burnt mound identified by Cantrill and Jones. No evidence is visible for this feature, although it lies in a typical location for such a feature. Further similar features could be located in the vicinity. The geophysical survey was unable to function in this area due to wet conditions and high undergrowth.
- 10.5.9 The significance of this asset is derived from its archaeological value that may give additional information on the development, economy and environment of the prehistoric period in this area. This is regarded as a heritage asset of medium value.
- 10.5.10 This area will lie under an embankment for the road. The scale of the impact on the site is assessed as moderate as the condition of the site cannot be determined, with a subsequent significance of effect assessed as moderate.

- 10.5.11 **20 *Burnt mound.*** Burnt mound recorded on Pentroydin Fach, identified by survey in 1997. Reported to be heavily damaged then, while no evidence was seen during the field survey. It lies in a typical location for such a feature. Further similar features could be located in the vicinity. The geophysical survey was unable to operate in this area due to wet conditions and high undergrowth.
- 10.5.12 The significance of this asset is derived from its archaeological value that may give additional information on the development, economy and environment of the prehistoric period in this area. This is regarded as a heritage asset of medium value.
- 10.5.13 The given grid reference is outside the Scheme boundary, but lies in an area that was selected for an additional working area to allow access. Due to this, the area was subjected to a geophysical survey over a large part of the field to the south of the Scheme. No direct evidence for a burnt mound was seen in the geophysical survey, merely a set of linear anomalies that follow the line of historic field boundaries. To the north of this area, the geophysical survey did identify multiple anomalies that could represent burnt features, that could be the result of prehistoric activity (**70**).
- 10.5.14 The scale of the impact on the site is assessed as moderate as the condition of the site cannot be determined, with a subsequent significance of effect assessed as moderate.
- 10.5.15 **36 *Cottage.*** Cottage shown on Tithe map and OS 1908. Some faint marks are visible on satellite images. The known extent is outside the Scheme boundary, but it is possible that features related to the site extend into the extent of the Scheme.
- 10.5.16 The asset is regarded as being of low significance. The magnitude of impact will be minor, if any, giving a significance of effects of neutral or slight.
- 10.5.17 **39 *Turnpike road.*** The current A40 largely follows the line of the turnpike road. A toll bar was recorded at Penblewin. In places, particularly around Ffynnon, the road alignment varies as a result of improvements to the modern A40 route.
- 10.5.18 These road improvements have totally changed the character of the original road. There are currently no structures indicating a toll bar at

Penblewin. This area has also seen large scale disturbance from works relating to the roundabout. The scale of these changes can be seen from the 1946 RAF vertical air photographs. As much of the existing road has been removed by later improvements, it is unlikely that significant evidence remains under the modern road. The new Scheme will follow parts of the previous alignment in the Ffynnon area and to the west of that, and also, in the Penblewin roundabout area.

- 10.5.19 The asset is regarded as being of medium significance. The magnitude of impact will be moderate in areas where the existing road is found, with a significance of effects of moderate where remains do exist.
- 10.5.20 **44 *Trefangor Cottage***. Trefangor Cottage is shown on tithe map and OS 1908. It is currently an undesignated standing building, which has been vacated and will be demolished as part of the Scheme. The building is a two storey cottage with surrounding gardens and garden sheds.
- 10.5.21 The asset is regarded as being of low value significance. The magnitude of impact will be major as the asset will be totally removed. The significance of effects will be slight or moderate.
- 10.5.22 **45 *Dwelling***. Dwelling shown on tithe map, but is absent on all subsequent historic maps. This area lies in the wide verge of the existing A40, no features are visible. The field north of this location was subjected to geophysical survey, but no anomalies were recorded. Rectification of the tithe map against the modern map base suggests that the location of the cottage may be under the present route of the A40, although this is not clear.
- 10.5.23 The asset is regarded as being of low value significance. The magnitude of impact will be moderate, as there is no information on the current condition, although any remains will be totally removed. The significance of effects is assessed as slight.
- 10.5.24 **46 *Building***. Building shown on tithe map and absent on all subsequent historic maps. This structure lies in woodland east of the roadway to Henllan mansion. The later historic maps show that the woodland was present in the 1880's. The feature lies within woodland and was not accessible at the time of survey.

- 10.5.25 The asset is regarded as being of low value significance. The magnitude of impact will be moderate as there is no information on the current condition. The significance of effects is assessed as slight.
- 10.5.26 **55 Cottage and garden.** Cottage and garden shown on tithe map, but not on subsequent historic maps. Nothing is visible on satellite images and the area was thickly covered by rushes at the time of the field visit. The asset lies on the edge of the Scheme land take. This area should be outside the main fill of the road in this area but could be included in landscaping and drainage works.
- 10.5.27 The asset is regarded as being of low value significance. The magnitude of impact is assessed as major as the asset could be well-preserved. The significance of effects is assessed as slight or moderate.
- 10.5.28 **56 Standing building.** Standing building on the north side of the A40 at Penblewin. Shown on tithe map as a single enclosure, while first edition Ordnance Survey shows several buildings. The 1946 RAF vertical aerial photographs show that the southern building had been removed by the encroaching road. Building walls are extant, but totally derelict and overgrown with trees.
- 10.5.29 The asset is regarded as being of low value significance. The magnitude of impact will be major as the structures will be totally removed. The significance of effects is assessed as neutral.
- 10.5.30 **60 Boundary.** Boundary, not shown on the tithe map, but present on the first edition Ordnance Survey. The features is visible on satellite images as a terraced feature leading towards Pentroydin Fach Farm. Possible leat.
- 10.5.30.1 The asset is regarded as of negligible significance. The magnitude of impact will be major as it will be totally removed. The significance of effects is assessed as slight or moderate.
- 10.5.31 **63 Field system.** Field system that extends to the parishes to the north. The origin of the system may be from the early medieval period, but has continued to be used with modifications to the present day. Small components of the field system will be removed to allow construction. The bulk of the field system will continue to exist and form a living component of the landscape.

- 10.5.32 The asset is regarded as of low value for significance. The magnitude of impact will be minor as the bulk of the system will be retained. The significance of effects is assessed as slight.
- 10.5.33 **64-83** *Geophysical survey anomalies.* The geophysical survey identified multiple anomalies, these are all considered as a single group until further information is available for them. Some of these may be of archaeological origin such as the potential enclosures (**64**, **65**, **66**), or the areas of burning close to known locations of burnt mounds (**70**). Others, however, can be seen to co-align with removed elements of the field system shown on historic maps, or the 1946 RAF vertical aerial photographs. A programme of evaluation trenching is required to identify the significance of these features. At present, the significance of each is classed as unknown.
- 10.5.34 Because the geophysical survey was located within the Scheme limits, all the features will be impacted by construction activities. Consequently, the scale of impact on these features is assessed as major. In many cases, the features can be identified as the results of recent activity, or possibly geology. Their correct origin is uncertain, until confirmed by evaluation trenching. The significance of effects can currently only be defined as unknown.

### Hedgerow Regulations 1997

- 10.5.35 The majority of hedgerows on site formed parts of a field system pre-dating the Inclosure Acts. Therefore, it is considered that they meet the archaeology and history criteria of the Hedgerow Regulations 1997, as important hedgerows(Criterion 5). Using GIS information matched to rectified tithe map information, the following impacts can be assessed as follows: 34 hedges with a combined total length of 2,674m. The affected portions range from 18 to 227m in length. No hedgerow will be totally removed, so the fieldscape will largely remain intact

### Undiscovered Archaeology

- 10.5.36 There is a high potential that intrusive works on the Scheme may uncover previously unrecognised archaeological deposits. The potential for previously unrecorded archaeology has not been quantified at this stage but is likely to be adverse.

10.5.37 A construction contractor has not yet been appointed to the Scheme. Therefore, additional areas of temporary works that may have an impact such as construction yards, haul roads and borrow pits have not been identified. As these works will be contiguous to the Scheme, a preliminary view can be given once they are identified from the information in the 500m study area. Detailed assessment of any proposed temporary works will be conducted once they are identified.

Table 10.8 Summary of Impact on Assets in the 500m Study Area.

<b>Impact</b>	<b>No.</b>
Major	23
Moderate	6
Minor	2
Negligible	0
No Change	94
<i>Total</i>	<i>125</i>

Table 10.9 Gazetteer of Historical Assets Within 500m of the Scheme, Showing Assessment of Impact and Significance of effects

<b>ID</b>	<b>Type</b>	<b>Date</b>	<b>Significance</b>	<b>Magnitude of Impact</b>	<b>Significance of effects</b>
1	Cropmark	Unknown	Medium	No Change	Neutral
2	Standing stone	Unknown	Medium	No Change	Neutral
3	Burnt Mound	Bronze Age	Medium	No Change	Neutral
4	Cottage	Post medieval	Low	No Change	Neutral
5	Baptist Chapel	Post medieval	Medium	No Change	Neutral
6	Building	Post medieval	Low	No Change	Neutral
7	Quarry	Post medieval	Negligible	No Change	Neutral
8	Quarry	Post medieval	Negligible	No Change	Neutral
9	Burnt mound	Bronze Age	Medium	Moderate	Moderate
10	Quarry	Post medieval	Negligible	No Change	Neutral
11	Dwelling	Post medieval	Low	No Change	Neutral
12	Poorhouse	Post medieval	Low	No Change	Neutral
13	Dwelling	Post medieval	Low	No Change	Neutral
14	Dwelling	Post medieval	Low	No Change	Neutral
15	Cottage	Post medieval	Low	No Change	Neutral
16	Gravel pit	Post medieval	Negligible	No Change	Neutral
17	Blacksmith workshop	Post medieval	Negligible	No Change	Neutral
18	Cottage	Post medieval	Low	No Change	Neutral

<b>ID</b>	<b>Type</b>	<b>Date</b>	<b>Significance</b>	<b>Magnitude of Impact</b>	<b>Significance of effects</b>
19	Burnt mound	Bronze Age	Medium	Moderate	Moderate
20	Burnt mound	Bronze Age	Medium	Moderate	Moderate
21	Building	Post medieval	Low	No Change	Neutral
22	Public House	Post medieval	Low	No Change	Neutral
23	War Memorial	Post medieval	Medium	No Change	Neutral
24	Blacksmith workshop	Post medieval	Low	No Change	Neutral
25	Public House	Post medieval	Low	No Change	Neutral
26	Post Office	Post medieval	Low	No Change	Neutral
27	Gravel pit	Post medieval	Negligible	No Change	Neutral
28	Quarry	Post medieval	Negligible	No Change	Neutral
29	Chapel	Post medieval	Medium	No Change	Neutral
30	Cottage	Post medieval	Low	No Change	Neutral
31	Well	Post medieval	Negligible	No Change	Neutral
32	Quarry	Post medieval	Negligible	No Change	Neutral
33	Building	Post medieval	Low	No Change	Neutral
34	Cottage	Post medieval	Low	No Change	Neutral
35	Promontory Fort	Unknown	Unknown	No Change	Neutral
36	Cottage	Post medieval	Low	Minor	Neutral or Slight
37	Burnt Mound	Bronze Age	Medium	No Change	Neutral
38	Quarry	Post medieval	Negligible	No Change	Neutral

<b>ID</b>	<b>Type</b>	<b>Date</b>	<b>Significance</b>	<b>Magnitude of Impact</b>	<b>Significance of effects</b>
39	Road	Post medieval	Medium	Moderate	Moderate
40	Farmstead	Post medieval	Low	No Change	Neutral
41	Soil marks	Unknown	Unknown	No Change	Neutral
42	Farmstead	Post medieval	Low	No Change	Neutral
43	Farmstead	Post medieval	Low	No Change	Neutral
44	Dwelling	Post medieval	Low	Major	Slight or Moderate
45	Dwelling	Post medieval	Low	Moderate	Slight
46	Building	Post medieval	Low	Moderate	Slight
47	Lodge	Post medieval	Low	No Change	Neutral
48	Burial Ground	Post medieval	Medium	No Change	Neutral
49	Dwelling	Post medieval	Low	No Change	Neutral
50	Quarry	Post medieval	Negligible	No Change	Neutral
51	Gravel pit	Post medieval	Negligible	No Change	Neutral
52	Quarry	Post medieval	Negligible	No Change	Neutral
53	Dwelling	Post medieval	Low	No Change	Neutral
54	Dwelling	Post medieval	Low	No Change	Neutral
55	Dwelling	Post medieval	Low	Major	Slight or Moderate
56	Farmstead	Post medieval	Low	Major	Neutral
57	Old bridge	Post medieval	Low	No Change	Neutral
58	LiDAR Feature	Unknown	Unknown	No Change	Neutral

ID	Type	Date	Significance	Magnitude of Impact	Significance of effects
59	Building	Post medieval	Low	No Change	Neutral
60	Leat (Possible)	Post medieval	Negligible	Major	Slight or Moderate
61	Cropmark	Unknown	Unknown	No Change	Neutral
62	Cropmark	Unknown	Unknown	No Change	Neutral
63	Field System	Medieval?/Post medieval	Medium	Minor	Slight
64	Possible enclosure	Unknown	Unknown	Major	Unknown
65	Possible enclosure	Unknown	Unknown	Major	Unknown
66	Possible enclosure	Unknown	Unknown	Major	Unknown
67	Numerous features	Unknown	Unknown	Major	Unknown
68	Curvilinear feature	Unknown	Unknown	No Change	Neutral
69	Curvilinear feature	Unknown	Unknown	Major	Unknown
70	Multiple features	Unknown	Unknown	Major	Unknown
71	Potential trackway	Unknown	Unknown	Major	Unknown
72	Potential trackway	Unknown	Unknown	Major	Unknown
73	Possible ridge and furrow	Unknown	Unknown	Major	Unknown
74	Linear feature	Unknown	Unknown	Major	Unknown
75	Linear feature	Unknown	Unknown	Major	Unknown
76	Possible burnt area	Unknown	Unknown	Major	Unknown
77	Linear feature	Unknown	Unknown	Major	Unknown
78	Linear feature	Unknown	Unknown	Major	Unknown

<b>ID</b>	<b>Type</b>	<b>Date</b>	<b>Significance</b>	<b>Magnitude of Impact</b>	<b>Significance of effects</b>
79	Linear feature	Unknown	Unknown	Major	Unknown
80	Quarrying area	Unknown	Unknown	Major	Unknown
81	Possible ferrous	Unknown	Unknown	Major	Unknown
82	Possible ferrous	Unknown	Unknown	Major	Unknown
83	Possible ferrous	Unknown	Unknown	Major	Unknown
84	Gwindy Farmhouse with walls and railings to garden	Post medieval	High	No Change	Neutral
85	Old Stable Block at Gwindy	Post medieval	High	No Change	Neutral
86	Homestead	Post medieval	Unknown	No Change	Neutral

## 10.6 Assessment of Potential Operational Effects

### Setting of Designated Sites

- 10.6.1 The likely impacts and consequent effects on heritage assets as a result of the operation of the Scheme are described below, with asset types (scheduled monuments and listed buildings) grouped together.
- 10.6.2 Designated assets within a 5km buffer zone of the borders of the Scheme were assessed for the impact on their settings, using the criteria set out in paragraph 10.3.14. The results show that there are 157 assets in the buffer zone (125 Listed Buildings and 32 Scheduled Ancient Monuments). A large number (40) of Listed Buildings are found in the town of Narberth, which is over 4km from the Scheme limits and are unlikely to be impacted by construction or operation of the Scheme.
- 10.6.3 Nine were deemed to have an impact upon their setting. Four of these assets (Llanddewi Velfrey war memorial, **23**, Ffynnon Baptist Chapel, **5**, Gwindy Farmhouse with walls and railings to garden, **84** and Gwindy Old Stable Block, **85**) are also included in the assets identified in the 500m Scheme study area. The full list is included in Appendix 10.3.

Table 10.10 Distribution in Study Areas of Identified Assets by Designation

Designation	500m Study area	5km buffer zone
Scheduled Ancient Monument	0	32
Listed Building	4	123
Undesignated Asset	121	Not counted

- 10.6.4 The following designated sites have a visual or settings interaction with the Scheme.
- 10.6.5 **5 Ffynnon Chapel LBII 6056.** Ffynnon Baptist chapel was founded in 1720, with the existing building dating to 1832. The building is little changed since then and surrounded by a graveyard with an entrance and pathway to the south. The building is Listed grade II and is of high value to the local community. There is public access to the grounds at all times and inside the building when it is in use.

- 10.6.6 The chapel structure is 28m north of the edge of the current roadway. It is currently highly affected by noise and visibility of passing traffic, especially in winter when the tree belt sheds its leaves. The proposed Scheme will move the road away from the chapel to provide sufficient space to construct a single lane access road, a widening verge for the proposed Scheme and a narrow strip of embankment. The embankment slope will be available for a narrow strip of dense tree and shrub planting to form a visual screen. The setting will change slightly from the current circumstances. There will be an improvement to the approach to the chapel via the front gate, the distance between the chapel and the A40 will be increased and once the proposed planting has established and grown, there will be some screening of views of moving vehicles.
- 10.6.7 Current views from the site show the landscaping belt along the road from the southwest to southeast. The noise of traffic is clearly audible, so difficult to filter out. The final road as laid out by the Scheme will result in a similar setting.
- 10.6.8 As a designated site, the structure is assessed as having a medium value. There will be no physical impact on the structure, or enclosing walls. Given the proximity to the existing road and the potential for landscaping to reduce the impact of the Scheme on the asset, the significance of effects was assessed as being neutral. The impact on setting is also considered to be negligible in view of the existing impact.
- 10.6.9 **23 Llanddewi Velfrey War Memorial LBII 18983.** A memorial to the fallen of the parish of Llanddewi Velfrey in the 1914-18 war. It is reputed to be the first in Pembrokeshire, and was unveiled by Sir Wilfrid Lewis in 1920. The memorial contains a Celtic cross, above local seven names. The memorial is situated at the junction of the A40 and the road to Llanfallteg. The memorial was Listed as a striking example of a memorial to the Great War, in Celtic Revival style. The memorial is publicly accessible at the crossroads.
- 10.6.10 The current views from the site face to the south, opening onto the existing A40, which is right in front of it. The proposed Scheme will be located about 360m to the north of the memorial and down a slope, so will be entirely out of sight.

- 10.6.11 As a designated site, the structure is assessed as having a medium value. There will be no physical impact on the structure. The significance of effects was assessed as being neutral. The impact on setting is also considered to be beneficial as the memorial will be located beside the former A40, now down-rated as an A class road and serving only local traffic.
- 10.6.12 **84** *Gwindy Farmhouse with walls and railings to garden LBII 6541.* This farmhouse carries the initials IM and the date of 1775. The structure is part of a group of farm buildings, all designated as listed buildings. There is no public access. The site is a few metres north of the existing A40 and separated from it by a line of trees that act as a visible barrier.
- 10.6.13 The location is 500m east of the start of the new Scheme, views towards this are concealed by further trees and standing buildings, including Bethel Chapel (29). It is possible that parts of the new road cutting will be glimpsed in profile at a distance of about 750m.
- 10.6.14 As a designated site, the structure is assessed as having a high value. There will be no physical impact on the structure. The significance of effects was assessed as being neutral. The impact on setting is also considered to be negligible. The future effects on setting will continue to be dominated by the existing A40 close to the site. These are principally, perception of road traffic and noise.
- 10.6.15 **85** *Old Stable Block at Gwindy LBII 6542.* Late 18th century stable block and coach-house, the coach-house has a slightly higher roof level but is evidently all of one build. The structure is part of a group of farm buildings, all designated as listed buildings. There is no public access. The site is a few metres north of the existing A40, and separated from it by a line of trees that act as a visible barrier.
- 10.6.16 The location is 500m east of the start of the new project, views towards this are concealed by further trees and standing buildings, including Bethel Chapel (29). It is possible that parts of the new road cutting will be glimpsed in profile at a distance of about 750m.
- 10.6.17 As a designated site, the structure is assessed as having a high value. There will be no physical impact on the structure. The significance of effects was assessed as being neutral. The impact on setting is also considered to be negligible. The future effects on setting will continue

to be dominated by the existing A40 close to the site. These are principally, perception of road traffic and noise.

- 10.6.18 *Glanrhyd House LBII 9729*. A Georgian 2½-storey house of coursed rubble, asbestos-slate roof on brick sawtooth eaves. Probably built by Evan Griffith in the 1770s, contemporary with the adjacent dated 'office' and other outbuildings. Listed for its architectural interest as an 18th century house retaining early character, and as part of a strong group of 18th century house and outbuildings at Glanrhyd. There is no public access. The site is 1.2km to 1.6km north of the proposed Scheme and surrounded by woodland. The existing road is partially visible from the asset, with traffic sounds perceptible at quiet periods.
- 10.6.19 The Scheme will be partially seen from the site showing the new road line and cutting and embankment to the north of Llanddewi Velfrey. This will be visible in an arc south to southeast from Glanrhyd. The view is intermittent with rising ground and large hedge banks with occasional trees acting as screens. Landscaping of the Scheme will reduce the visual impact.
- 10.6.20 As a designated site, the structure is assessed as having a high value. There will be no physical impact on the structure. The significance of effects was assessed as being neutral. The impact on setting is also considered to be negligible.
- 10.6.21 *Offices & Outbuildings to W of Glanrhyd House (also known as The Court House) LBII 9730*. Dated 1779 and built by Evan Griffiths of Glanrhyd, The office is contemporary with the house, a barn of 1778, and cow house. Listed as a well-preserved 18<sup>th</sup> century outbuilding retaining original character and detail, and as part of a strong group of 18<sup>th</sup> century house and outbuildings at Glanrhyd. There is no public access. The site is 1.2km to 1.6km north of the proposed Scheme and surrounded by woodland. The existing road is partially visible from the asset, with traffic sounds perceptible at quiet periods.
- 10.6.22 The Scheme will be partially seen from the site showing the new road line and cutting and embankment to the north of Llanddewi Velfrey. This will be visible in an arc south to south east from Glanrhyd. The view is intermittent with rising ground and large hedge banks with occasional trees acting as screens. Landscaping of the Scheme will reduce the visual impact.

- 10.6.23 The Scheme can be partially seen from the site showing the new road line and cutting and embankment to the north of Llanddewi Velfrey. Visible in an arc south to south east from Glanrhyd. The view is intermittent with rising ground and large hedge banks with occasional trees acting as screens.
- 10.6.24 As a designated site, the structure is assessed as having a high value. There will be no physical impact on the structure. The significance of effects was assessed as being neutral. The impact on setting is also considered to be negligible.
- 10.6.25 There are additional designated elements of Glanrhyd present at this location. They lie to the north of the main buildings and are entirely screened from the Scheme, by the buildings and heavy tree cover (Barn at Glanrhyd LBII 9731, Glanrhyd Farm LBII 15630 and Waterhouse at rear of Glanrhyd House LBII 82473).
- 10.6.26 *Roman Road 300m East of Bryn Farm Road SAM PE472.* The Roman road running west from Carmarthen is scheduled in places. The road is well preserved and measures 150m in length, covering a boggy field on a prominent grass-covered agger measuring circa 10m wide and up to 0.5m high. Trial excavations in 1993/94 showed that the full sequence of a two-phase road construction survives.
- 10.6.27 The monument is of national importance for its potential to enhance our knowledge of Roman military organisation/medieval transport systems. There is no public access. The site is 1.2km to 1.5km north of the proposed Scheme. The Scheme can be partially seen from the site showing the new road line and cutting and embankment to the north of Llanddewi Velfrey. The view is intermittent with rising ground and large hedge banks with occasional trees acting as screens.
- 10.6.28 As a designated site, the structure is assessed as having a high value. There will be no physical impact on the structure. The significance of effects was assessed as being neutral. The impact on setting is also considered to be negligible.
- 10.6.29 *Caerau Gaer Rath SAM PE176.* The monument comprises the remains of an earthwork enclosure. The date or precise nature of the enclosure is unknown, but it is likely to be later prehistoric or medieval. Caerau Gaer is situated on the slight slopes of a hilltop

north of the Afon Marlais and comprises an oval shaped enclosure with its entrance on the west with an annexe to the east side.

- 10.6.30 The monument is of national importance for its potential to enhance our knowledge of later prehistoric defensive organisation and settlement. The site forms an important element within the wider later prehistoric context and within the surrounding landscape. The site is well preserved and retains considerable archaeological potential. There is no public access, although the site can be observed from public footpaths and the minor road to the west.
- 10.6.31 The site is 960m south of the proposed Scheme. The site lies at the crest of a broad flat ridge separated from the Scheme by a wide valley. From the very top of the earthworks, it may be possible to obtain glimpses of the new Scheme, but this view is obstructed by at least four intervening Pembrokeshire hedge banks, each topped by mature trees. As such, the new Scheme will result in visual settings that are very similar with the existing views.
- 10.6.32 As a designated site, the structure is assessed as having a high value. There will be no physical impact on the structure. The significance of effects was assessed as being neutral. The impact on setting is also considered to be negligible.
- 10.6.33 The vast majority of designated sites (scheduled ancient monuments and listed building) identified in the 5km buffer zone will have no views of the Scheme when it is operational, due to hills and increasing distance. There are some sites with a theoretical view of the Scheme. Three SAMs have will have distant views of the Scheme over 1.5km away with many intervening hedge banks and trees, so are considered not to have an impact on their setting (Llangan Church cropmark enclosure CM264, St Canna's Chair inscribed stone, PE148 and Earthwork southeast of Clyn-Derwen, CM065). Three other SAM's were thought to have a potential view of the completed Scheme, but site visits showed that intervening ground and distance prevented any visual impact from the Scheme (Redstone Cross barrows, PE154, Llanddewi Gaer, PE086 and Pengawse Ring Cairn PE390).

Table 10.11 Impact on Setting of Designated Historical Assets

Name	Status	Reference	Setting
War Memorial	LBII	18983	Minor
Gwindy Farmhouse with walls and railings to garden	LBII	6541	Negligible
Old Stable Block at Gwindy	LBII	6542	Negligible
Ffynnon Baptist Chapel	LBII	6056	Negligible
Glanrhyd House	LBII	9729	Negligible
Offices & Outbuildings to W of Glanrhyd House (also known as The Court House)	LBII	9730	Negligible
Roman Road 300m East of Bryn Farm Road	SAM	PE472	Negligible
Caerau Gaer Rath	SAM	PE176	Negligible

## 10.7 Mitigation and Monitoring

- 10.7.1 As described in Section 10.5, specifically with regard to buried archaeological remains, a programme of archaeological evaluation is outlined. This also includes proposals for the archaeological recording of buildings and parts of the field system which would be demolished as part of the Scheme. Depending on the results of the evaluation, there may be a requirement for mitigation recording of archaeological deposits found at these locations.
- 10.7.2 The implementation of this programme of archaeological work will not result in the avoidance or reduction of the potential impacts and effects described above. It would rather serve to 'offset' the adverse nature of the effects through the provision of information which can be disseminated through appropriate media to the widest possible audience.
- 10.7.3 The scale and nature of archaeological evaluation trenching in all areas needs to be fully agreed with the regional curator. Following consideration of the results of the evaluation work, detailed

archaeological mitigation investigation may then be required at some of these locations.

- 10.7.4 A Draft Mitigation Plan is shown in Figure 10.3.
- 10.7.5 **9 Burnt mound.** No evidence is visible for this feature, although it lies in a typical location for such a feature. Further similar features could be located in the vicinity. The geophysical survey was unable to operate in this area due to wet conditions and high undergrowth. Evaluation trenching of the site is required to determine if the asset is located within the impact zone and to determine an appropriate mitigation technique. This may be a form of strip and record excavation as in addition to the burnt stone material, there may be numbers of small isolated features such as pits or stake holes.
- 10.7.6 **19 Burnt mound.** No evidence is visible for this feature, although it lies in a typical location for such a feature. Further similar features could be located in the vicinity. The geophysical survey was unable to function in this area due to wet conditions and high undergrowth. Evaluation trenching of the site is required to determine if the asset is located within the impact zone and to determine an appropriate mitigation technique. This may be a form of strip and record excavation as in addition to the burnt stone material, there may be numbers of small isolated features such as pits or stake holes.
- 10.7.7 **20 Burnt mound.** Evaluation trenching of the site is required to determine if the asset is located within the impact zone and to determine an appropriate mitigation technique. This may be a form of strip and record excavation as in addition to the burnt stone material, there may be numbers of small isolated features such as pits or stake holes.
- 10.7.8 **36 Cottage.** The known extent is outside the Scheme boundary, but it is possible that features related to the site extend into the extent of the Scheme. Further assessment is needed in this area to determine if the Scheme will impact on any part of the site. Due to the location of the site outside the boundary of the Scheme, it is likely that any impact will be slight and measures to ensure the feature is protected can be implemented.

- 10.7.9 **39 Turnpike road.** Any opening of the existing road should be monitored as part of the project watching brief. If features are observed, they should be recorded.
- 10.7.10 **44 Trefangor Cottage.** The structure will require building recording to level 2 standard as a minimum. It is likely that additional recording using 3 dimensional photography to create a scale model will need to be undertaken. Monitoring of demolition and earthmoving in the vicinity of the asset is recommended.
- 10.7.11 **45 Dwelling.** Evaluation by trial trenching in this area to determine if features are present should be considered. The location on the edge of the existing road may make this difficult to undertake intrusive work. Either undertake a strip and record excavation during construction phases, or a watching brief.
- 10.7.12 **46 Building.** Evaluation trenching is needed in this area to determine if features are present. Further action could be a form of strip and record excavation. It appears that construction work in this area will include drainage and landscaping. This could be modified to protect the asset if evidence is present.
- 10.7.13 **55 Cottage and garden.** Further assessment is recommended to determine the extent of the site and location relative to the project design. Following this, the design options for this area should be reviewed to ensure that the asset can be protected.
- 10.7.14 **56 Standing building.** The structure will require building recording to level 2 standard as a minimum. It is likely that additional recording using 3 dimensional photography to create a scale model will need to be undertaken. Monitoring of demolition and earthmoving in the vicinity of the asset is recommended.
- 10.7.15 **60 Boundary.** Evaluation trenching of the asset is recommended. Further action could be a form of strip and record excavation.
- 10.7.16 **63 Field system.** It is recommended that prior to construction the affected portions of the field system, namely the hedge banks and vegetation are recorded. This should also record the nature and construction of the earth banks during the site clearance phase of the construction works.

- 10.7.17 **64-83** *Geophysical survey anomalies*. As all the features lie within the Scheme boundary and will be impacted by construction activities, the scale of impact is assessed as major. The significance of effects can currently only be defined as unknown. A programme of intrusive evaluation trenching is recommended to provide additional information on this group. Further mitigation excavation may be required on some or all, of these depending on results.
- 10.7.18 An archaeological watching brief would be undertaken on construction activity within the Scheme boundary. This may lead to a requirement for further archaeological investigation of any buried archaeological remains that are identified during the watching brief. The watching brief will record any portions of the former turnpike road on the line of the A40 (39). Basic recording of hedgerows, part of the field system (63) will be undertaken as part of the watching brief.
- 10.7.19 The scale and intensity of the watching brief will be determined following the results of the evaluation trenching programme. If this is a thorough characterisation of the nature of subsoil deposits resulting in the majority of archaeological features being identified, then a less intense programme of monitoring may be approved. The scale of this will be agreed in conjunction with the regional curator.
- 10.7.20 As additional construction areas such as site compounds, are identified, archaeological assessment, evaluation or monitoring may be identified as the appropriate action to be undertaken. This will be agreed with the regional curator and implemented by the appointed construction contractor.

## 10.8 Assessment of Effects after Monitoring

- 10.8.1 The proposed mitigation will not result in the avoidance or reduction of the potential impacts and effects described above. Therefore, the magnitude of impacts and significance of effects described in Section 10.5 will remain the same. The assessment of land take, construction and operational effects would therefore remain as reported in these sections.
- 10.8.2 It is possible as details of archaeological sites are identified during the evaluation trenching programme, that changes can be made to the design of the Scheme to reduce damage, or preserve *in situ*, identified

features. If these are identified a programme of monitoring of the effectiveness of this mitigation will be required.

## 10.9 Assessment of Cumulative Impacts

10.9.1 No proposed projects have been identified in the vicinity of the Scheme with a joint impact on historic assets identified in this study. This applies to both physical impact and settings. The proposed extension of the Scheme from Penblewin to Redstone junction will have an impact on some of the assets discussed here, but that will be a direct impact from that project rather than a cumulative effect. One of the geophysical anomalies (**64**) is likely to have additional effects as a wider area will be affected. The nature of this assets is at present unknown, so further work will increase the quality of data available.

## 10.10 Summary of Effects

- 10.10.1 This assessment has identified that the implementation of the Scheme would result in an adverse effect on a number of heritage assets. This results from physical damage to some assets and a limited impact on the visual setting of some assets that are not physically affected.
- 10.10.2 There will be a major impact on 23 assets identified in this study. These are a cottage (**44**), a built structure (**56**) and a possible leat (**60**); in addition, 19 assets identified by the geophysical survey (**64-67** and **69-83**) will have a major impact from the Scheme. The geophysical anomalies at present, have an unknown significance, but they are located within areas that will receive a major impact.
- 10.10.3 Moderate damage will occur at four locations. These are two burnt mounds (**9** and **19**), the site of a cottage (**46**) and the line of the former turnpike road (**39**).
- 10.10.4 Four assets will receive some form of impact of an uncertain nature. The evidence is unclear at present, due to lack of detailed information on the surviving nature of the assets, or the potential for alteration of the design to avoid damage. The assets where the nature of the evidence is unclear are a burnt mound (**20**) and two possible cottage sites (**36** and **45**). A further cottage site (**55**) may be protected if landscape designs can be refined in detailed design to avoid the asset.

- 10.10.5 Seven designated assets will have a negligible impact on setting (**5, 84, 85, LB 9729, LB 9730, SAM PE472 and SAM PE176**). The Llanddewi Velfrey War Memorial (**23**) will have an improved, minor setting impact.

## **10.11 Monitoring**

- 10.11.1 No significant cultural heritage impact that requires future archaeological monitoring after the construction period is ended. Landscape and visual measures will provide mitigation of impacts on the settings of cultural heritage resources in the surrounding study area.