



Wylfa Newydd Project

8.12 A5025 Off-line Highway Improvements sub-CoCP

PINS Reference Number: EN010007

Application Reference Number: 8.12

17 April 2019

Revision 6.0

Examination Deadline 10

Regulation Number: 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Executive Summary

This document forms the A5025 Off-line Highway Improvements sub-Code of Construction Practice (CoCP) for the Wylfa Newydd Development Consent Order (DCO) Project. It sets out the site-specific controls to mitigate the effects of the construction works associated with the construction of the A5025 Off-line Highway Improvements.

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1 Introduction

1.1 General

- 1.1.1 The Wylfa Newydd Development Consent Order (DCO) Project covers a number of discrete locations. As such, the overarching Wylfa Newydd Code of Construction Practice (CoCP) covers project-wide aspects of the Wylfa Newydd DCO Project at all sites in the Order Limits. Sub-CoCPs are provided for each location and underpin the Wylfa Newydd CoCP. Sub-CoCPs provide only the standards and controls relevant to that particular location.
- 1.1.2 This document forms the A5025 Off-line Highway Improvements sub-CoCP for the Wylfa Newydd DCO Project. It sets out the site-specific controls that are to be taken to mitigate the environmental effects of the construction works of the A5025 Off-line Highway Improvements.
- 1.1.3 Figures 1-1 to 1-6 show the areas where works are covered by this sub-CoCP. An overview of the locations of the four sections of the A5025 Off-line Highway Improvements and the Power Station Access Road Junction, as well as the extent of the Order Limits, is shown in figure 1-1. Individual sections are shown on figure 1-2 to figure 1-6. The Power Station Access Road Junction has been included within this sub-CoCP due to the nature of the works associated with it.
- 1.1.4 The A5025 between Valley and the Power Station Site is approximately 16.5km in length and can be broadly described geographically in eight sections. Sections 2, 4, 6 and 8 are the subject of the A5025 On-line Highway Improvements, authorised pursuant to a separate planning permission granted by the Isle of Anglesey County Council (IACC) on 13 July 2018.
- 1.1.5 Sections 1, 3, 5 and 7 and the Power Station Access Road Junction are the subject of the A5025 Off-line Highway Improvements and can be described as follows:
- Section 1 (Valley) (Work No.8 in the Wylfa Newydd (Nuclear Generating Station) Order (Order)) – A5 east of Valley Junction to north of Valley Junction – proposed four-arm roundabout and bypass connecting the A5 with the A5025 to the east of the existing A5/A5025 signalised junction – a length of approximately 0.8km;
 - Section 3 (Llanfachraeth) (Work No.9 in the Order) – north of Llanynghenedl to north of Llanfachraeth – proposed 2km highway to provide a bypass to the east of Llanfachraeth village;
 - Section 5 (Llanfaethlu) (Work No.10 in the Order) – south of Llanfaethlu to north of Llanfaethlu – proposed 1.3km bypass to provide a straighter section of road, where there are two existing substandard bends near the Black Lion public house and through Llanfaethlu;
 - Section 7 (Cefn Coch) (Work No.11 in the Order) – north of Llanrhyddlad to north of Cefn Coch – proposed 1.3km bypass to provide a straighter

section of road, where there are two existing substandard bends in Llanrhwydrus; and

- Power Station Access Road Junction (Work No.1J in the Order) – North of Cefn Coch – proposed roundabout junction linking the proposed Power Station Access Road to the existing A5025 public highway – a length of approximately 0.3km.

1.1.6 The full construction programme for the A5025 Off-line Highway Improvements will be approximately 18 months. Sections 1, 3, 5 and 7 and the Power Station Access Road Junction will be constructed in parallel. The works for section 1 and the Power Station Access Road Junction are expected to take approximately 12 months, whereas for sections 3, 5 and 7 the works are expected to take the full 18 months.

1.1.7 The principal works associated with the construction of the A5025 Off-line Highway Improvements including the Power Station Access Road Junction are as follows:

- site mobilisation and formation of temporary construction compounds at sections 1, 3, 5 and 7;
- setting out of the rolling traffic management for the sections where the A5025 Off-line Highway Improvements tie into the existing A5025;
- temporary diversion or closure of existing Public Rights of Way (PRoWs);
- site clearance of vegetation, topsoil and field boundaries;
- demolition and removal of stone walls;
- reinstatement and/or replacement of boundary features;
- installation of highway drainage infrastructure, formation of swales and surface water management control works;
- works to create or improve kerbs, footways/cycleways, parking arrangements and private means of access;
- earthworks;
- bridge, culvert and underpass construction works;
- carriageway construction;
- landscaping and seeding;
- installation of signage and road markings; and
- the break-up of redundant sections of existing carriageway at sections 1, 3, 5, 7 and the Power Station Access Road Junction which will be covered with topsoil and grass-seeded.

1.1.8 In addition to the works listed above, the following will also be required in section 3 of the A5025 Off-line Highway Improvements:

- excavation of foundations;
- installation of bored piles; and

- construction of a viaduct across two watercourses (Afon Alaw and Afon Llywenan).
- 1.1.9 Site-specific measures to mitigate the effects of the construction works associated with the A5025 Off-line Highway Improvements are detailed within this sub-CoCP. Where the requirements of construction practice are covered adequately by the Wylfa Newydd CoCP, those requirements are not repeated in this sub-CoCP. Therefore, where no site-specific requirements are specified here, reference is made to the Wylfa Newydd CoCP. In the event of a conflict between the Wylfa Newydd CoCP and this sub-CoCP, the commitments in this sub-CoCP prevail.
- 1.1.10 This sub-CoCP sets out the site-specific controls to be complied with, covering the following aspects of the Wylfa Newydd DCO Project construction:
- communications and community and stakeholder liaison;
 - general site management;
 - traffic and transport;
 - public access management;
 - air quality;
 - noise and vibration;
 - waste and materials management (including soils and land contamination);
 - water management;
 - ecology and landscape management; and
 - cultural heritage.
- 1.1.11 This A5025 Off-line Highway Improvements sub-CoCP should be read together with the Wylfa Newydd CoCP to understand the full suite of controls for the A5025 Off-line Highway Improvements sub-CoCP.
- 1.1.12 For the purposes of this sub-CoCP, the term 'Horizon' refers to Horizon Nuclear Power Wylfa Ltd (or any other undertaker to whom the benefit of the Order is transferred to under Article 9 of the Order), its appointed representatives and the appointed construction contractors.
- 1.1.13 Where this sub-CoCP refers to Horizon application documents, the Examination Library reference has been provided. External documentation available in the public domain is referenced in section 13 of this sub-CoCP. Those documents that are 'certified documents' pursuant to Article 76 of the Order and listed in Schedule 18 of the Order are not provided a reference for the purposes of this sub-CoCP.

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Figure 1-1 A5025 Off-line Highway Improvements Overview

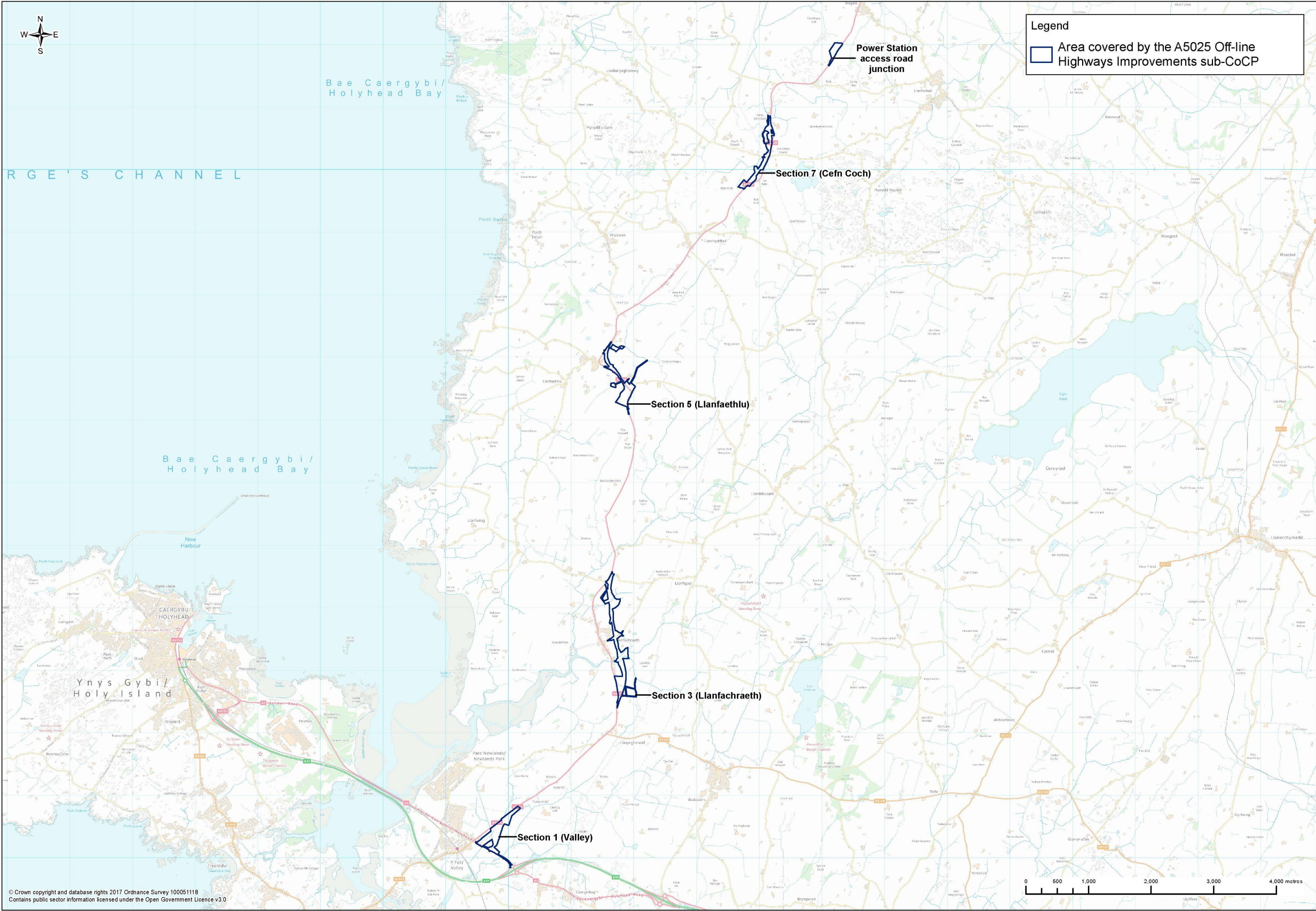


Figure 1-2 A5025 Off-line Highway Improvements Section 1

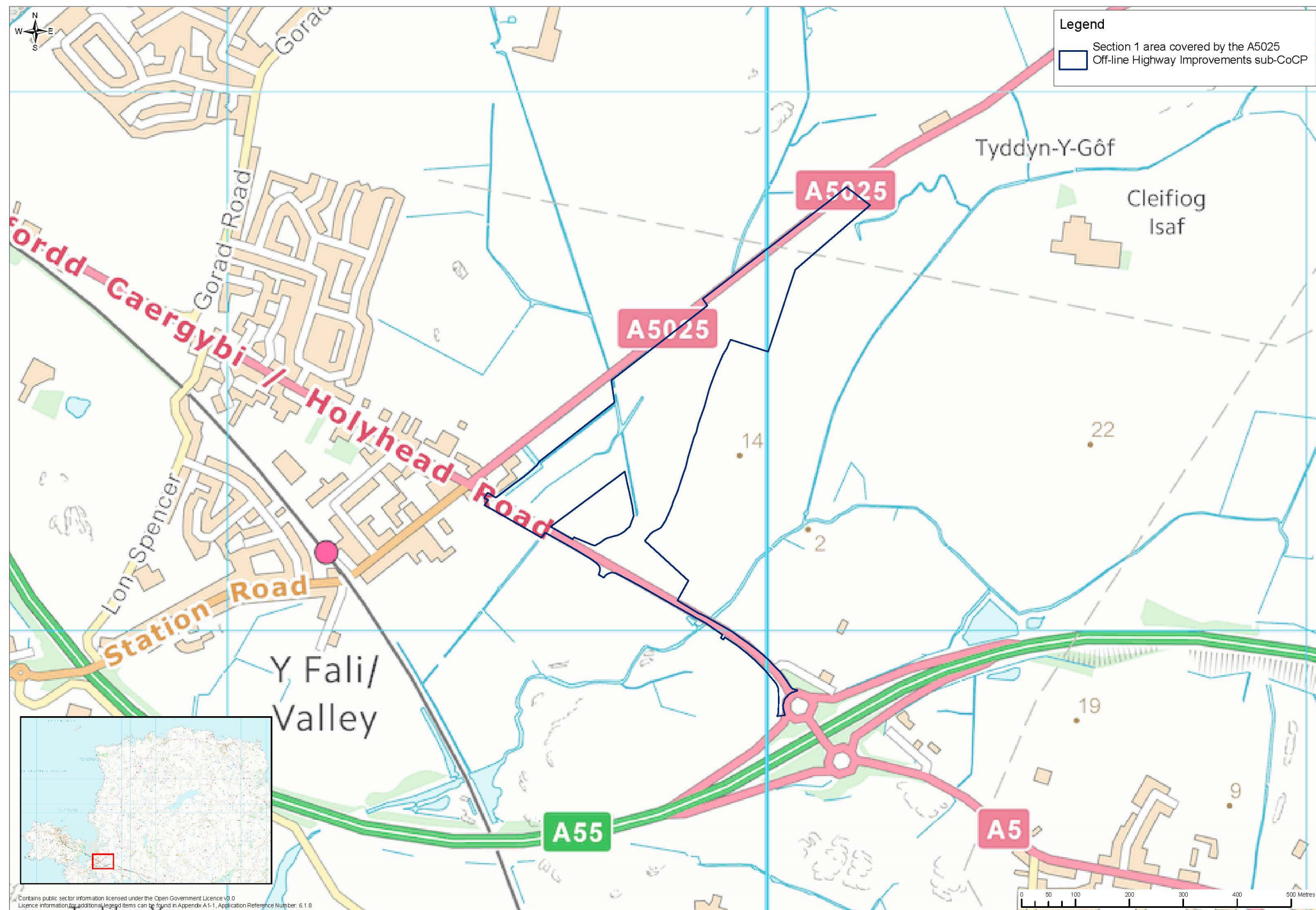


Figure 1-3 A5025 Off-line Highway Improvements Section 3

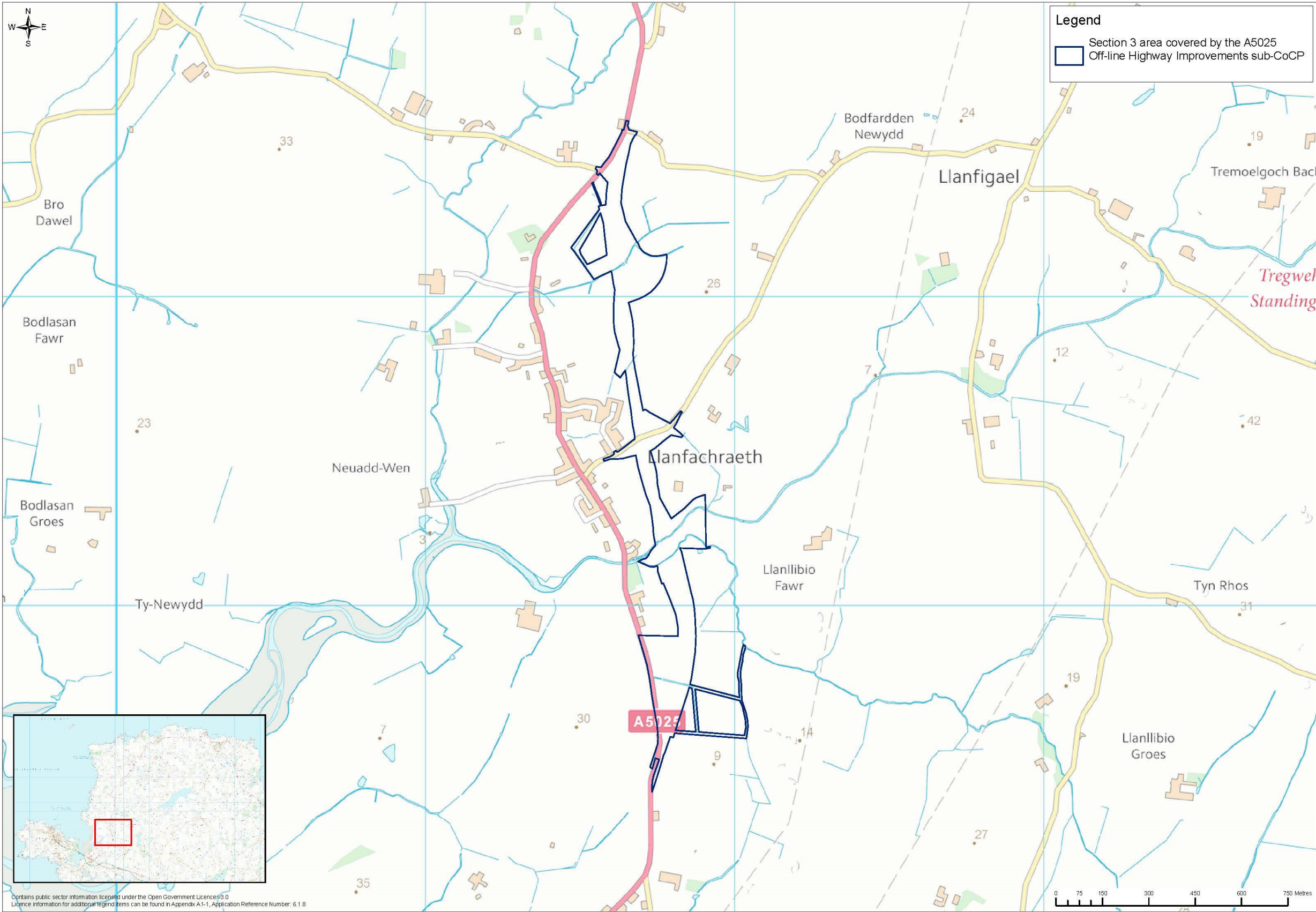


Figure 1-4 A5025 Off-line Highway Improvements Section 5

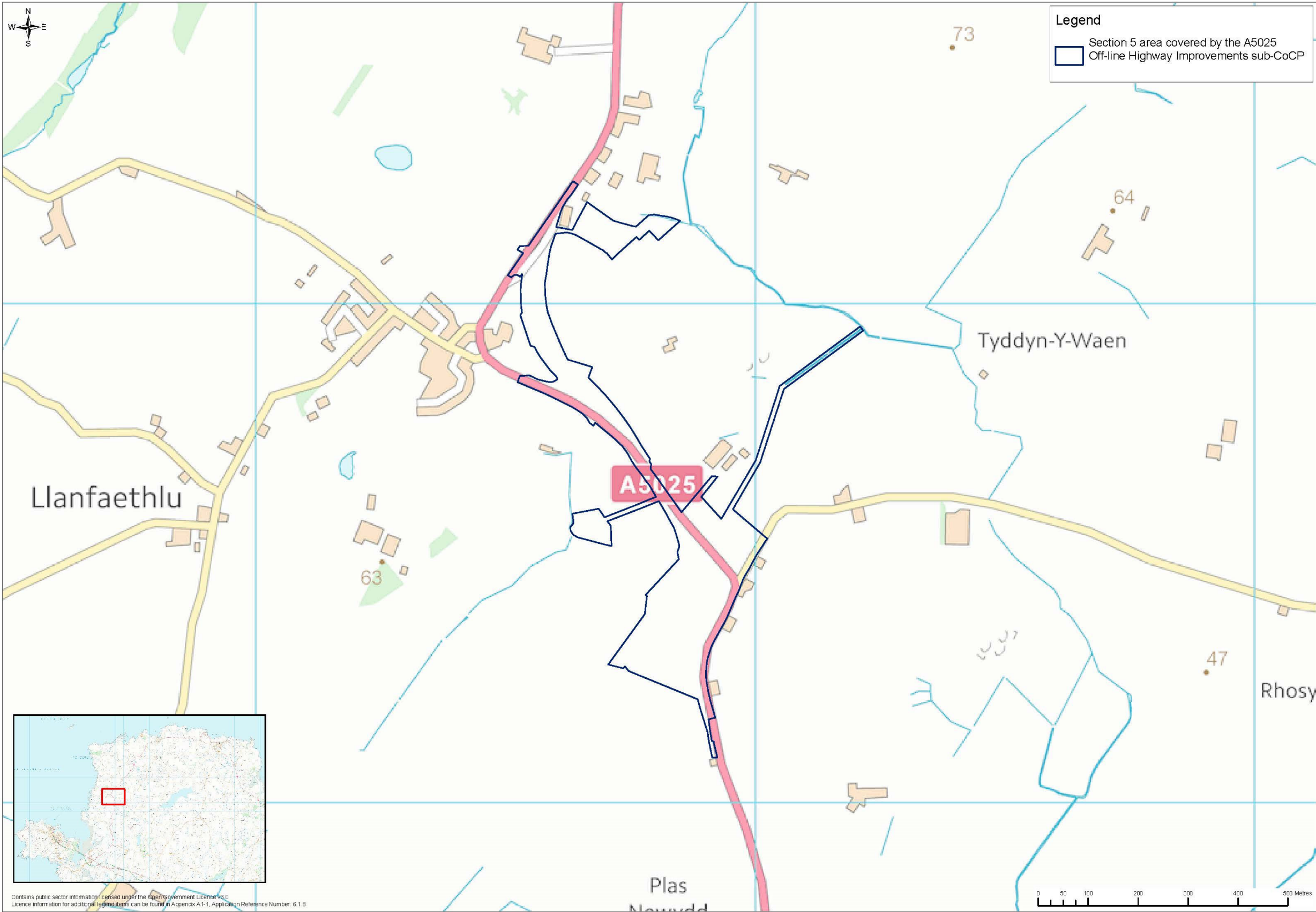


Figure 1-5 A5025 Off-line Highway Improvements Section 7

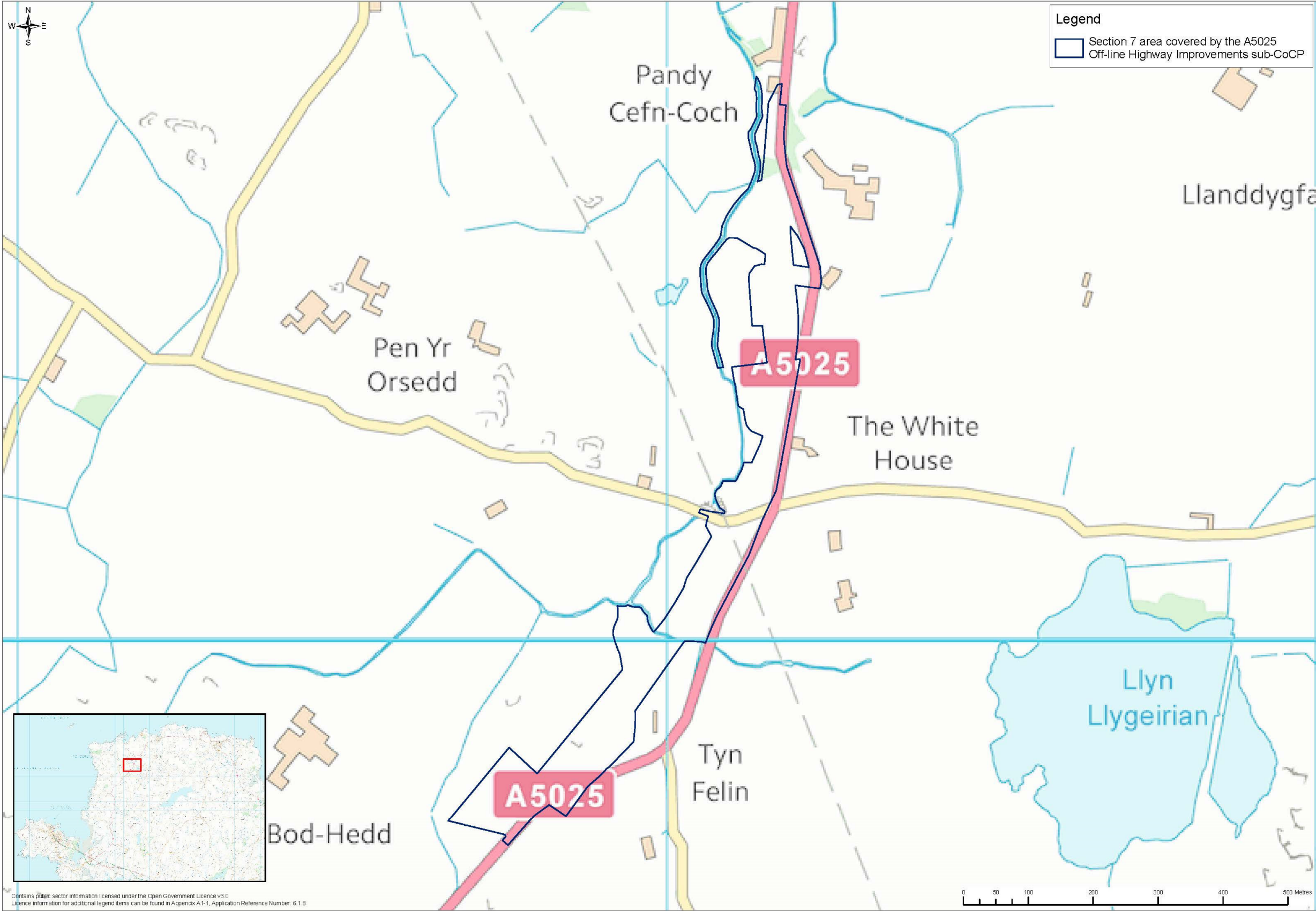
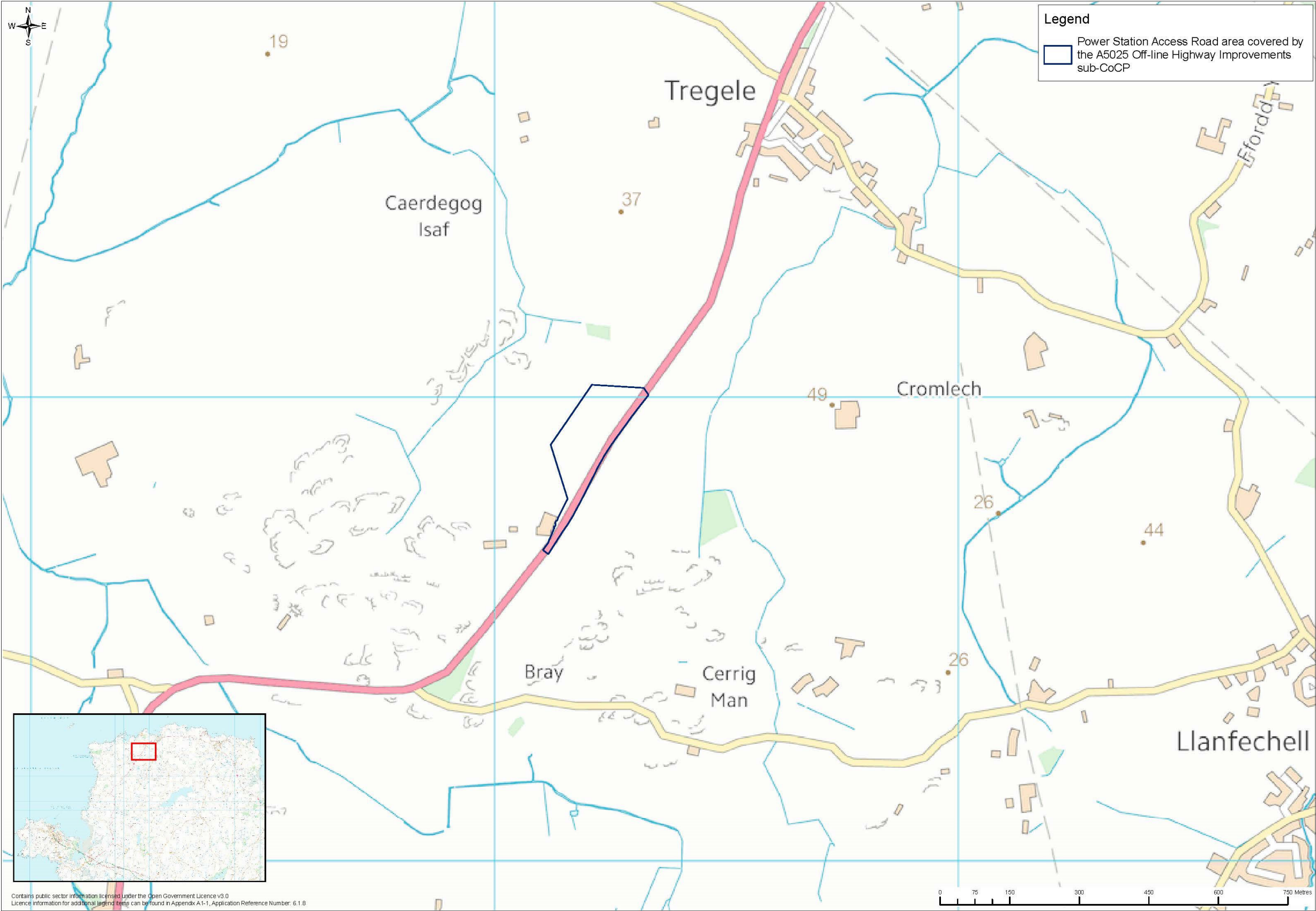


Figure 1-6 A5025 Off-line Highway Improvements Power Station Access Road Junction



2 Approach to environmental management

- 2.1.1 This section is included to maintain the structure of this sub-CoCP in accordance with the Wylfa Newydd CoCP, in order to enable easier cross-referencing between the two documents and other sub-CoCPs. Refer to section 2 of the Wylfa Newydd CoCP for full information on Horizon's approach to environmental management which is consistent across the Wylfa Newydd DCO Project.

3 Communications and community/stakeholder liaison management strategy

3.1 Community and stakeholder liaison

- 3.1.1 Horizon's communications and community/stakeholder liaison management strategy is based on the requirements set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP and the DCO s.106 agreement.
- 3.1.2 The general mitigation controls to be implemented for communications and community/stakeholder liaison are described in section 3 of the Wylfa Newydd CoCP.
- 3.1.3 In addition, the below outlines specific measures to be implemented during the A5025 Off-line Highway Improvements.

3.2 Site-specific communications

- 3.2.1 Horizon will notify occupiers of properties within 100m of the works and owners and occupiers of agricultural land, three months in advance of construction works taking place. Horizon will ensure these receptors are notified of any activities that would cause impacts and disturbance, such as piling and major earthworks at least one week before the start of the activity. Receptors within 100m of the A5025 Off-line Highway Improvements for each section are listed below.
- 3.2.2 Receptors near to section 1 (Valley) are:
 - one residential property located 30m from the section boundary;
 - five agricultural land interests; and
 - Valley Cemetery.
- 3.2.3 Receptors near to section 3 (Llanfachraeth) are:
 - four residential properties located within 20m of the section boundary, including one property within 5m of the site; and
 - seven agricultural land interests.
- 3.2.4 Receptors near to section 5 (Llanfaethlu) are:
 - seven residential properties located within 20m of the section boundary;
 - the Black Lion Inn public house;
 - the grounds of the new primary school in Llanfaethlu, which is located approximately 25m from the boundary of section 5; and
 - eight agricultural land interests.
- 3.2.5 Receptors near to section 7 (Cefn Coch) are:
 - one residential property within 20m of the section boundary; and
 - six agricultural land interests.
- 3.2.6 Receptors near to the Power Station Access Road Junction are:

- one residential property located approximately 70m south of the Power Station Access Road Junction boundary; and
- one agricultural land interest.

3.2.7 In addition to the fencing identified in the Wylfa Newydd CoCP, where construction will take place adjacent to land containing livestock, fencing of working areas will be to a standard adequate for excluding any livestock kept on adjoining land and will be subject to agreement with the landowner.

4 General site management strategy

4.1 General

- 4.1.1 Horizon's site management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 4.1.2 The general mitigation controls to be implemented for site management are described in section 4 of the Wylfa Newydd CoCP.
- 4.1.3 In addition, the measures below outline specific measures to be implemented during the A5025 Off-line Highway Improvements.

4.2 Working hours

- 4.2.1 There will be no construction works at the A5025 Off-line Highway Improvements sites outside of the following working hours in accordance with the daytime normal hours set out in BS 5228-1 *Code of practice for noise and vibration control on construction and open sites* [RD1]:
 - Monday to Friday: 07:00 to 18:00; and
 - Saturday: 07:00 to 13:00.
- 4.2.2 There will be no construction works during the evening and/or night-time periods or during Saturday afternoons, Sundays, Bank Holidays and Public Holidays (which consist of New Year's Day, Good Friday, Easter Monday, Christmas Day and Boxing Day), except as may be provided for in paragraph 4.2.3.
- 4.2.3 If Horizon identifies that construction works are or are likely to be required at the A5025 Off-line Highway Improvements sites outside of the working times specified in 4.2.1 and 4.2.2, Horizon will apply to the IACC for consent under Section 61 of the Control of Pollution Act 1974 to undertake those construction works. No such construction works may be undertaken prior to Section 61 consent being granted by the IACC.

4.3 Site layout

- 4.3.1 Horizon will select a construction compound fence (such as hoarding) which mitigates the visual impact of those structures on the surrounding areas through the selection of visually recessive colours and types, whilst still maintaining a safe and secure barrier.
- 4.3.2 The height of temporary topsoil storage mounds will be restricted to 2m to reduce the potential visual effect and reduce the potential adverse effect on topsoil quality and the suitability for re-use. Such topsoil storage mounds will be managed in accordance with the Wylfa Newydd CoCP.

4.4 Site lighting

- 4.4.1 The four construction compounds will be fitted with temporary lighting. Lighting columns will be fitted around the perimeter of each compound and to the site offices, and will be of a height no greater than 5m to reduce light spill.

- 4.4.2 Lighting around the construction compound buildings will be switched to a motion activated control system (motion sensors) at 18:00, except lighting required for security measures. A two-metre-high construction compound solid fence will further mitigate night-time light trespass once it has been constructed.
- 4.4.3 Light spill during temporary construction activities will be limited, due to the need to maintain safe working conditions. Horizon will use measures such as restricting heights of lighting columns and using directional or down lighting where practicable.
- 4.4.4 Ad hoc directional lighting will be used for construction activities where late working is occasionally unavoidable, for example during late pavement construction activities.
- 4.4.5 Any localised task lighting that is employed pursuant to this provision will be switched off once the relevant construction works for which the localised task lighting is required has ceased for that day in accordance with the working hours prescribed in section 4.2.
- 4.4.6 Construction vehicles, when working during the darker months in the vicinity of residential properties, shall dip their headlights to limit light spill and glare into residential properties, where reasonably practicable and providing this aligns with safe methods of working.

A5025 Off-line Highway Improvements Construction Lighting Scheme

- 4.4.7 Prior to commencement of construction on any part of the A5025 Off-line Highway Improvements, Horizon will prepare and submit for approval an A5025 Off-line Highway Improvements Construction Lighting Scheme in accordance with the Requirements in Schedule 3 and Schedule 4 of the Order. The A5025 Off-line Highway Improvements Construction Lighting Scheme will be prepared in accordance with the principles set out in section 4.5 of the Wylfa Newydd CoCP and section 4.4 of this A5025 Off-line Highway Improvements sub-CoCP. The approved A5025 Off-line Highway Improvements Construction Lighting Scheme (or any approved variations) will be implemented for the duration of the construction of the A5025 Off-line Highway Improvements.

4.5 Site reinstatement

- 4.5.1 On completion of the construction works, any land that was required temporarily for the construction works will be returned to its original condition.
- 4.5.2 Where stone walls were removed as part of the construction works, these will be re-built using the stone from the dismantled stone walls, where practicable.

5 Traffic and transport management strategy

5.1 General

- 5.1.1 Horizon's traffic and transport management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 5.1.2 Details regarding construction workforce travel arrangements, large vehicle controls, Abnormal Indivisible Loads, works within the highway, road cleanliness and monitoring are outlined in section 5 of the Wylfa Newydd CoCP.
- 5.1.3 There are no further site-specific requirements in relation to traffic and transport management for this sub-CoCP.

6 Public access management strategy

6.1 General

- 6.1.1 Horizon's public access management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 6.1.2 The general mitigation controls to be implemented for public access are described in section 6 of the Wylfa Newydd CoCP.
- 6.1.3 Management strategies to reduce the effects of dust and noise on the general amenity of PRowS which will stay open during the construction of the A5025 Off-line Highway Improvements, are detailed in the noise and air quality sections of the Wylfa Newydd CoCP and this sub-CoCP where relevant.
- 6.1.4 In addition, the measures below outline specific measures to be implemented during the A5025 Off-line Highway Improvements.

6.2 Tour de Môn cycle race

- 6.2.1 Horizon will work with the race organisers to ensure that the construction of the A5025 Off-line Highway Improvements will be managed at Llanfachrech and Valley to enable the Tour de Môn cycle race, including provision of necessary access, along the A5025 and the relevant minor roads.

6.3 Works on a Public Right of Way

- 6.3.1 Horizon will provide bilingual signage, prior to the closure and diversion of PRowS, outlining any new or diverted route to be followed, as outlined in the Wylfa Newydd CoCP. All permanent footpath diversions will be clearly delineated.
- 6.3.2 Horizon will provide notification in advance of (and during) the construction works to indicate expected locations and durations of delays to traffic. Notification will be in Welsh and English, and measures may include:
 - roadside signs on the approaches to the affected areas of the A5025;
 - a regularly updated Project website detailing how the A5025 Off-line Highway Improvements are progressing together with the potential disruption along the route; and
 - leaflets sent to specifically affected local communities or distributed as part of community liaison meetings.
- 6.3.3 Access to the PRow at Llanfaethlu will be maintained as far as possible during construction, with any required closures/diversions for construction purposes kept to a minimum.
- 6.3.4 Access across the minor roads which bisect section 7 of the A5025 Off-line Highway Improvements will be provided. This access will be suitable for walkers and cyclists.

- 6.3.5 At appropriate connecting locations, the A5025 Off-line Highway Improvements will ensure connectivity for existing pedestrian footway and cycle routes.
- 6.3.6 During construction of the A5025 Off-line Highway Improvements and the Power Station Access Road, a safe route for pedestrians will be maintained or provided. Traffic management on the A5025 will be suitable to enable pedestrians, cyclists and equestrians to continue to use the road as a linear route.
- 6.3.7 Due to the closure of the side road at Cefn Coch, an appropriate crossing point will be located at the closed side road in order to maintain this link.

7 Air quality management strategy

7.1 General

- 7.1.1 Horizon's air quality management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 7.1.2 The general mitigation controls to be implemented for air quality are described in section 7 of the Wylfa Newydd CoCP.
- 7.1.3 In addition, the measures below outline specific measures to be implemented during the A5025 Off-line Highway Improvements.

7.2 Dust emissions

- 7.2.1 Horizon will adhere to the general dust and air quality monitoring controls detailed in the Wylfa Newydd CoCP.
- 7.2.2 In addition to the measure set out in section 7 of the Wylfa Newydd CoCP, the following measures will also be implemented for the A5025 Off-line Highway Improvements.
 - Earthworks and exposed areas/soil stockpiles will be revegetated to stabilise surfaces as soon as practicable, where appropriate.
 - Where it is not possible to revegetate or cover with topsoil, as soon as practicable, alternative methods of dust suppression will be used.
 - Where practicable, soil cover will only be removed in small areas during work and not all at once.
 - On-site haul routes will be inspected for integrity and any necessary repairs will be instigated to the surface as soon as reasonably practicable.
 - Hard-surfaced haul routes will be installed, where practicable and will be damped down with fixed or mobile sprinkler systems, or mobile water bowzers, and regularly cleaned.
 - An adequate area of hard-surfaced road between the wheel-wash facility and the site exit will be provided, wherever site size and layout permits.
 - Horizon will avoid explosive blasting, using appropriate manual or mechanical alternatives.
- 7.2.3 Horizon will undertake dust deposition monitoring at two locations at the boundaries of each of the sections of the A5025 Off-line Highway Improvements close to the nearest sensitive human receptors, apart from the Power Station Access Road Junction, where only one location will be required.
- 7.2.4 Being retrospective, the dust deposition monitoring will form a secondary control mechanism to the primary monitoring control mechanisms (i.e. regular on-site and off-site inspection, continuous real-time monitoring of PM₁₀ (section 5 (Llanfaethlu) only) and associated amber and red triggers, recording of dust complaints and the subsequent responses to any issues identified by these processes) and will be used to:

- provide a quantification of the dust deposition to support the primary monitoring controls and good practice dust mitigation and control measures;
- assist in identifying specific work areas or processes where refinements are required to the working practices and dust controls;
- corroborate dust complaints which occurred during the sampling period; and
- understand if there are smaller or more gradual longer-term increases in dust deposition which may lead to loss of amenity and result in complaints.

7.2.5 The following checks and reviews will be implemented the Site Director following advice of the Environmental Management Team once the dust deposition data have been received from the laboratory, collated and an exceedance of the amber or red trigger identified:

- check the observations in the laboratory test report for anything unusual about the sample which indicates it may not be valid;
- review the on-site and off-site visual inspection records to check if these identified any visible dust emissions from site activities or any noticeable dust deposition at off-site locations, and correlate these to the monitoring location(s) with the dust deposition trigger exceedance(s);
- review the log to check if there were any PM₁₀ alerts during the sampling period (section 5 (Llanfaethlu) only);
- if there were PM₁₀ alerts, note which monitoring stations and if they are the same as the monitoring location(s) with the dust deposition trigger exceedance(s);
- review the complaints log to check if there were complaints of dust during the sampling period and if these are in areas represented by the monitoring location(s) (or downwind of these areas) with the dust deposition trigger exceedance(s);
- review the actions undertaken in response to the visual inspections, PM₁₀ alerts (section 5 (Llanfaethlu) only) and dust complaints and the specific outcomes of those actions;
- if needed, review the meteorological conditions for the sampling period (e.g. wind speed and direction, rainfall and general observations) and if there were weather conditions which could potentially increase dust emissions from the site (e.g. very dry conditions with high wind speeds);
- record the outcome of the above review, for example using the following options (other outcomes are possible):
 - another localised or regional source was the likely cause of the elevated dust deposition measurements – no further action;
 - site activities or sources were the likely cause of the elevated dust deposition measurements;

- the measured elevated dust deposition rate(s) was likely due to specific site activities or sources which were identified via the primary monitoring control mechanisms (i.e. visual inspections, PM₁₀ alerts or dust complaints) and was addressed at the time of occurrence;
 - there were no obvious or discernible site activities or sources which were identified via the primary monitoring control mechanisms (i.e. there were no visual inspections, PM₁₀ alerts or dust complaints which highlighted the potential for elevated dust deposition rates at or close to the monitoring locations which recorded the elevated dust deposition rates).
- 7.2.6 The IACC will be informed of the outcome of any review undertaken in accordance with paragraph 7.2.5. If required, further discussions would be arranged with the IACC to review existing and future site operations, as well as agree the extent of further review or actions. This would be informed by consideration of key statistics such as the trend in the measured dust deposition rates, the trend or pattern of complaints in relation to site operations (if any) or other related metrics or information which could inform the review process (e.g. the proposed schedule of works and activity levels in the areas closest to the measured elevated dust deposition rates, the trend in long-term particulate concentrations).
- 7.2.7 Horizon will undertake continuous monitoring of particulates (total particulates, PM₁₀ and PM_{2.5}) using an Osiris optical particulate analyser in the vicinity of section 5. The location of this monitoring will be at the boundary of the construction site closest to sensitive human receptors, or at a suitable off-site location likely to be either the nearby residential properties or at Llanfaethlu Primary School. Horizon will determine the exact location of the monitoring in agreement with the IACC.
- 7.2.8 The particulate monitoring will commence prior to any construction works at section 5 and continue until all the construction works are complete. Baseline monitoring will be undertaken at least three months before work commences on site.
- 7.2.9 Table 7-1 sets out the proposed real-time triggers for PM₁₀ concentrations which would be used to initiate action by Horizon. These will be used to control long-term increases in particulate concentrations as far as reasonably practicable and prevent exceedances of the relevant Air Quality Objectives (AQOs).

Table 7-1 Real time triggers for dust control based on PM₁₀ concentrations

Averaging period	Real-time PM ₁₀ trigger concentration (µg/m ³)			Notes
	Amber	Red	Black	
One-hour average	100	200	N/A	Used to identify large short-term spikes in particulate concentrations from potential dust emission sources or events on site so that these can be controlled as soon as possible.

Averaging period	Real-time PM ₁₀ trigger concentration (µg/m ³)			Notes
	Amber	Red	Black	
24-hour average	30	45	50 (AQO)	Used to track and manage compliance with the 24-hour mean AQO and aid in the identification of ongoing but lower level dust emissions not identified using the one-hour average trigger. Based on the calculation of the average concentration commencing at midnight each night and requiring a minimum of six hours (i.e. if the average concentration by 6am or any time after that exceeds 30µg/m ³ then an amber alert would be triggered). The calculation of the average concentration would reset at midnight each night (in accordance with the measurement of 24-hour means for compliance with the AQO). Black is used to identify if there has been a measured exceedance of the AQO (i.e. the average concentration calculated for the full 24-hour period starting and ending at midnight was greater than 50µg/m ³).

7.2.10 The system will be set up to issue alerts to key staff members should one of the real-time amber or red trigger concentrations be exceeded. An agreed communication protocol will be set up whereby Horizon contacts the IACC once initial investigations have been undertaken to identify if the trigger was exceeded due to site activities or a wider regional issue or other local source.

7.2.11 Should an amber or red PM₁₀ real-time trigger level be exceeded, the following initial actions will be implemented by the Site Director following advice of the Environmental Management Team.

- The concentrations from the monitoring station (and other operating parameters) will be initially reviewed to check that the monitoring station was not malfunctioning, and the recorded concentration was valid. If valid, the investigation will continue as below.
- The concentrations at the other monitoring stations at the WNDA will be compared to determine if the exceedance was caused by a regional increase in PM₁₀ concentrations. The data for other monitoring stations on Anglesey and in north Wales would also be reviewed on the Air Quality in Wales website (<https://airquality.gov.wales/>).
- The meteorological conditions for the preceding hours (e.g. wind speed and direction) will be reviewed to determine if the wind direction is blowing from section 5 towards the monitoring station or if the wind is blowing from an off-site direction.
- Record the outcome of the above reviews and initiate the next steps based on the following outcomes:

- site activities or sources are the likely cause of the elevated PM₁₀ concentrations; or
- it is a wider regional increase in PM₁₀ concentrations or another localised source causing the trigger exceedance.

7.2.12 If site activities are identified as the cause of the exceedance of the trigger levels, the following actions will be undertaken.

- The IACC will be informed that a trigger has been exceeded due to site activities and investigative works/corrective actions are under way.
- Wind direction will be reviewed in more detail to identify the likely on-site sources or specific work areas.
- The relevant site team(s) working in the likely work area(s) will be informed and a visual inspection of the activities will be carried out to identify or confirm the source(s) of dust emissions.
- The specific site works and current mitigation measures will be reviewed and further action taken. Depending on the source(s), this would involve:
 - applying additional dust suppression, for example, increasing the frequency of water application to the haul roads to damp these down, continuous spraying of water at working areas and aggregate stockpiles, using coagulant to bind particles on dirt tracks/roads, setting up additional fixed or mobile water sprays;
 - altering working methods such as reducing the number of plant or dump trucks working in the area, reducing the speed of vehicles on haul roads or travelling in working areas, temporarily moving working areas to alternative locations, for example, working on a different area of section 5; and
 - implementing lower speed limits for road traffic and wetting of site access roads would also be undertaken where site access roads are identified sources.
- Visual inspection will be undertaken by the site team(s) and the monitoring data will continue to be reviewed to check the effectiveness of the actions.
- Should the concentrations continue to increase and approach the red trigger, or if the red trigger is exceeded, more stringent measures will be considered, including temporary suspension of the specific activity or activities identified as causing the dust emissions.
- The IACC will be kept informed of progress at appropriate intervals as necessary, and dependent on the scale of the trigger exceedance or amber/red status.

7.2.13 The measures set out above would continue until the measured one-hour average concentrations drop to below the one-hour average amber trigger level for two consecutive periods, at which point the issue is considered to be resolved. On resolution of the issue, a short update can be provided to the IACC in an agreed format summarising the responses and outcome (e.g. in a

short email or text message format). For the 24-hour average trigger, the aim of the measures will be to prevent the average concentration continuing to increase towards the AQO value of $50\mu\text{g}/\text{m}^3$. Once a trigger has been exceeded due to site activities and measures have been implemented, the 24-hour average concentrations will be tracked on an hourly basis to determine the effectiveness of the measures.

- 7.2.14 The amber and red trigger levels for PM_{10} may be adjusted during the construction works in agreement with the IACC following review of the effectiveness of the thresholds to indicate the potential for adverse effects at off-site locations or if there is a high level of alerts being caused by external sources. The subsequent initial actions, investigative or corrective actions and communication protocols may also be adjusted based on operating experience and effectiveness (in agreement with the IACC).
- 7.2.15 All exceedances of the PM_{10} trigger levels, responses and outcomes will be recorded.

7.3 Air quality reporting and compliance

- 7.3.1 Horizon will provide monthly air quality monitoring reports to the IACC and Natural Resources Wales (NRW). These reports will contain a summary of the monitoring results and key statistics for the monitoring period, and include a summary of the amber, red or black trigger exceedances during the monitoring period, number and type of complaints received and a summary of actions taken to resolve any issues. The report will also be made available online to be viewed by other parties and members of the public in line with the Wylfa Newydd engagement framework – see the Wylfa Newydd CoCP.
- 7.3.2 The frequency of reporting required in accordance with paragraph 7.3.1 will be kept under review with the IACC and NRW and may reduce in frequency based on the potential for adverse air quality effects or if the monitoring data, including visual inspections and complaints data, support this.
- 7.3.3 Horizon will adopt the longer-term compliance targets for comparison of the air quality monitoring data. These are separate to the short-term real-time amber and red triggers used to identify site sources, activities or processes, and implement further mitigation or measures to reduce emissions. These are based on compliance with the AQOs and are set out in 0.

Table 7-2 Compliance targets

Pollutant	Averaging period	Compliance target	Notes
PM ₁₀	Annual mean	40 (AQO)	
PM _{2.5}		25 (AQO)	
PM ₁₀	24-hour mean	50 (AQO)	The AQO permits 35 exceedances of the 24-hour mean concentration of 50µg/m ³ per calendar year

- 7.3.4 The measured average concentration will be recorded and tracked against the compliance targets as each calendar year progresses (for the annual mean targets, the calculation of the annual mean would only be valid once sufficient data have been recorded). It is proposed that annualising of the data would be carried out once three months of data have been recorded in each calendar year (i.e. data from 01 January to 31 March) and updated on a monthly basis for the remainder of the year. Annualising of the data to predict the annual mean concentration at each monitoring station will follow the suggested approach set out in relevant guidance [RD2]. Tracking of the annual mean concentrations against the compliance targets will commence from 01 April in each calendar year.
- 7.3.5 The projected or measured annual mean concentrations and number of exceedances of the 24-hour mean PM₁₀ AQO value, respectively, will be included in the monthly air quality monitoring reports provided to the IACC and NRW in accordance with paragraph 7.3.1.

8 Noise and vibration management strategy

8.1 General

- 8.1.1 Horizon's noise and vibration management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 8.1.2 The general mitigation controls to be implemented for noise and vibration are described in section 8 of the Wylfa Newydd CoCP.
- 8.1.3 In addition, the measures below outline specific measures to be implemented during the A5025 Off-line Highway Improvements.

8.2 Noise and vibration control measures

- 8.2.1 Horizon will undertake a vibration risk assessment as part of the Section 61 application for any construction activity involving vibratory or impact equipment (such as vibratory rollers) to be used at the A5025 Off-line Highway Improvements. This assessment will establish safe working distances for receptors in relation to construction vibration. This will ensure that any equipment that is identified as having potentially adverse vibration effects can be located sufficiently away from any sensitive receptors, so that any effects on such receptors can be reduced to negligible. Where works are required within the safe working distances, alternative equipment or working methods will be investigated and vibration levels will be reduced to the greatest extent practicable. The Section 61 applications will also describe appropriate vibration monitoring to be carried out at the closest receptors to determine the success of the requirements. Where adopted alternative equipment and working methods still result in significant effects on sensitive receptors, respite periods will be considered.
- 8.2.2 The use of a hydraulic breaker will be required for the construction of the A5025 Off-line Highway Improvements. Horizon will implement mitigation measures to ensure that quiet plant and techniques are used in order to reduce noise emissions. Mitigation measures will be implemented to ensure that noise emissions experienced at the nearest existing noise-sensitive receptor, from the use of the hydraulic breaker, are reduced by 10dB(A) from those assumed in the initial noise modelling (as detailed in Appendix G6-01, [APP-321]). This could be achieved by use of a temporary mobile barrier, selection of quieter plant or alteration of working methods. The application for prior consent under Section 61 of the Control of Pollution Act 1974 to be submitted to the IACC will include a noise assessment and demonstrate that Best Practical Means have been employed.
- 8.2.3 Breakup of road surfacing and the surfacing of the road will not occur concurrently on the same stretch of road.

8.3 Noise and vibration monitoring

- 8.3.1 Construction noise and vibration monitoring controls for the A5025 Off-line Highway Improvements, including the locations and proposed programme for

monitoring, will be set out in the Section 61 application under Section 61 of the Control of Pollution Act 1974, which will be submitted to the IACC for approval prior to commencing construction.

8.4 Section 61 applications

- 8.4.1 The general requirements for submitting Section 61 applications are described in section 8 of the Wylfa Newydd CoCP. There are no further site-specific controls in relation to submitting Section 61 applications for this sub-CoCP.

9 Waste and materials management strategy, including soils and land contamination

9.1 General

- 9.1.1 Horizon's waste and materials management strategy (including soils and land contamination) is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 9.1.2 The general mitigation controls to be implemented for waste and materials are described in section 9 of the Wylfa Newydd CoCP.
- 9.1.3 In addition, the measure below outlines a specific measure to be implemented during construction of the A5025 Off-line Highway Improvements.

9.2 Site specific soil management

- 9.2.1 Topsoil and subsoil stripped from the flood compensation area (as per controls set out in section 9.5 of the Wylfa Newydd CoCP) will be reinstated to the area following excavation of underlying geology to lower the landform.

10 Water management strategy

10.1 General

- 10.1.1 Horizon's water management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 10.1.2 The general mitigation controls to be implemented for water management are described in section 10 of the Wylfa Newydd CoCP.
- 10.1.3 In addition, the measures below outline specific measures to be implemented during construction of the A5025 Off-line Highway Improvements.

10.2 Protection of watercourses

- 10.2.1 Water supplies for livestock situated within agricultural land adjacent to the A5025 Off-line Highway Improvements will be identified by Horizon prior to the commencement of construction. Where supplies are lost or access is compromised by any construction works, temporary and/or permanent alternative supplies will be provided by Horizon as agreed with the landowner/occupier.
- 10.2.2 A natural bedrock cascade is present immediately downstream of the road crossing to Pen-yr-orsedd on the Afon Cafnan. There is a risk that construction of a culvert within the riverbed, which would require removal of a section of this cascade, could result in further damage to the in-river cascade features that do not require removal. Horizon will follow the protective measures outlined in the Wylfa Newydd CoCP to reduce the extent of the area that is likely to be damaged, including an appropriate working corridor to reduce the extent of area likely to be damaged.

10.3 Site drainage

- 10.3.1 Horizon will undertake pre-construction drainage surveys to identify the existing field drainage and therefore identify any potential for the construction work to impact upon that drainage. In doing so, Horizon will identify possible mitigation measures that could be put in place if required, to reduce the risk of damage or disturbance to these drainage systems.
- 10.3.2 Repairing and reinstatement of drains affected by construction will be agreed with the landowner/occupier to ensure that drainage capability is maintained and any risk of flooding is not exacerbated.

10.4 Control of pollution

Surface water

- 10.4.1 During construction, Horizon will maintain, as far as practicable, 15m vegetated buffer strips either side of main rivers and ordinary watercourses, apart from Afon Alaw which will have an 8m buffer as agreed with NRW. Buffer strips will not be practicable where structures are required, such as culverts, outfalls and the viaduct over the Afon Alaw and Afon Llywenan in

section 3. The vegetated buffers will reduce the potential for fine sediment and pollutants to enter the watercourses and mitigate effects on water quality and fluvial geomorphology on site and downstream.

Groundwater

- 10.4.2 Horizon will undertake a pre-construction monitoring survey at the private water supply at Erw Goch and continue to monitor that water supply on a monthly basis throughout the duration of construction at section 3. If a change in the availability or quality of the water supply is identified, Horizon will put in place measures to reinstate the private water supply to the quality and availability of pre-construction levels.

10.5 Flooding

- 10.5.1 Floodplain compensatory storage will not impact on the highway drainage scheme. Appropriate design of compensation flood storage area will be undertaken and agreements with key stakeholders and landowners will be implemented.

11 Ecology and landscape management strategy

11.1 General

- 11.1.1 Horizon's ecology and landscape management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 11.1.2 The general mitigation controls to be implemented for ecology and landscape management are described in section 11 of the Wylfa Newydd CoCP.
- 11.1.3 In addition, the measures below outline specific measures to be implemented during construction of the A5025 Off-line Highway Improvements.

11.2 Badger

- 11.2.1 Pre-construction surveys will be undertaken within 50m of any boundary features that need to be removed prior to the start of site clearance in order to identify if any badger setts are present. The survey timing will be such that, if a badger sett is recorded, sufficient time will be available to allow for a development licence to be granted, and subsequent sett closure to be completed before site clearance is scheduled to commence.
- 11.2.2 If an active badger sett is discovered in close proximity to an area that is required for construction during the construction period, work will cease in that area until:
 - a licence to close the sett is obtained from NRW; or
 - depending on the nature of the work, its proximity to a sett and the type of sett, Horizon is able to identify alternative methods, i.e. the establishment of working buffer zones, to mitigate any disturbance to badgers or avoid damage to the sett, therefore avoiding the requirement to obtain a development licence. These works will be supervised by an Ecological Clerk of Works (ECoW).

11.3 Great crested newt

- 11.3.1 Horizon's ECoW will conduct pre-construction great crested newt surveys in order to identify the great crested newt population size for the application of a European Protected Species Mitigation Licence.
- 11.3.2 Following great crested newt translocation, the following monitoring surveys will be conducted:
 - annual Habitat Suitability Index surveys will be undertaken for 21 years, following the method developed by Oldham *et al.* [RD3]; and
 - two torch counts will be undertaken during the appropriate season annually:
 - for 10 years following translocation; and

- every other year for the next 11 years (21 years in total).

11.4 Reptiles

11.4.1 Pre-construction surveys will be carried out under the supervision of an ECoW. Dependent on the results of those surveys, one or more of the following three approaches will be employed which are in line with relevant good practice guidance [RD4]:

- active trapping and translocation of individuals (likely to be employed in areas of high-quality reptile habitat, and known hotspots for reptiles);
- destructive search of habitats by an ECoW (likely to occur in complex habitats such as drystone walls and cloddiau, and in high quality reptile habitat); or
- supervision of habitat clearance by an ECoW.

11.5 Bats

11.5.1 Pre-construction surveys will be carried out on trees to be felled. An inspection of all trees requiring felling would be carried out by Horizon to determine whether or not they were being used, or were likely to have been used, by bats for roosting. These surveys would be carried out eight to 10 weeks prior to the site clearance activities to allow sufficient time for a European Protected Species Mitigation Licence to be sought, if required. If any roosts are found during the surveys, bats would be captured and excluded from roosts under licence.

11.5.2 Tree felling will be timed to avoid sensitive lifecycle periods for bats (hibernation and maternity periods), if roosts are found to be present in the trees to be removed. Prior to felling these trees, Horizon will install bat boxes on the retained trees within the Order Limits of this section to mitigate for the loss of potential roost features. A minimum of three bat boxes will be provided for every 'high' or 'moderate' category tree to be felled. These bat boxes will cover a range of designs including maternity boxes, hibernation boxes and boxes designed for crevice-dwelling species.

11.6 Otter

11.6.1 No otter holts or resting places were recorded within the extent of the A5025 Off-line Highway Improvements construction working area. There is a slight risk that otters could create a holt during the intervening period before construction commences. Therefore, pre-construction otter surveys will be undertaken by Horizon in advance of any site clearance works in order to identify the presence of otter. If any lying up or holt sites are identified within the construction working area, a European Protected Species Mitigation Licence will be required.

11.6.2 As advised in paragraph 10.4.1, Horizon will maintain an 8m buffer zone for Afon Alaw, and 15m buffer zone for all other watercourses, where the banks would be kept free of construction equipment to allow passage of otter.

11.7 Water vole

- 11.7.1 Pre-construction water vole surveys will be undertaken on all watercourses and any other suitable habitat crossed by the A5025 Off-line Highway Improvements in order to identify the presence of water vole.
- 11.7.2 If required, avoidance measures will involve the micro-siting of works to not disturb places of water vole shelter or refuge. Should this not be possible, NRW will be consulted with regard to the need to obtain a Conservation Licence to allow works to go ahead.

11.8 Landscape planting

- 11.8.1 Planting is to be established as close to the completion of highway works as possible, in the next available planting/seeding season, to reduce the amount of time bare earth is visible and enable establishment of vegetation.
- 11.8.2 A landscape management strategy will be implemented for both hard and soft landscaping for a period of five years (excluding third party damage) in accordance with the Requirements in the Order, following the completion of the works, to ensure successful establishment of proposed landscaping and long-term viability of planting. In the event that these inspections identify that planting has not established, replacement planting on a like-for-like basis will be undertaken at the first available planting season.
- 11.8.3 The following landscape management techniques will be used as appropriate:
- grassland – grass cutting, weed control and litter collection;
 - trees and shrub blocks – coppicing, pruning, thinning, felling, treatment of arisings, weed control and inspections/removal of tree stakes and shelters;
 - hedgerows – pruning, hedge cutting, weed control, treatment of arisings, replant gaps, accommodate trees when cutting and inspection/removal of tree stakes;
 - individual trees – pruning, weed control and inspection/removal of tree stakes; and
 - water feature planting – weed control.

11.9 Landscape reinstatement

- 11.9.1 On completion of works, any land required temporarily for construction works will be returned to its original condition.
- 11.9.2 Where boundary features (e.g. fences, walls and hedges) require temporary or permanent alteration to allow construction, these will be reinstated following completion of construction works with appropriate materials to provide a secure boundary in agreement with the landowner.

11.10 Trees and hedgerows

- 11.10.1 Prior to commencement of construction on any part of the A5025 Off-line Highway Improvements, existing tree and hedgerow surveys for that part of the A5025 Off-line Highway Improvements, within appendix G10-7 of the Environmental Statement [APP-342] will be reviewed and if necessary, updated in accordance with BS 5837:2012 [RD5].

12 Cultural heritage management strategy

12.1 General

- 12.1.1 Horizon's cultural heritage management strategy is based on the controls set out in the Wylfa Newydd CoCP and any further controls set out in this sub-CoCP.
- 12.1.2 The general mitigation controls to be implemented for cultural heritage are described in section 12 of the Wylfa Newydd CoCP.
- 12.1.3 There is the potential that any unknown archaeological remains that may be present within previously undisturbed areas of the A5025 Off-line Highway Improvements will be impacted by construction. Effects on any such archaeological remains that may be present will be mitigated through pre-construction archaeological surveys, as outlined in the Wylfa Newydd CoCP.

12.2 Site-specific mitigation

Disused lime kiln (Asset 153)

- 12.2.1 The disused lime kiln located to the west of the existing A5025 (Asset 153) in section 5 will be protected from accidental damage by the installation of suitable exclusion fencing before construction commences in that area. The exclusion fencing will remain in place for the duration of all construction activities immediately adjacent to this asset.

A5025 Off-line Highway Improvements Archaeological Mitigation Scheme

- 12.2.2 Prior to commencement of the A5025 Off-line Highway Improvements, Horizon will prepare and submit for approval an A5025 Off-line Highway Improvements Archaeological Mitigation Scheme (including a Written Scheme of Investigation) in accordance with the Requirements in Schedule 3 and Schedule 4 of the Order. The A5025 Off-line Highway Improvements Archaeological Mitigation Scheme will be prepared in accordance with the principles set out in section 12 of the Wylfa Newydd CoCP and section 12 of this A5025 Off-line Highway Improvements sub-CoCP. The approved A5025 Off-line Highway Improvements Archaeological Mitigation Scheme (or any approved variations) will be implemented for the duration of the construction period.
- 12.2.3 Table 12-1 sets out the potential treatments of identified cultural heritage assets, to be agreed as part of the A5025 Off-line Highway Improvements Archaeological Mitigation Scheme.

Table 12-1 Example mitigation treatment per cultural heritage asset

Asset	Mitigation
A5 Historic Route, Valley (Asset 5)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for</i>

Asset	Mitigation
	<i>an archaeological watching brief</i> [RD6] and a Written Scheme of Investigation (WSI) agreed with the IACC.
Two Buildings (Site of), west of Cleifiog-Isaf (Asset 6)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Route of Post Road/18th Century Turnpike Road (Asset 322)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Removal of North-east / south-west Former Field Boundary, Valley (Asset 361)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
North-west / south-east Former Field Boundary, Valley (Asset 362)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Gully (Site of), north-west of Pen-caledog (Asset 427)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Field Clearance or Possible Demolished Building, north of Ty'n-ffynnon (Asset 42)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Building (Site of), south of Erw-goch (Asset 43)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Building, south-east of Pandy Erw-goch (Asset 53)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.

Asset	Mitigation
Possible Mill Feature, Melin Bodronyn (Asset 357)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Field System, Erw-goch (Asset 358)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Former Field System, Fron-deg (Asset 359)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Ditched boundary and Furrow (Site of), east of St Machraeth's Church (Asset 414)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Fire Pit, Former Hedgerows and Posthole, south of Erw-goch (Asset 421)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Pit and Curvilinear Feature, south of Erw-Goch (Asset 425)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Parallel Linear Features, north of Llanfachraeth (Asset 435)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Former Field Boundary, south of Erw-goch (Asset 437)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Possible Archaeological Anomaly, Llanfachraeth (Asset 438)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for</i>

Asset	Mitigation
	<i>an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Water Management Feature (Asset 443)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
House (Site of), south of Fadog Frech (Asset 156)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Milk Churn Stand, south-west of Fadog Frech (Asset 151)	Photographic Survey. Photographic survey would be undertaken in accordance with relevant guidance [RD8], [RD9] and a WSI agreed with the IACC.
Possible Gully, Llanfaethlu (Asset 371)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Undated Parallel Features (Asset 408)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Undated Linear Feature (Asset 441)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Undated Parallel Linear Features (Asset 442)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Undated Linear Feature (Asset 444)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Mill Pond and Head Race (Site of), Pandy Cefn Coch (Asset 262)	Photographic Survey. Photographic survey would be undertaken in accordance with relevant guidance

Asset	Mitigation
	[RD8], [RD9] and a WSI which would be agreed with the IACC.
East-west Former Field Boundary, Tyddyn-Waen (Asset 366)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
East-west Former Field Boundary, Ty-croes (Asset 368)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Former Road (Asset 356)	Targeted Watching Brief. The targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Geophysical Anomaly, Bedo (Asset 350)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Forking Trackway (Site of), Capel Soar (Asset 152)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Linear Bank South-west of Rhos-ty-mawr (Asset 162)	Strip, map and sample and targeted watching brief. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC. A targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Possible Field System (Asset 354)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.

Asset	Mitigation
Possible Pit Cluster, Llanfaethlu (Asset 360)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Undated Post Holes (Asset 409)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Fadog Frech Possible Stock Management/Settlement Features (Asset 410)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
North-east/south-west Former Field Boundaries, Llanfaethlu (Asset 428)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
East-west Ditch, south-west of Capel Soar Standing Stone (Asset 431)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Possible Undated Pit (Asset 433)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Llanfaethlu Multiperiod Activity (Asset 440)	Strip, map and sample. Strip, map and sample would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Two Burnt Mounds, Llanfachraeth (Asset 351)	Archaeological Excavation and Targeted Watching Brief. Archaeological excavation would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC. A targeted watching brief would be undertaken in accordance with the Chartered Institute for Archaeologists' <i>Standard and guidance for an</i>

Asset	Mitigation
	<i>archaeological watching brief</i> [RD6] and a WSI agreed with the IACC.
Ditches and Hedgerow Features, west of Llanfachraeth (Asset 417)	Archaeological excavation. Archaeological excavation would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Possible Standing Stone Socket, north of Bedo (Asset 418)	Archaeological excavation. Archaeological excavation would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Hedgerow (Site of), south of Bedo (Asset 419)	Archaeological excavation. Archaeological excavation would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Llanfachraeth Burnt Mound 2 (Asset 432)	Archaeological excavation. Archaeological excavation would be undertaken in accordance with the <i>Standard and guidance for archaeological excavation</i> from the Chartered Institute for Archaeologists [RD7] and a WSI agreed with the IACC.
Mill Pond and Head Race (Site of), Pandy Cefn Coch (Asset 262)	Horizon will agree through a WSI agreed with the IACC to undertake a series of mitigation works which could potentially include a targeted archaeological watching brief, targeted excavation and targeted strip, map and sampling.
Historic Buildings, lime kiln to the NW of the Black Lion Pub (Asset 153)	Photographic survey will be undertaken to record the setting of the lime kiln to the NW of the Black Lion Pub (Asset 153), as the asset itself is to be retained (as part of the embedded mitigation), and a WSI which would be agreed with the IACC.
Fieldscape, Central Eastern Mon (HLT 1)	Level 2 historic landscape survey and photographic survey. This would be undertaken in accordance with relevant guidance [RD8], [RD10] and a WSI agreed with the IACC.
Cemlyn Coastal Strip (HLT 2)	Level 2 historic landscape survey and photographic survey. This would be undertaken in accordance with relevant guidance [RD8], [RD10] and a WSI agreed with the IACC.
Fieldscape, North-west Mon (HLT 3)	Level 2 historic landscape survey and photographic survey. This would be undertaken in accordance with

Asset	Mitigation
	relevant guidance [RD8], [RD10] and a WSI agreed with the IACC.
Llanfachraeth (HLT 4)	Level 2 historic landscape survey and photographic survey. This would be undertaken in accordance with relevant guidance [RD8], [RD10] and a WSI agreed with the IACC.

13 References

Table 13-1 Schedule of references

ID	Reference
RD1	British Standards Institution. 2014. BS 5228-1:2009+A1:2014 <i>Code of practice for noise and vibration control on construction and open sites</i> , Part 1 Noise. London: British Standards Institution.
RD2	Department for Environment, Food and Rural Affairs and the Devolved Administrations. 2016. <i>Local Air Quality Management, Technical Guidance (TG16)</i> . London: Department for Environment, Food and Rural Affairs.
RD3	Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000). Evaluating the suitability of habitat for the great crested newt <i>Triturus cristatus</i> . <i>Herpetological Journal</i> 10(4): 143–155.
RD4	Herpetofauna Groups of Britain and Ireland. 1998. <i>Evaluating Local Mitigation / Translocation Programmes: Maintaining Best Practice and Lawful Standards</i> . HGI Advisory Notes For Amphibian and Reptile Groups (ARGs). HGBI, c/o Froglife, Halesworth. Unpubl.
RD5	British Standards Institution. 2012. BS 5837:2012 <i>Trees in relation to design, demolition and construction. Recommendations</i> . London: British Standards Institution.
RD6	Chartered Institute for Archaeologists. 2014. <i>Standard and guidance for an archaeological watching brief</i> . [Online]. [Accessed: January 2018]. Available from: https://www.archaeologists.net/sites/default/files/CIfAS&GWatchingbrief_2.pdf
RD7	Chartered Institute for Archaeologists. 2014. <i>Standard and guidance for archaeological excavation</i> . [Online]. [Accessed: January 2018]. Available from: http://www.archaeologists.net/sites/default/files/CIfAS&GExcavation_1.pdf
RD8	Gwynedd Archaeological Planning Service (GAPS). 2015. <i>Guidance for applicants undertaking general photographic surveys for planning purposes</i> . [Online]. [Accessed: 15 January 2017]. Available from: https://content.historicengland.org.uk/images-books/publications/understanding-archaeology-of-landscapes/heag142-understanding-archaeology-of-landscapes.pdf
RD9	Historic England. 2016. <i>Understanding Historic Buildings: A Guide to Good Recording Practice</i> . [Online]. [Accessed: January 2018]. Available from: https://historicengland.org.uk/images-books/publications/understanding-historic-buildings/
RD10	Historic England. 2017. <i>Understanding the Archaeology of Landscapes: A guide to good recording practice</i> . [Online]. [Accessed: 9 May 2017]. Available from: https://content.historicengland.org.uk/images-books/publications/understanding-archaeology-of-landscapes/understandingthearchaeologyoflandscapes.pdf

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