Pennant Walters

FOEL TRAWSNANT

Scoping Report

NOVEMBER 2024

PUBLIC

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1 INTRODUCTION

1.1 DESCRIPTION OF THE PROJECT

1.1.1. This Scoping Report is in relation to the Foel Trawsnant Wind Farm electricity network infrastructure connection (herein after referred to as the 'Project' or 'Site'). The Project will comprise of both 66 kilovolt (kV) overhead lines (OHL) and underground cables (UGC) which will provide a connection between the Foel Trawsnant Wind Farm and the wider national grid. The Project is mainly located within Bridgend County Borough Council (BCBC) but the start and end of the connection fall within the Neath Port Talbot County Borough Council (NPTCBC) (see **Figure 1-1**).

1.1.2. There is an existing OHL (approximately 2 kilometres (km)) southwest of the settlement of Llangynwyd (grid reference: 284175, 187428) which would be the connection point for the proposed Project.

1.1.3. Pennant Walters (the Applicant), with design input from National Grid, has requested consultancy support to prepare and submit an application for a DNS. The application will be to construct and operate a proposed grid connection connecting the consented Foel Trawsnant Wind Farm to the national grid. The connection will consist of approximately 5.1km of underground cabling and approximately 4.6km of OHL. Whilst the requirement for a DNS application is triggered by the overhead section, the whole of the connection will require DNS consent.

1.1.4. In relation to the England and Wales High Court (Administrative Court) Decisions (2019)[1], the Project is considered to be relevant to the following factor:

- "*iii. Functional interdependence - where one part of a development could not function without another, this may indicate that they constitute a single project (Burridge at [32], [42] and [78])*"

1.1.5. The Environmental Statement (ES) will therefore consider in each ES chapter the in-combination effects between the consented Foels Trawsnant Wind Farm, and the proposed electricity connection (the 'Project') which is subject to this Scoping Report.

1.1.6. In order to support the application, a number of environmental studies will need to be undertaken. The extent of these studies will be confirmed via this Scoping Report, which will be submitted to Welsh Ministers. The subsequent studies and assessments will be reported within an ES. Other documents may also be required to accompany the submission of the Environmental Statement, such as a Construction Traffic Management Plan (CTMP) and Construction Environmental Management Plan (CEMP).

[1] Wingfield, R (On the Application Of) v Canterbury City Council (2019) EWHC 1975 (Admin). Available at: https://www.bailii.org/ew/cases/EWHC/Admin/2019/1975.html

LOCATION

1.1.7. Starting at the northern-most section (see **Figure 1-1**), the route begins west of the A4063 as OHL for approximately 1.5 kilometres (km). To the north of Nant-y-ffyllon, the route then transitions into UGC, mainly following the existing highway network south for approx. 5.1 km. At Sychbant Farm, the highway network ceases; this is where the route transitions back into OHL and continues south for approx. 3.1km.

1.1.8. The northern section of the proposed OHL travels predominately through improved grassland and marshy grassland, with some areas encroaching on bracken, broadleaved woodland and scrub. The southern elements of the OHL cross an area of mainly improved and poor semi-improved grassland, with some minor areas of broadleaved woodland, bracken and marshy grassland. The majority of the UGC is contained within the existing built environment. There is a small section – approx. 250m in length – to the north of Nant-y-ffyllon which travels through poor semi-improved grassland and areas of bracken prior to connecting to existing tracks.

CONSTRUCTION

Underground Work

Existing track and highways

1.1.9. The highway works will be mainly confined to the highways boundary and adhere to standard practice. The exact nature of underground cabling construction works is to be confirmed between the Distribution Network Operator (DNO) and local highways authority, though an outline is provided below.

1.1.10. UGCs can be laid directly into a trench or placed within ducts. The most common way of laying an UGC is to use an open cut method whereby the cable is laid directly into a trench of up to 1.5m depth. The exact width of the trench can depend upon the final specification proposed for the cable, but it can be in the region of 600mm widening to approximately 1.5m closer to the surface to enable access (see **Figure 1-2**). The cables are placed at the bottom of the trench, and the excavation around the cables is then filled with sand before the remaining excavation is backfilled with the excavated material. If a cable is required to be laid alongside a highway, instead of beneath, a maintenance strip of approximately 1m on the outside of the verge is required for future access. Cables are jointed at approximately 500m intervals. The joint boxes are generally 1-2m deep and 5m x 3m.

1.1.11. An alternative to placing the cables directly into the trench is to use ducts within which the cables would be placed. These would also require joint bays at similar intervals to the open cut method.

1.1.12. It is anticipated the highway works will take between five to six months to complete. The works have been assumed to take place between 07:00 to 19:00 hours on weekdays and 07:00 to 13:00 on Saturdays. Pennant Walters and the DNO will agree either a road closure with the local highways' authority and/or implement appropriate traffic management measures for the works associated with the highways.

Cable plough

1.1.13. Laying underground cable in areas outside the highway's boundary may follow the construction works outline above. However, a cable plough could also be used to lay underground cable in the minor 250m section which lies outside the existing track or highway network.

1.1.14. A Cable Plough could be used to place the cable ducts into the ground at a depth of approximately 450mm. The works are relatively unintrusive, and briefly outlined below:

- a power winch will be sited safely ahead of the Cable Plough;
- a blade connected to the Cable Plough will cut through the earth, creating a channel that forms the installation bed;
- as the Cable Plough continues forward, the cable ducts are laid;
- the opening is then firmly closed using the dug material, to approximately half its depth and the earth forms a bridge over the cable ducts; and
- the lower part of the cut remains open and is gradually filled by the penetration of silt.

1.1.15. As a result of the method outlined above, there will be no changes to topography or geology. Also, considering the immediate closure of the narrow cut, the land is able to return to its original state in only a short time period.

1.1.16. No haul roads would be required, and traffic movements would be minimal. It is predicted up to two trucks would be required to transport the Cable Plough and associated power winch.

1.1.17. It is anticipated that any works undertaken by the cable plough would take up to two days to complete. The works have been assumed to take place between 07:00 to 19:00 hours on weekdays and 07:00 to 13:00 on Saturdays.

Overhead Line Work

1.1.18. The exact nature of OHL construction works is to be confirmed between the DNO and the local authorities, though an outline is provided below.

1.1.19. An OHL would be carried on wooden H-poles, consisting of two single wooden poles (most likely Scots Pine) joined by a crossarm with bracing. At the termination points only, two sets of H-poles will be located side-by-side. Terminal ends may be located at the start and end of the underground section of the connection. **Figure 1-3** and **Figure 1-4** provide examples of a typical OHL structure and termination point respectively, though the final structures may vary during detailed design stage.

1.1.20. Whilst the intention is for the route to be as straight as possible, there will be some deviation to avoid environmental features, such as trees. At points of deviation, angle poles will be used; these are likely to be H-pole structures. In all locations where the line deviates, there will be the requirement to provide cable stays to the poles. The poles are not typically stayed, and are unlikely to require concrete foundations. However, pre-cast concrete kicking blocks will be installed below ground, to provide the poles with adequate structural support.

1.1.21. The height of the wooden poles will be 12m, with a maximum height unlikely to exceed 10m above ground. This is due to the foundation depths with the amount of wood pole below ground typically being between 1.8m to 2.4m. Minimum ground clearance will be 6.3m. An assumed minimum clearance to trees from the conductors is 4m from the nearest part of the tree.

1.1.22. The poles are designed to carry the conductor wires. It is currently proposed to install a single circuit made up of one conductor per phase. Telemetry and monitoring capabilities, such as fault detection, will be provided by a microwave link. The poles will carry the cross arms onto which the insulators are attached. Poplar conductor wire will be used for all the OHL sections. For the purposes of the Scoping Report, it has been assumed that a maximum span length between poles of 90m to 130m could be achieved. The actual span between poles will be influenced by topography and the surrounding environment.

1.1.23. The construction compounds for the consented wind farm development will be used for the construction of the northern OHL section. Up to two laydown areas may be required along the southern section of the overhead line. They will need to be sited in accessible locations; the intention will be to use areas of existing hardstanding where these are available.

1.1.24. A CEMP will be produced to draw together the statutory controls required during the construction phase. The CEMP will also set out standard best practice measures to manage the construction phase of the development.

OPERATION

1.1.25. The Project will integrate the consented Foel Trawsnant Wind Farm with the current DNO via a 66kV connection. It will remain active for the duration of the wind farm's operation; for the purposes of the assessment, it is assumed to be up to 30 years. However, it is noted the duration of the proposed overhead line and underground cable could extend beyond 30 years, dependant on potential future uses.

Underground Cable

1.1.26. In the normal course of operation there is no requirement to inspect UGCs, although they are regularly tested at the joint bays.

Overhead Line

1.1.27. During the operation phase, duties are limited to resilience tree cutting to retain clearance distances and regular inspection. Pole inspections will be carried out in line with company policies and procedures.

1.1.28. Conductors and insulators have a design life of approximately 40 years. Faults on an OHL are infrequent. When they do occur, the vehicles used are likely to be similar to those needed for the construction of the line. Fault repair is quick and relatively straightforward.

DECOMMISSIONING

1.1.29. Following the operational phase, the connection (underground and overground) will be left in situ as it has the potential to become integrated into the DNOs wider distribution network. This would also avoid further disruption to the surrounding environment.

Figure 1-1 - Grid Connection Route

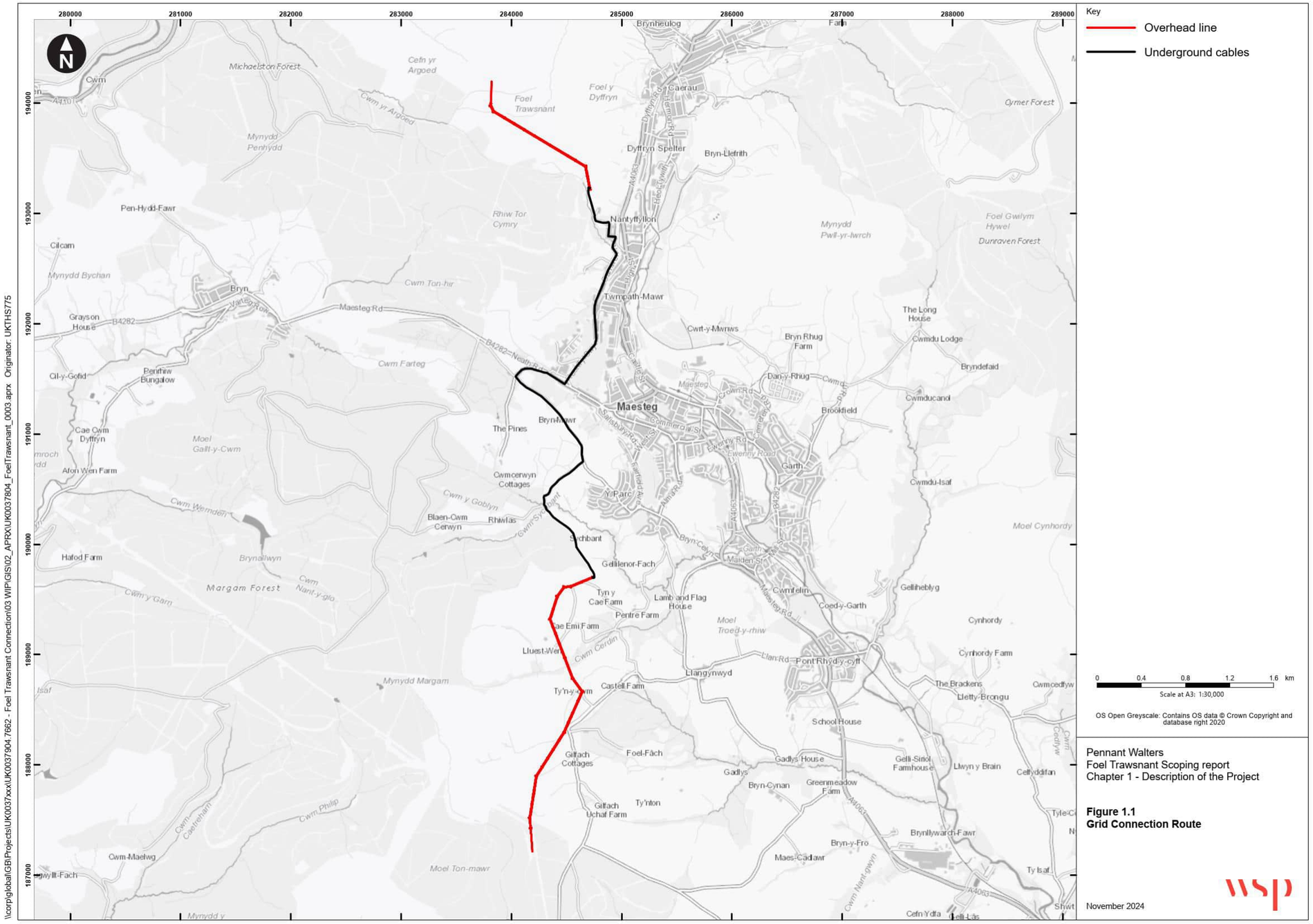


Figure 1-2 - Typical Cable Depths

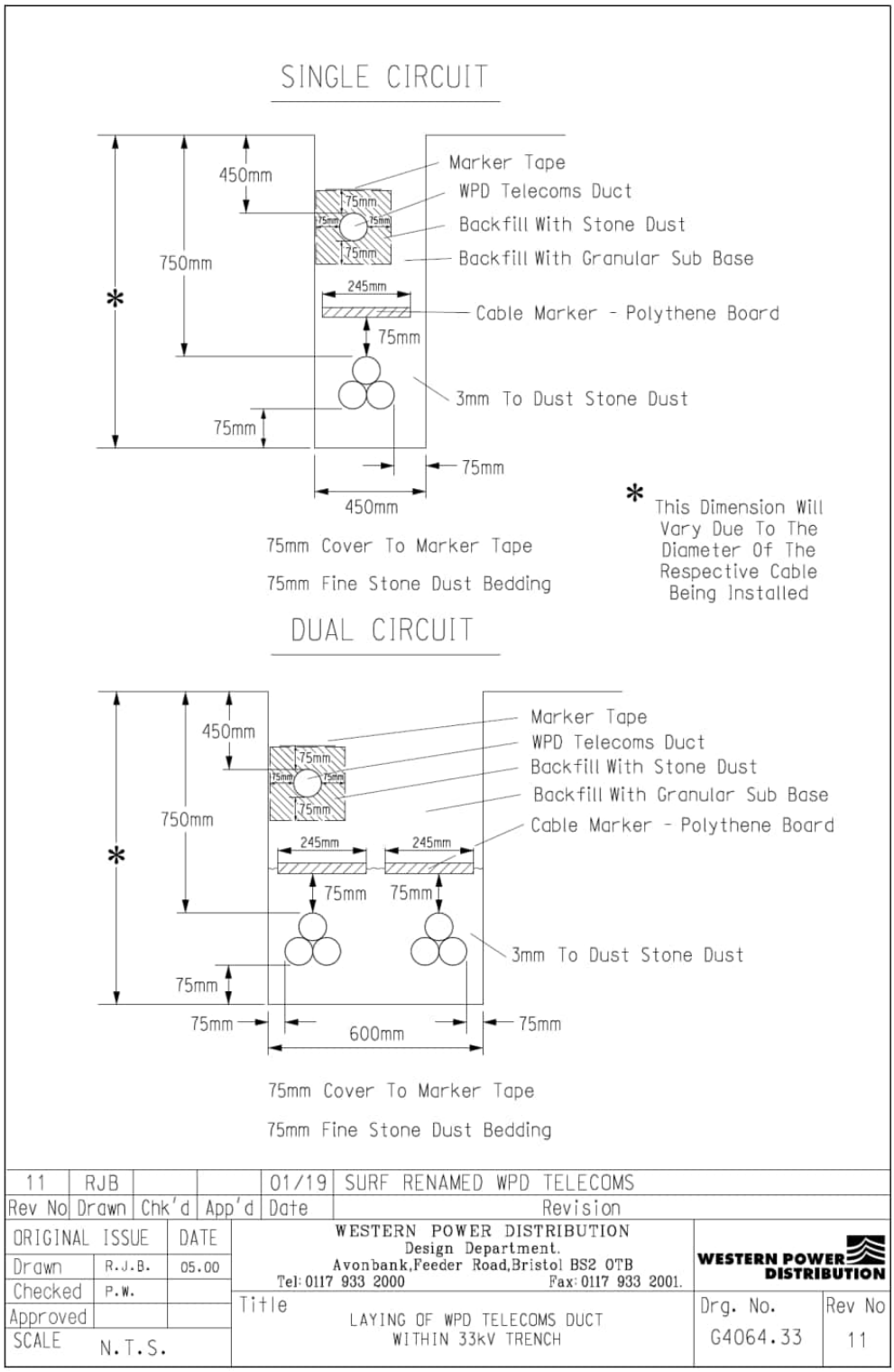


Figure 1-3 - Intermediate Overhead Line (H-Pole)

Figure 1-4 - Overhead Line to Underground Cable Terminal Connection Point (H-Pole)

1.2 NON-TECHNICAL SUMMARY

1.2.1. The potential significant effects identified within this scoping report, and therefore to be considered further within the ES, have been summarised in **Table 1-1**. The effects scoped out of further assessment have also been included in **Table 1-1.**

1.2.2. It should be noted that the potential significant effects of climate change will be considered within each individual chapter of the ES, as appropriate.

Table 1-1 - Summary table of potential significant effects

Discipline	Potential Significant Effects Scoped In	Potential Significant Effects Scoped Out
Landscape	▪ Construction: • Land preparation (site clearance, earthworks). • Presence of cranes, other machinery, vehicle movements, contractors' facilities and site access. ▪ Operation/ decommissioning: • Land preparation (site clearance, earthworks). • Presence of overhead power line.	N/A
Traffic and Transport	▪ Construction • Impacts of the Project construction traffic on highways that form the traffic and transport study area during the construction phase.	▪ Construction: • Impacts during the construction phase on navigable waterway and the rail network, due to the Proposed route not crossing any of these. • Impacts resulting from AIL movements or the movement of hazardous loads, as none are anticipated (set out in **Section 3.3**). ▪ Operation/ decommissioning: • Impacts during the operational phase of the development, due to the minimal traffic movements generated during this phase (set out in **Section 3.3**).

Discipline	Potential Significant Effects Scoped In	Potential Significant Effects Scoped Out
		• Impacts during the decommissioning phase of the development, due to the lower traffic movements generated during this phase than in the construction traffic phase (set out in **Section 3.3**).
Ecology	▪ Construction: • Habitat loss (temporary or permanent). • Habitat degradation. • Noise, vibration and visual disturbance from construction traffic and personnel. • Changes in air quality – dust • Changes in light levels. • Removal of trees within the Project area. • Introduction or spread of non-native invasive species. • Direct mortality during construction.	▪ Loss or disturbance of common and widespread habitats of negligible nature conservation importance; and ▪ Temporary disturbance of common and widespread species of negligible nature conservation importance. ▪ Operation/ decommissioning: • Noise and visual disturbance from traffic and people during routine maintenance.
Historic Environment	▪ Construction: • Direct disturbance to, or loss of, historic assets located within the development footprint. ▪ Operation/ decommissioning: • Changes to the heritage significance of assets through changes to their settings	▪ Direct disturbance to historic assets within the section of the underground cable route proposed within existing road network ▪ Direct disturbance to historic assets during the operation phase of the underground cable and overhead powerline ▪ Direct disturbance to historic assets outside of the scoping boundary ▪ Adverse effect through change to their settings on historic assets not listed in **para 5.6.8**
Water Resources and Flood Risk	▪ Construction: • Pollution risk to surface water features and Water Framework Directive (WFD) waterbodies	▪ Operation/ decommissioning: • Pollution risk to surface water features and WFD waterbodies

Discipline	Potential Significant Effects Scoped In	Potential Significant Effects Scoped Out
	• Impact to watercourses crossed by the Project • Pollution risk to groundwater resources and WFD waterbodies • Impact to groundwater levels and flows • Flood risk to third parties, existing infrastructure, the Project and receptors such as construction personnel	• Impact to watercourses crossed by the Project • Pollution risk to groundwater resources and WFD waterbodies • Impact to groundwater levels and flows • Flood risk to third parties, existing infrastructure, the Project and receptors such as construction personnel
Coal Mining	▪ Presence of coal seam outcrops. ▪ Recorded past shallow coal mining. ▪ Areas of probable (unrecorded) shallow coal mining. ▪ Mine entries (shafts).	N/A
Noise	Scoped Out – qualitative assessment recommended. To be captured in a Noise and Vibration Management Plan, appended to the CEMP.	▪ Construction • Construction noise (including construction traffic noise). • Construction vibration. ▪ Operation/ decommissioning ▪ Noise and vibration.
Socio-Economics	Scoped Out.	▪ Construction, Operation and Decommissioning
Major Accidents and Disasters	▪ Severe weather: extreme temperatures (to be considered in Project Description ES chapter) ▪ Transport accidents (to be considered in Transport ES chapter) ▪ Industrial accidents (to be considered in Project Description ES chapter)	▪ Biological hazards: epidemics ▪ Biological hazards: animal and insect infestation. ▪ Earthquakes ▪ Tsunamis / tidal waves / storm surges ▪ Volcanic eruptions ▪ Famine / food insecurity ▪ Displaced populations ▪ Severe weather: storms ▪ Severe weather droughts ▪ Terrorist incidents ▪ Cyber attacks ▪ Disruptive industrial action ▪ Public disorder

Discipline	Potential Significant Effects Scoped In	Potential Significant Effects Scoped Out
		▪ Wildfires ▪ Severe space weather ▪ Poor air quality events ▪ Urban fires
Land Quality	Scoped Out – commitment to follow standard construction practices, develop an unexpected contamination protocol and complete a Phase 1 Desk Study to support the planning application.	▪ Soil (and agricultural land) ▪ Geology ▪ Minerals ▪ Land contamination ▪ Risks to Construction Workers
Air Quality	Scoped Out.	▪ Construction • Dust Emissions. ▪ Operation/ decommissioning • Impacts on residential properties. • Impacts to sites designated for nature conservation (including ancient woodland).
Greenhouse Gas Emissions	N/A – considered in individual ES chapters as appropriate	N/A – considered in individual ES chapters as appropriate

1.3 ALTERNATIVES

1.3.1. The EIA Regulations require that the ES contains a description of 'reasonable alternatives' considered as part of the design process. This may include alternatives designs which are relevant to the objectives of the Project and its specific characteristics. The ES will report the main reasons for selecting the chosen option, including a comparison of the environmental effects.

1.3.2. The environmental disciplines scoped into the ES will include consideration of the options considered prior to the final route being chosen. The environmental performance of each option will be presented to the Applicant and described within the Design Evolution and Alternatives chapter of the ES.

1.4 CONSULTATION

1.4.1. As part of the EIA process, consultation with be undertaken in line with best practice and aims to extend beyond the statutory minimum requirements. The key statutory requirements for pre-

application consultation associated with the Project stem from provisions of the Planning (Wales) Act 2015 and the Developments of National Significance (Procedure) (Wales) Order 2016.

1.4.2. Given the nature of the proposals, the Applicant will engage with neighbours, businesses, landowners, and communities surrounding the Project in the first instance. Where appropriate, interested parties, groups and individuals from any identified surrounding areas will also be informed about the proposals.

1.4.3. Consultation is an essential element of the EIA and DNS application processes and will be reported within the ES and Pre-Application Consultation (PAC) Report to be submitted as part of the DNS application, in line with DNS procedural guidance.

1.5 APPRAISAL SCOPE AND METHODOLOGY

OVERVIEW OF THE PROCESS

1.5.1. Environmental Impact Assessment (EIA) is a process for identifying the likely significant environmental effects (positive and adverse) of a project to inform the decision-making process for development consent to be granted. The EIA process will culminate in the provision of an ES written in accordance with the Town and Country Planning (Environmental Impact Assessment) (Wales) regulations 2017 (hereafter referred to as the 'EIA Regulations') and will provide an overview of the likely significant effects associated with the Project.

1.5.2. The EIA Report will identify the assessment methodologies, based on recognised good practice and guidelines specific to each of the relevant environmental topic areas where the Project could result in significant effects. The EIA process should be systematic, analytical, impartial, consultative and iterative allowing opportunities for environmental concerns to be addressed in the design of a project. Typically, a number of design iterations take place in response to environmental constraints identified during the EIA process prior to the final design being reached.

1.5.3. Under the EIA Regulations, the Project is not a Schedule 2 development. However, a precautionary approach has been taken to ensure any potential significant effects will be effectively mitigated.

1.5.4. Although not a statutory requirement, the EIA regulations make provision for obtaining a scoping direction from Welsh Ministers on the information to be included in the ES. The Applicant wishes to seek a formal scoping direction from Planning and Environment Decision Wales (PEDW). This document is the Scoping Report, which contains the necessary information as required under Regulation 33 of the EIA regulations.

CUMULATIVE EFFECTS

1.5.5. Cumulative effects can arise from the interaction between a proposed development and other developments proposed or under construction. In line with standard practice, for the purpose of the EIA, other developments which are operational, subject to planning approval or subject to a full and validated planning application will also be included in the consideration of potential cumulative effects (subject to a cut-off point to allow assessments to be undertaken). It should be noted that not all of the cumulative developments would necessarily have a cumulative effect in respect of any particular environmental topic.

1.5.6. The requirements for developments to be considered in a cumulative assessment are likely to be as follows:

- Within 2km of the Project;
- Considered to be a major development (subject to DCO, TWA, DNS or Hybrid Bill);
- Over 50 units for residential development; or
- Over 2,500m^2 for commercial development.

1.6 STRUCTURE OF THE SCOPING REPORT

1.6.1. The proposed scope of the EIA for this Project with respect to the relevant policy and environmental topics is set out in **Chapters 2** to **8** of this report and comprises:

- Chapter 2: Landscape;
- Chapter 3: Traffic and Transport;
- Chapter 4: Ecology;
- Chapter 5: Historic Environment;
- Chapter 6: Water Resources and Flood Risk;
- Chapter 7: Coal Mining; and
- Chapter 8: Environmental Aspects Scoped Out.

1.7 PLANNING CONTEXT

LEGISLATIVE CONTEXT

1.7.1. This section summarises the main planning legislation relevant to the proposed grid connection. Each of the separate disciplines have outlined the legislative context in each of their sections and further detail will be provided in the ES chapters.

1.7.2. The application will conform to the statutory requirements legislated by the Environmental Impact Assessment (Wales) Regulations 2017.

1.7.3. A Planning Statement will accompany the application for consent and assess the proposed development in a legal and policy context against the relevant legislation and planning policies in force. The Planning Statement will assess such documents at international, national, regional and local levels, where applicable, including but not limited to:

- Future Wales: The National Plan 2040
- Planning Policy Wales (Edition 12) (2024)
- Developments of National Significance (Wales) Regulations 2016
- Developments of National Significance (Specified Criteria and Prescribed Secondary Consents) (Wales) Regulations 2016 (as amended)
- Technical Advice Notes
- Bridgend County Borough Council Replacement Local Development Plan (RLDP), adopted March 2024. In particular policies:
  - DNP 1: Development in the Countryside
  - DNP4: Special Landscape Areas
  - DNP 5(2): Local and Regional Nature Conservation Site

- DNP 6: Biodiversity, Ecological Networks, Habitats and Species
- DNP7: Trees, Hedgerows and Development
- SP13: Decarbonisation and Renewable Energy
- SP18: Conservation of the Historic Environment
- SP18 (7): Historic Landscape

- Neath Port Talbot County Borough (NPTCBC) Council Local Development Plan (LDP), adopted January 2016. In particular policies:
  - EN 2 Special Landscape Areas
  - Supplementary Planning Guidance: Landscape and Seascape (Published May 2018)

1.7.4. Any other emerging Supplementary Planning Guidance will also be accounted for in the submitted ES with the appropriate weighting given relative to established policies.

2 LANDSCAPE AND VISUAL

2.1 INTRODUCTION

2.1.1. The Landscape assessment will consider the potentially significant effects on the local environment that may arise from the construction, operation and decommissioning of the Project.

2.1.2. This chapter of the Scoping Report sets out the information sources used to inform the scope of the assessment. It provides an overview of the baseline conditions relevant to Landscape and Visual within the vicinity of the scoping boundary, the likely significant effects to be considered within the assessment and measures which can be incorporated into the Project to mitigate any potential significant effects.

2.1.3. This chapter should be read in conjunction with **Chapter 1: Introduction**.

2.2 INFORMATION SOURCES AND STUDY AREA

INFORMATION SOURCES

2.2.1. A summary of the sources of baseline information, together with the nature of that data is outlined in **Table 2-1.**

Table 2-1 - Data Sources Used to Inform The Landscape and Visual Impact Assessment

Organisation	Data provided	Data sources
Ordnance Survey.	Ordnance Survey mapping	Ordnance Survey (2024) MAPSHOP. Available online at: emapsite | mapshop 1:25,000 mapping providing baseline information on the landscape context including topography, drainage, settlement pattern, land use, tree cover, promoted recreational routes, transport network and infrastructure.
Google Earth Pro.	Aerial photography (imagery date 23/04/2021)	Google Earth Pro. Provides baseline information and Street View images on the landscape context including drainage, settlement pattern, land use, tree cover, transport network and infrastructure.
Natural Resources Wales.	Landscape Character.	**National** Natural Resource Wales, (2021). *National Character Areas NLCA*. Available online at: https://naturalresources.wales/evidence-and-data/maps/nlca/?lang=en [Accessed 02/10/2024]. **Regional** Natural Resource Wales, (2021). *Landmap Visual Sensory.* Available online at: https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en [Accessed 02/10/2024].

Organisation	Data provided	Data sources
		LUC, (2013). *Landscape Character Assessment for Bridgend County Borough*. Available online at: https://www.bridgend.gov.uk/media/1149/bridgend-landscape-character-assessment.pdf [Accessed 02/10/2024]. Provides baseline information on landscape character at a national level and sets the landscape context for the county and district level assessments (as described in paragraph 5.14 of GLVIA3[2]).
Datamap	Ancient Woodland.	Natural Resource Wales, (2021). *WOM21 Ancient Woodland Inventory*. Available online at: datamap.gov.wales/map [Accessed: 02/10/2024].
Bridgend County Borough Council.	Public Rights of Way.	Bridgend County Borough Council, (No Date). Web Mapping. Available online at: https://maps.bridgend.gov.uk/webmap9/Map.aspx?MapName=OSWMTSBasemap [Accessed: 02/10/2024].
Natural Resources Wales.	Open Access Land (CRoW Act 2002).	Natural Resource Wales, (2021). *Open Access - Open Country*. Available online at: https://datamap.gov.wales/maps/new#/ [Accessed: 02/10/2024].
Sustrans	National Cycle Network.	Sustrans, (2021). *National Cycle Network Map*. Available online at: http://www.sustrans.org.uk/ncn/map [Accessed 02/10/2024].

STUDY AREA

2.2.2. The Guidelines for Landscape and Visual Impact Assessment (GLVIA3) clarify how study areas should be determined on a project specific basis. Paragraph 5.2 of GLVIA3[2] states that the study area extent should be *"based on the extent of Landscape Character Areas likely to be significantly affected either directly or indirectly"* or *"on the extent of the area from which the development is potentially visible, defined as the Zone of Theoretical Visibility [ZTV], or a combination of the two."*

2.2.3. For the purpose of this assessment, the initial study area for assessing potentially significant landscape and visual effects is proposed to be a maximum of 3km radius from the Site Boundary of the Project. This is based on a combination of professional judgement and an initial analysis of the extent of the Project. A ZTV will be produced by computer modelling to inform the LVIA, based on the Ordnance Survey digital terrain model (DTM) and/or the Environment Agency LIDAR digital surface model.

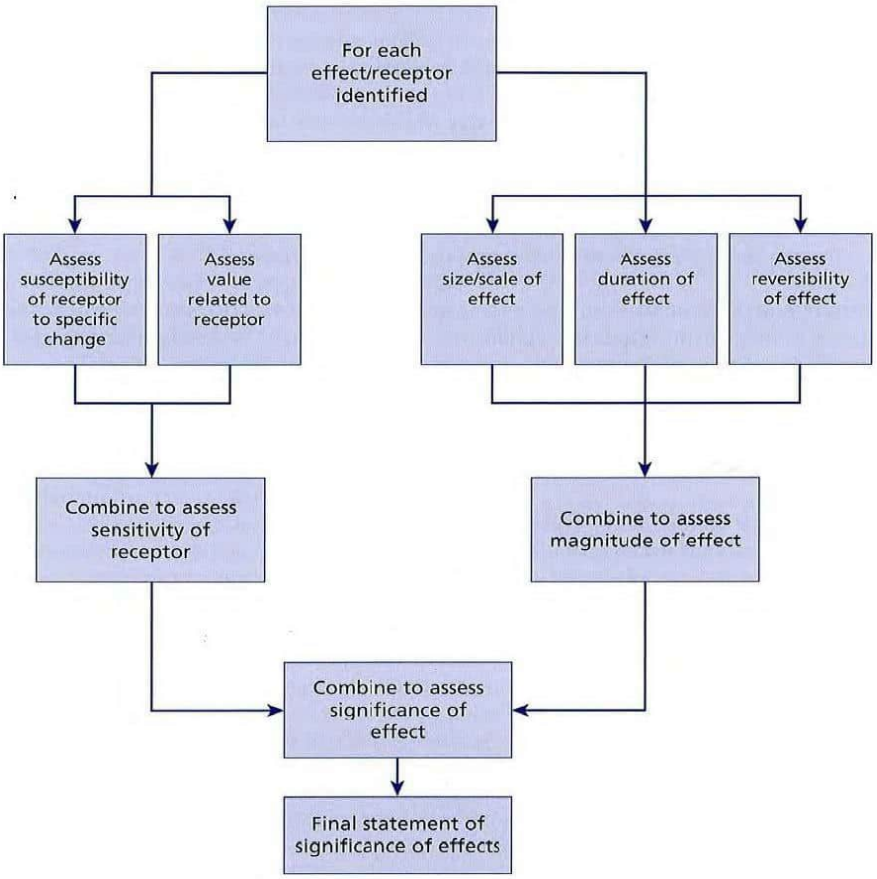
[2] Landscape Institute and Institute of Environmental Management and Assessment, (2013). *Guidelines for Landscape and Visual Impact Assessment*. Routledge: London.

2.2.4. This initial study area will be refined further in agreement with local authorities and other relevant consultees following future design development stages.

2.3 METHODOLOGY

2.3.1. The Landscape and Visual Impact Assessment (LVIA) will be undertaken in accordance with best practice and following the Landscape Institute and Institute of Environmental Management and Assessment (IEMA) guidelines[3] (GLVIA3). The assessment approach and process are summarised in the flow diagram below from GLVIA3.

Figure 2-1 - Assessing the significance of effects



2.3.2. **Tables 2-2** to **2-8** set out the decision-making framework for assessing sensitivity and magnitude and how these are considered together to reach an assessment of significance. In all cases these tables are guidelines, not hard and fast rules.

[3] Landscape Institute and Institute of Environmental Management and Assessment, (2013). *Guidelines for Landscape and Visual Impact Assessment, Third edition*. Routledge.

2.3.3. Conclusions about the sensitivity of receptors, the magnitude of impacts and the significance of effects are always based on professional judgement.

ASSIGNING VALUE AND SENSITIVITY

Landscape Receptors

2.3.4. Landscape effects can be defined as the changes in the character and quality of the landscape as a result of a development, through:

- Direct impacts upon the landscape fabric (specific features and elements that make up the landscape);
- Indirect effects on the overall patterns of elements and on the perceptual and aesthetic aspects that give rise to landscape character and regional and local distinctiveness; and
- Effects upon valued landscapes such as public open space, designated or otherwise valued landscapes including wild land.

2.3.5. The sensitivity of the landscape receptors has been arrived at by considering the landscape receptor value and the susceptibility of the landscape receptor to the change proposed, generally in accordance with **Tables 2-2** and **2-3**.

2.3.6. Reference is normally made to the relevant Landscape Character Assessments.

Table 2-2 - Landscape receptor value

Value	Recognition	Features	Quality / Condition
High	Typically, a landscape or feature of international or national recognition: Areas of Outstanding Natural Beauty, National Parks, World Heritage Sites (where designated for landscape reasons), designed landscapes on the Cadw Register.	Typically, a strong sense of place with landscape/features worthy of conservation; no or few detracting features.	A very high-quality landscape/feature; attractive landscape/feature; exceptional/distinctive.
Medium	Regional recognition or undesignated, but locally valued landscape/features: Special Landscape Areas, locally listed designed landscapes and Regional Parks.	Typically, contains distinguishing features worthy of conservation; evidence of some degradation and / or some detracting elements.	Ordinary to good quality landscape/feature with some potential for substitution; a reasonably attractive landscape/feature; fairly typical and commonplace.
Low	Typically, an undesignated landscape/feature.	Few landscape features worthy of conservation, evidence of degradation with many detracting features.	Ordinary landscape/feature with high potential for substitution; quality that is typically commonplace and unremarkable; limited variety or distinctiveness.

Negligible	Typically, an undesignated landscape/feature.	No landscape features worthy of conservation; evidence of degradation with many detracting features.	Low quality landscape/feature with very high potential for substitution; limited variety or distinctiveness; commonplace.

Table 2-3 - Susceptibility of the landscape receptor to change

Susceptibility to proposed change	
High	Low ability to accommodate the specific proposed change; undue consequences for the maintenance of the baseline situation (receptor value) and/or achievement of relevant planning policies/strategies.
Medium	Moderate ability to accommodate the specific proposed change; some undue consequences for the maintenance of the baseline situation (receptor value) and/or achievement of relevant planning policies/strategies.
Low	High ability to accommodate the specific proposed change; little or no undue consequences for the maintenance of the baseline situation (receptor value) and/or achievement of relevant planning policies/strategies.
Negligible	Very high ability to accommodate the specific proposed change; no undue consequences for the maintenance of the baseline situation (receptor value) and/or achievement of relevant planning policies/strategies.

Landscape Sensitivity

2.3.7. Susceptibility and value can be combined in different ways although it is generally accepted that a combination of high susceptibility and high value is likely to result in the highest sensitivity, whereas a low susceptibility and low value is likely to result in the lowest level of sensitivity. As noted in GLVIA3 there can be complex relationships between the value attributed to a landscape and its susceptibility to change, which can be particularly important when considering change in or close to designated landscapes.

2.3.8. Landscapes considered highly susceptible to the proposed change are normally considered to be of high sensitivity, unless there are particularly strong reasons associated with the landscape value that led to a reduction in sensitivity.

2.3.9. Similarly, receptors considered of low or medium susceptibility are usually in the same category of sensitivity, unless there are reasons associated with the landscape value that lead to an increase in sensitivity.

Table 2-4, below, summarises typical characteristics of the different levels of sensitivity. It should be noted that the levels are indicative and the levels shown are arbitrary divisions of a continuum. Professional judgement is always used to determine the overall level.

Table 2-4 - Landscape sensitivity

Level of sensitivity	Typical characteristics
High	Areas of landscape character that are highly valued for their scenic quality (including most statutorily designated landscapes). Elements/features that could be described as unique or are nationally scarce. Mature vegetation with provenance such as ancient woodland or mature parkland trees. Mature landscape features which are characteristic of and contribute to a sense of place and illustrates time-depth in a landscape and if replaceable, could not be replaced other than in the long term. No or limited scope for substitution or positive enhancement.
Medium	Areas that have a positive landscape character but include some areas of alteration/degradation/or erosion of features. Perceptual/aesthetic aspects have some vulnerability to unsympathetic development; and/or features/elements that are locally commonplace; unusual locally but in moderate/poor condition; or mature vegetation that is in moderate/poor condition or readily replicated. Some scope for substitution or positive enhancement.
Low	Damaged or substantially modified landscapes with few characteristic features of value. Capable of absorbing major change. Landscape elements/features that might be considered to detract from landscape character such as obtrusive man-made artefacts (e.g. power lines, large scale developments, etc.). Scope for substitution or positive enhancement.
Negligible	Areas that are relatively bland or neutral in character with few/no notable features. A landscape that includes areas of alteration/degradation or erosion of features. Landscape elements/features that are commonplace or make little contribution to local distinctiveness. Opportunities for the restoration of landscape through mitigation measures associated with the proposal.

Visual Receptors

2.3.10. Visual effects relate to changes in available views of the landscape and the effect of those changes on people, including:

- The direct effects of the Project on the content and character of views (e.g. through intrusion or obstruction and/or the change or loss of existing elements in the view); and
- The overall effect on the change on visual amenity.

2.3.11. The sensitivity of a visual receptor reflects their susceptibility to change and any values which may be associated with the specific view. It varies depending on a number of factors such as the activity of the viewer, their reasons for being there and their expectations and the duration of view.

2.3.12. Certain views are highly valued for either their cultural or historical associations, which can increase the sensitivity of the viewer. However, whilst a valued view may serve to increase the overall visual receptor sensitivity, a low value will not necessarily reduce sensitivity.

2.3.13. GLVIA3 advises that it is helpful to consider (but not restricted to) the following:

- Nature of the view (full, partial or glimpsed);
- Proportion of the proposed development visible (full, most, part or none);
- Distance of the viewpoint from the proposed development and whether it would be the focus of the view or only a small element;
- Whether the view is stationary, transient or sequential; and
- The nature of the changes to the view.

2.3.14. Additionally, the seasonal effects of vegetation are considered, in particular the varying degree of screening and filtering of views.

The sensitivity of the visual receptors has been arrived at by considering the susceptibility of the visual receptor to the change proposed (guided by **Table 2-5**) and any values associated with the particular view (guided by **Table 2-6).**

Table 2-5 - Susceptibility of the visual receptor to change

Susceptibility to proposed change	
High	▪ Residents at home; ▪ Walkers on long distance trails and mountain access routes; ▪ Users of footpaths where the attractive nature of the countryside is a significant factor in the enjoyment of the walk; ▪ Cyclists on national and local cycle routes designed to provide an attractive experience; ▪ Road users on recognised tourist routes; and ▪ Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to appreciation, experience and/or enjoyment.
Medium	▪ General road users; ▪ Passengers on rail lines where the trains run at low or moderate speeds; ▪ Users of public open space and footpaths where the nature of the surroundings is not a significant factor in the enjoyment of the activity; and ▪ Visitors to landscape and heritage resources and other attractions where views of the surroundings are a minor contributor to appreciation, experience and/or enjoyment.
Low	▪ People at their place of work or shopping; ▪ Users of high-speed roads and passengers in trains running at high speed; ▪ People engaged in recreational activities where the view of the surroundings is secondary to the enjoyment of the activity (such as playing or spectating at outdoor sports facilities); and

	▪ Users of public open space and footpaths where the nature of the surroundings is irrelevant to the enjoyment of the activity.
Negligible	▪ Users of indoor facilities where the view is irrelevant to their activity.

Table 2-6 - Values associated with views (which may raise the receptor sensitivity)

Value	Recognition	Indicators of value
High	Recognised views from nationally or internationally important landscape or heritage resources, Scheduled Monuments; may be identified in planning policies or statutory documents.	High value/celebrated view; referred to in national or international guidebooks, tourist guides etc.; literary and art references; presence of interpretive facilities (e.g. visitor centre).
Medium	Recognised views from local or regionally important landscape or heritage resource, such as Local Landscape Areas or Conservation Areas; may be identified in local planning policies or supplementary planning documents.	Moderately valued view; referred to in local or regional guidebooks, tourist maps etc.; local literary and art references; presence of some interpretive facilities (e.g. parking places or sign boards)

Visual Sensitivity

2.3.15. As with landscape, susceptibility and value can be combined in different ways to form a judgement about the sensitivity of a given receptor. It is generally accepted that a combination of high susceptibility and high value is likely to result in the highest sensitivity, whereas a low susceptibility and low value is likely to result in the lowest level of sensitivity.

2.3.16. However, whilst a valued view may serve to increase the overall sensitivity of the visual receptor, a low value will not necessarily reduce sensitivity. Visual receptors considered highly susceptible to the proposed change are normally considered to be of high sensitivity, unless there are particularly strong reasons associated with the value of the view that leads to a reduction in sensitivity.

2.3.17. Similarly, receptors considered of low or medium susceptibility are usually in the same category of sensitivity, unless there are reasons associated with the value of the view that leads to an increase in sensitivity.

2.3.18. **Table 2-7** summarises typical characteristics of the different levels of sensitivity. It should be noted that the levels are indicative and the levels shown are arbitrary divisions of a continuum.

Table 2-7 - Visual sensitivity criteria

Level of sensitivity	Typical characteristics
High	A view or overall visual amenity which is an important reason for receptors being there (and therefore most views or overall visual amenity for highly susceptible receptors).

Level of sensitivity	Typical characteristics
	A well-balanced view containing attractive features and notable for its scenic quality. A view which is experienced by a large number of people and/ or recognised for its scenic qualities.
Medium	A view or overall visual amenity which plays a relatively small part in the reason why a receptor would be there (and therefore most views or overall visual amenity for receptors of medium susceptibility). An otherwise attractive view that includes noticeable discordant features or overall visual amenity where there are noticeable visual detractors.
Low	A view or overall visual amenity which is unlikely to be part of the receptor's experience or reasons for being there (and therefore most views or overall visual amenity for receptors of low susceptibility). An unattractive view or overall visual amenity where there are many visual detractors.
Negligible	A view or overall visual amenity which is irrelevant to the receptor's experience or reasons for being there.

ASSESSING MAGNITUDE OF CHANGE

2.3.19. The magnitude of landscape and visual change depends upon a combination of factors including the size, scale and nature of change in relation to the context; the geographical extent of the area influenced; and its duration and reversibility. Typical criteria are given in **Table 2-8**.

Table 2-8 - Magnitude of landscape and visual change

Value	Size, Scale and Nature	Geographical Extent	Duration and Reversibility
High	▪ Occupies much of the view. ▪ Obstructs a significant portion of the view. ▪ Forms a large or very noticeable or discordant element in the view. ▪ Considerable change to key features or many existing elements of the landscape. ▪ Introduces elements considered totally uncharacteristic to the existing landscape. ▪ A very noticeable change to the character of the landscape.	Ranging from notable change over extensive area to intensive change over a more limited area.	Long term; permanent/non-reversible or partially reversible.
Medium	▪ Occupies a noticeable portion of the view ▪ Obstructs a significant portion of the view. ▪ Forms a large or very noticeable or discordant element in the view. ▪ Some considerable change to existing landscape elements and/or landscape	Moderate changes in a localised area.	Medium term; semi-permanent or partially reversible.

Value	Size, Scale and Nature	Geographical Extent	Duration and Reversibility
	character; discernibly changes the surroundings of a receptor, such that its baseline is partly altered. ▪ Readily noticeable.		
Low	▪ Occupies a small portion of the view. ▪ Small change to existing landscape elements and/or landscape character. ▪ Slight, but detectable impacts that do not alter the baseline of the receptor materially. ▪ Not readily noticeable.	Minor changes in a localised area.	Short term/temporary; partially reversible or reversible.
Negligible	▪ Occupies little or no portion of the view. ▪ Hardly noticeable. ▪ Limited or no change in existing landscape elements and/or landscape character. ▪ Barely distinguishable change from baseline conditions.	No change discernible.	Short term/temporary reversible.

2.4 LEVEL OF EFFECT AND SIGNIFICANCE

2.4.1. Professional judgement is used to combine sensitivity and magnitude to gauge the level of effect and determine whether it is significant or not.

2.4.2. The level of effect - and thus significance - will vary depending on the circumstances, the type and scale of development proposed, the baseline context and other factors. **Table 2-9** provides typical descriptors of the levels of landscape and visual effects.

2.4.3. The gradations of magnitude of change and level of effect used in the assessment represent a continuum, which are described on a four-point scale: **major; moderate; minor**; and **negligible**. Where appropriate, this assessment uses intermediate descriptors, such as **minor to negligible**, **minor to moderate** or **moderate to major**, where the assessor considers that the effect falls between the levels described in **Table 2-9**.

2.4.4. Effects can be either beneficial or adverse and, in some cases, neutral (neither beneficial nor adverse). Effects assessed as moderate or greater are considered to be significant within the context of the EIA Regulations.

Table 2-9 - Level of landscape and visual effect

Level of Effect	Landscape effect	Visual effect
Major	Considerable change over an extensive area of a highly sensitive landscape, fundamentally affecting the	The development would be a prominent feature or a noticeably discordant or enhancing feature substantially affecting overall visual amenity, or

Level of Effect	Landscape effect	Visual effect
	key characteristics and the overall impression of its character.	would result in a clearly noticeable change to a highly sensitive and well composed existing view. A clearly noticeable or substantial improvement or deterioration of the existing view.
Moderate	Small or noticeable change to a highly sensitive landscape or more intensive change to a landscape of medium or low sensitivity, affecting some key characteristics and the overall impression of its character	The development would be a noticeable feature or a somewhat discordant or enhancing feature affecting overall visual amenity, or would result in a noticeable change to a highly sensitive and well composed existing view, or would be prominent within a less well composed and less sensitivity view. A noticeable improvement or deterioration of the existing view.
Minor	Small change to a limited area of landscape of high or medium sensitivity or a more widespread area of a less sensitive landscape, affecting few characteristics without altering the overall impression of its character.	The development would be a visible but not particularly noticeable feature or a slightly discordant or enhancing feature affecting overall visual amenity, or would result in a small change to a highly sensitive and well composed existing view, or would be noticeable within a less well composed and less sensitivity view. A small improvement or deterioration of the existing view.
Negligible	No discernible improvement or deterioration to the existing landscape character.	No discernible improvement or deterioration in the existing view.

2.5 BASELINE ENVIRONMENT

2.5.1. The Project is located within Landscape Character Assessment for Bridgend County Borough[4] **Landscape Character Area (LCA)1 Llangynwyd Rolling Uplands and Forestry**. This LCA is located along the north-western fringes of the County Borough, to the west of Maesteg. The southern half of the LCA falls within the Western Uplands Special Landscape Area (SLA), and a section in the north falls entirely within the Foel y Dyffryn SLA. Other designations include Cwm Risca Site of Special Scientific Interest (SSSI), Margam Mountain Landscape of Special Historic Interest, Bwlwarcau hillfort and Llangynwyd Castle Scheduled Monuments, Llangynwyd Conservation Area and a number of Sites of Importance for Nature Conservation (SINCs). Parts of the west of the Study Area also fall within a number of LCAs of the Neath Port Talbot Landmap

[4] LUC, (2013). *Landscape Character Assessment for Bridgend County Borough*.

Landscape Assessment[5] such as LCA7 Mynydd Margam, LCA9 Cefn Cethin, LCA11 Cwm Afan and Cwm Pelenna, LCA12 Mynydd Penhydd, LCA13 Foel Trawsnant, and LCA14 Foel Fawr.

2.5.2. The character of LCA1 Llangynwyd Rolling Uplands and Forestry is described as:

"TOPOGRAPHY, GEOLOGY AND DRAINAGE

- *Strongly undulating upland landscape with a series of north-east facing slopes and hill summits ranging from 120 to 365 metres AOD* [above ordnance datum]*.*
- *Distinctive topography influenced by the heavily dissected Upper Coal Measures plateau greatly modified by the effects of glaciation.*
- *Landscape crossed by a number of fast-flowing springs and streams, flowing into the Llynfi Valley below.*

WOODLAND COVER

- *Dense coniferous forestry plantations on some slopes and hill summits (e.g. Garn Wen and Waun Lluest-wen) with linear broadleaved woodlands found along valley sides.*
- *Dark, straight plantation edges providing a stark contrast to the adjacent muted grasslands on rounded slopes.*

AGRICULTURAL LAND USE AND FIELD PATTERNS

- *Pastoral landscape with significant tracts of rough sheep and pony grazing on higher ground (particularly in the north).*
- *A strong pattern of irregular fields enclosed by hedgerows, tree belts and stone walls.*
- *Elevated land around Mynydd Ty-talwyn including large, regular semi-improved pastures divided by fencing.*

SEMI-NATURAL HABITATS

- *Valued habitats including heathland, blanket bog, acid grassland, fen and marsh (with significant areas defined as SINCs).*
- *Broadleaved semi-natural woodland on slopes and valleys, and nationally important marshy grassland (supporting marsh fritillaries) at Cwm Risca Meadow SSSI.*
- *Patches of bracken, gorse and rush pasture found throughout.*

ARCHAEOLOGY AND CULTURAL HERITAGE

- *Land west of Llangynwyd within the Margam Mountain Landscape of Special Historic Interest, with scheduled archaeological features including Y Bwlwarcau hillfort and the medieval Llangynwyd Castle.*
- *Cluster of nationally important medieval house platforms and settlement remains around Mynydd Ty Talwyn.*

[5] Neath Port Talbot County Borough Council, (2004). *Neath Port Talbot Landmap Landscape Assessment*.

SETTLEMENT AND ROAD PATTERN

- *Nucleated hill-top village of Llangynwyd (a Conservation Area), with prominent 15th century square church tower forming a local landmark.*
- *Farmsteads and small groups of dwellings thinly dispersed elsewhere.*
- *A small number of minor roads, tracks and footpaths cross through the landscape. The Ogwr Ridgeway Walk passes through the southern part of the LCA, and areas of higher ground are open access land.*

VIEWS AND PERCEPTUAL QUALITIES

- *A strongly rural and tranquil landscape despite the close proximity of nearby development at Maesteg.*
- *Tranquil qualities eroded by the presence of pylon lines, telecommunications masts and urban fringe land uses close to Maesteg, including a golf course.*
- *Southern rigdelines affording panoramic views across the County Borough, including wind farm developments on distant skylines.*
- *Intervisibility with Maesteg a strong feature of the northern half of the LCA."*

2.6 APPRAISAL

2.6.1. Landscape and visual effects are separate but interlinked topic areas. Landscape effects can be defined as the changes in the fabric and quality of the landscape as a result of a development through:

- Direct effects upon specific landscape elements such as individual trees, hedgerows and hedgerow trees, and woodland (including Ancient Woodland);
- Subtler effects upon the overall patterns of elements that give rise to landscape character and regional and local distinctiveness; and
- Effects upon special interests or values such as designated landscapes, built heritage assets and cultural associations.

2.6.2. Visual effects can be defined as changes to the visual amenity or quality of the view, particularly for people (visual receptors) for whom enjoyment of the view is a primary part of their activity, such as those engaging in outdoor recreation, or who will be exposed to the view for extensive periods, such as people in their homes. These would be defined as particularly sensitive receptors.

2.6.3. It is not deemed necessary to include photomontages at the ES stage. This is due to the relatively small scale of the works, the extent of the wooden poles and the minimal receptors affected.

LIKELY SIGNIFICANT EFFECTS

2.6.4. Potential significant landscape and visual effects which are predicted to occur are outlined below.

Construction activities

- Land preparation (site clearance, earthworks)
  - Removal of a high proportion of the landscape elements present under the baseline conditions such as individual trees, hedgerows and hedgerow trees, and woodland (including Ancient Woodland).

- Direct and temporary localised effects on landscape elements may be significant.
- Receptors include landscape elements within the Scoping Boundary.

- Presence of cranes, other machinery, vehicle movements, contractors' facilities and site access
  - Direct and temporary effects on LCA1 Llangynwyd Rolling Uplands and Forestry, Western Uplands SLA, Foel y Dyffryn SLA, and Llangynwyd Conservation Area.
  - Indirect and temporary effects related to the visibility of the construction activities and their effect on landscape character and the special qualities and characteristics of the landscape.
  - Temporary effects on views and visual amenity resulting from visibility of the construction activities within ~3 km distance, subject to detailed viewpoint analysis.
  - Receptors include host National, County and District LCAs such as LCA1 Llangynwyd Rolling Uplands and Forestry, residential properties within the ~3km Study Area, local roads and PRoW, and local visitor attractions and facilities within ~3km that are within the ZTVs including users of Special Landscape Areas and users of Conservation Areas.

Operational Activities

- Land preparation (site clearance, earthworks)
  - Residual impacts from removal of a high proportion of the landscape elements present under the baseline conditions such as individual trees, hedgerows and hedgerow trees, and woodland (including Ancient Woodland).
  - Direct and temporary localised effects on landscape elements before establishment of mitigation may be significant.
  - Receptors include landscape elements within the Scoping Boundary.

- Presence of overhead power lines
  - Changes to the local landscape character as a result of the proposed overhead section of cable route during operational.
  - Changes impacting the composition of key views including from surrounding residential, open access land and special landscape areas, public rights of way (PROWs); and the setting of built assets including Conservation Areas and Listed Buildings.

2.7 RECOMMENDATIONS AND MITIGATIONS

2.7.1. Through an iterative design process, involving close consultation with the design team and the local planning authorities (LPAs), measures can be embedded into the design as well as incorporated into constructions practices. An initial list of mitigation measures are outlined below, which will reduce negative landscape, visual and ecological effects and create positive new habitats:

- Design team and contractors to consider the different landscape and visual effects of all elements of the development including vegetation removal, construction practices, and any converter stations;
- Minimise the loss of existing vegetation of ecological value (particularly long established hedgerows and veteran trees);
- Introduce new planting where possible which is sympathetic to the surrounding landscape character and, in consultation with the ecology team, reflective of native species;

- Consider the soil types, seeding mixes and management regimes to create species-rich meadows and glades within areas of new screen planting; and
- Consider the potential for introducing offsite planting in discussion with adjacent landowners to reduce effects of middle and long distance views.

3 TRAFFIC AND TRANSPORT

3.1 INTRODUCTION

3.1.1. This chapter of the Scoping Report sets out the proposed methodology for the assessment of likely significant traffic and transport effects within the EIA, including identification of the following: key data sources, the determination method for traffic and transport study area and transport receptors. It also provides an overview of the existing baseline transport context.

3.1.2. The traffic and transport assessment will be produced with reference to key national and local policy, legislation and the following technical guidance:

- Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (EATM) (IEMA, 2023)[6] which is the current guidance for assessing potentially significant environmental impacts.
- Department for Transport (DfT) Circular: Strategic Road Network and the Delivery of Sustainable Development (Department for Transport, 2022)[7] which sets out the ways National Highways will engage to deliver sustainable development whilst safeguarding the primary function and purpose of the Strategic Road Network (SRN).

3.2 INFORMATION SOURCES AND STUDY AREA

INFORMATION SOURCES

3.2.1. The sources of information used for this scoping chapter are identified in **Table 3-1**.

Table 3-1 – Information sources used for the traffic and transport chapter

Source	Description
Google Maps[8]/Streetview/Google Earth Pro.	Mapping data and imagery.
Neath Port Talbot Council[9].	Public Rights of Way information.
Bridgend County Borough Council[10].	Public Rights of Way information.

[6] Davis, S., Hoare, D., Howard, R. and Ross, A., (2023). *Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Road Traffic and Movements (EATM).*
[7] Department for Transport, (2022). *Circular 01/2022 Strategic road network and the delivery of sustainable development*. Available online at: https://www.gov.uk/government/publications/strategic-road-network-and-the-delivery-of-sustainable-development/strategic-road-network-and-the-delivery-of-sustainable-development [Accessed September 2024].
[8] Google, (2024). *Google Maps*. Available online at: https://www.google.co.uk/maps [Accessed September 2024].
[9] Neath Port Talbot Council, (2024). *Rights of Way*. Available online at: https://maps.npt.gov.uk/rights_of_way/index.html [Accessed September 2024].
[10] Bridgend County Borough Council, (2024). *Public Rights of Way*. Available online at: https://maps.bridgend.gov.uk/webmap9/Map.aspx?MapName=OSWMTSBasemap [Accessed September 2024].

Source	Description
National Rail[11].	Rail service information.
FirstBus[12].	Bus service information.
Sustrans[13].	National Cycle Network (NCN) route information.

3.2.2. In addition to the sources within **Table 3-1**, the traffic and transport assessment within the EIA will likely refer to the sources set out below:

- DfT STATS 19 accident data accessed via an in-house WSP tool known as Collision Analysis – UK Wide Dashboard.
- DfT[14] average annual daily traffic (AADT) flow data from count point locations on local and strategic roads within the traffic and transport study area. It is proposed that DfT AADT data will be used at survey locations where there has been a manual count in 2019 (pre-COVID pandemic) or 2023 (post-COVID pandemic). The COVID pandemic UK travel restrictions impacted traffic flows between 2020 and 2022 and therefore this period does not reflect 'normal' travel conditions.
- Where a 2019 or 2023 DfT manual count data set is not available for roads within the study area that are to be assessed, traffic surveys will be undertaken.
- Adoption status of roads on the highway network from Council held information.

STUDY AREA

3.2.3. The transport network may be impacted by the Project in the following ways:

- Movement of Project traffic on the highway network;
- Crossing of highways by the Overhead Line (OHL)/underground cable;
- The underground line being routed within carriageways; and
- Crossing of Public Rights of Ways (PRoWs), navigable waterways and railways.

3.2.4. It is proposed that the assessment set out within the traffic and transport chapter of the EIA will assess the impact of the movement of Project traffic on the highway. As will be set out within **Section 3.3**, it is proposed that the assessment of traffic and transport effects will assess sections of highway on the construction traffic route. The construction traffic route is currently unknown but will

[11] National Rail, (2024). *National Rail*. Available online at: https://www.nationalrail.co.uk/ [Accessed September 2024].
[12] FirstBus, (2024). *Timetables*. Available online at: https://www.firstbus.co.uk/south-west-wales/plan-journey/timetables [Accessed September 2024].
[13] Sustrans, (2024). *The National Cycle Network*. Available online at: https://www.sustrans.org.uk/national-cycle-network/ [Accessed September 2024].
[14] Department for Transport, (2024). *Road traffic statistics*. Available online at: https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints [Accessed September 2024].

likely consist of highway links that connect the Project access locations (including the construction compounds and laydown areas) to each other and to the SRN.

3.2.5. In addition, an outline Construction Traffic Management Plan (CTMP) and outline Public Rights of Way Management Plan (PRoWMP) will be prepared, as part of the EIA, to identify impacts on the transport network due to crossings of the over/underground line and routing of the line within the highway.

3.3 METHODOLOGY

3.3.1. EATM outlines that the greatest environmental change will generally be when the Project traffic is at the largest proportion of the total flow. Therefore, the assessment of traffic and transport effects within the EIA will be undertaken for the construction phase with the largest traffic generation as this will represent the worst-case scenario of traffic and transport effects.

3.3.2. EATM sets out two rules to establish the need for an environmental assessment of traffic and transport effects on highways receptors, relating to the proportional change in traffic flows on highways with the Project traffic:

- *"Rule 1: Include highway links where traffic flows will increase by more than 30% (or where the number of heavy goods vehicles will increase by more than 30%).*
- *Rule 2: Include highway links of high sensitivity where traffic flows have increased by 10% or more".*

3.3.3. Rule 1 and Rule 2 will be used to identify highways within the traffic and transport study area that required detail assessment within the EIA.

TEMPORAL SCOPE

3.3.4. As set out below the phase of the Project that will generate the most traffic movements will be the construction phase, therefore it is proposed that only the construction phase will be assessed with respect to traffic and transport effects.

Construction Phase

3.3.5. The number of construction traffic movements across the Project construction programme is not currently known. The anticipated peak daily construction traffic movements for the Project will be identified within the EIA traffic and transport chapter and will be assessed as the worst-case scenario of traffic impacts.

3.3.6. The year in which the peak daily construction traffic movements is anticipated to occur will be the year of assessment. Baseline traffic flows will be growthed (increased based on forecasts of future traffic), using growth factors derived from the DfT's Trip End Model Presentation Program (TEMPro), to the future year. The percentage change between the future year baseline traffic flow and future year with the Project peak construction traffic will be assessed against the EATM Rule 1 and Rule 2 thresholds, to determine which highways sections required detailed assessment.

Operational Phase

3.3.7. During the operational phase, traffic movements associated with the Project will be minimal, comprising trips for inspection, repair and maintenance purposes. Vehicles used for repair work are

likely to be similar to those used during construction, however, these would be infrequent. Therefore, it is proposed to scope this out of the assessment.

Decommissioning Phase

3.3.8. The operation life of the Project is anticipated to be up to 30 years. Post operation the above and below ground infrastructure is assumed to remain in situ. Therefore, the development traffic movements associated with the Project decommissioning phase will be lower than those associated with the construction phase. Therefore, it is proposed to scope this out of the assessment.

ASSESSMENT

Likely Significant Traffic and Transport Effects and Receptors

3.3.9. The potential likely significant traffic and transport effects of the Project that are identified within EATM are summarised below.

- Severance: the separation of people from places and other people and places or impede pedestrian access to essential facilities.
- Driver delay: traffic delays to non-development traffic.
- Non-motorised user amenity: the effect on the relative pleasantness of a pedestrian journey resulting from changes in traffic flow, traffic composition and pavement width/separation from traffic.
- Non-motorised user delay: the ability of people to crossroads as a result of changes in traffic volume, composition and speed, the level of pedestrian activity, visibility and general physical conditions of the Project.
- Fear and intimidation: the change in fear and intimidation levels experienced by people as a result of an increase in traffic volume and its proximity or the lack of protection caused by such factors as narrow pavement widths.
- Road safety: the risk of accidents occurring where the Project is expected to produce a change in the character of traffic.
- Impacts of Abnormal Indivisible Loads (AILs). AILs are long, wide or heavy loads that cannot reasonably be divided into smaller/lighter loads for road transport. In the UK there are set thresholds for these criteria[15].
- Impacts of Hazardous Loads.

3.3.10. These effects will be assessed within the EIA traffic and transport chapter for highway sections that are identified as requiring detailed assessment with the exception of impacts of AIL movements and hazardous load movements. These effects are scoped out of the assessment as no AIL or hazardous load movements are anticipated to be required for the Project.

[15] For a summary of criteria see National Highways (2024) Abnormal Loads and the ESDAL system https://nationalhighways.co.uk/road-safety/abnormal-loads-and-the-esdal-system/

3.3.11. Transport receptors are the users or beneficiaries of the highways network assets and facilities. EATM identifies the following key user groups: non-motorised users, PRoW users, motorists/freight vehicles, public transport and emergency services. The EATM further identifies sensitive locations or users that may be affected:

- *"People at home;*
- *People at work;*
- *Sensitive and/or vulnerable groups (including young age; older age; income; health status; social disadvantage; and access and geographic factors);*
- *Locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools);*
- *Retail areas;*
- *Recreational areas;*
- *Tourist attractions;*
- *Collision clusters and routes with road safety concerns: and*
- *Junctions and highway links at (or over) capacity".*

Determination of Receptor Sensitivity, Magnitude of Change and Significant of Effect

3.3.12. Each highway section that forms part of the construction traffic route will be assigned a receptor sensitivity of high, medium, low or negligible based on the guidance provided within EATM and professional judgement. This includes consideration of proximity of sensitive receptors to the roads to be used by construction traffic and the highway environment, as summarised in **Table 3-2**.

Table 3-2 – Receptor sensitivity summary

Sensitivity	Description/Reason	Receptor
High.	Highway links with a high sensitivity to changes in traffic flows include routes: ▪ With sensitive receptors alongside them (such as schools, colleges and playgrounds); and/or ▪ Where there are land uses which result in high volumes of pedestrian/cycle users and the road is narrow and/or footway provision is poor or non-existent and/or existing traffic volumes are high for the type of road resulting in congestion and road safety issues.	Occupants of land uses alongside the highway link and users of the highway link.
Medium.	Highway links with a medium sensitivity to changes in traffic flows include routes: ▪ With some sensitive receptors alongside them (such as retail areas); and/or ▪ Where there are land uses which result in some pedestrian/cyclist users, road design and footway provision is	Occupants of land uses alongside the highway link and users of the highway link.

Sensitivity	Description/Reason	Receptor
	adequate/appropriate and/or existing traffic volumes can be accommodated for the type of road but approaching capacity.	
Low.	Highway links with low sensitivity to changes in traffic flows include routes: ▪ With no sensitive receptors and some land uses alongside and no/very limited pedestrian/cyclist users and/or road design and footway provision is appropriate and existing traffic volumes can be accommodated for the type of road.	Occupants of land uses alongside the highway link and users of the highway link.
Negligible.	Highway links with negligible sensitivity to changes in traffic flows include routes: ▪ With no sensitive receptors and very few land uses alongside them, which have no direct access or are sufficiently set back from the carriageway, and no/very limited pedestrian/cyclist users and existing traffic volumes can be accommodated for the type of road.	Users of the highway link.

3.3.28. For highways links where the sensitivity is judged as 'High' or 'Medium', Rule 2 is applied (sensitive areas where traffic flows are predicted to increase by 10% or more). For highway links where the sensitivity is judged as 'Low' or 'Negligible', Rule 1 is applied (areas where traffic flows are predicted to increase by more than 30% or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%).

3.3.29. For each highway section that forms part of the construction traffic route, the magnitude of change will be determined (high, medium, low or negligible) based on the guidance provided within EATM and professional judgement. This criteria is summarised in **Table 3-3**.

Table 3-3 – Magnitude of change summary

Traffic and Transport Impact	Magnitude of Change			
	High	Medium	Low	Negligible
Severance	Change in total traffic or HGV flows over 91%.	Change in total traffic or HGV flow of 61% to 90%.	Change in total traffic or HGV flows of 31 to 60%.	Change in total traffic or HGV flows of less than 30%.

	Context should, also, be considered including the local population and number of local facilities potentially impacted. EATM states caution should be applied with applying these thresholds to highway links with low baseline flows.			
Driver Delay.	High increase in queuing at junctions and/or congestion on road links.	Medium increase in queuing at junctions and/or congestion on road links.	Low increase in queueing at junctions and/or congestion on road links.	Low or no increase in queuing at junctions and/or congestion on road links.
Non-motorised User Amenity.	A halving or doubling of traffic flow (or HGV flow) can be used as a broad threshold when considered in the local context and applied with caution. Assignment of magnitude is based on a variety of factors including general level of pedestrian activity, visibility, and physical conditions such as traffic flow, traffic composition, crossing points and pavement width/separation from traffic.			
Non-motorised User Delay.	Generally, increases in traffic may lead to greater delay, though is dependent on the level of non-motorised users' activity in the area. Magnitude is assigned on pedestrian delay experienced when crossing highways links considering a range of factors including crossing type, pedestrian flows, traffic levels, visibility and general highway condition.			
Fear and Intimidation.	Magnitude is assigned based on the scoring system provided in EATM (which is dependent on 18hr average traffic flow; 18hr average HGV traffic flow and vehicle speed). The scores comprise extreme (71+); great (41 to 70); moderate (21 to 40) and small (0 to 20).			
	Two step change in level score of fear and intimidation.	One step change in level score of fear and intimidation and >400 average 18hr vehicle increase or >500 HGV 18hr vehicle increase.	One step change in level score of fear and intimidation and <400 average 18hr vehicle increase or <500 HGV 18hr vehicle increase.	No change to step in level score of fear and intimidation.
Road Safety.	Magnitude is assigned by reviewing existing collision patterns and trends based upon existing personal injury accident records and the forecast increase in traffic that may change the risk of serious and fatal injuries.			

3.3.55. Significance of likely traffic and transport impacts will be derived by considering the receptor sensitivity and the magnitude of change as defined within **Table 3-4** (shading denotes significant impacts).

Table 3-4 – Traffic and transport significance evaluation matrix

Receptor Sensitivity	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major (Significant).	Major (Significant).	Moderate (Significant).	Negligible (Not Significant).
Medium	Major (Significant).	Moderate (Significant).	Minor (Not Significant).	Negligible (Not Significant).
Low	Moderate (Significant).	Minor (Not Significant).	Negligible (Not Significant).	Negligible (Not Significant).
Negligible	Negligible (Not Significant).	Negligible (Not Significant).	Negligible (Not Significant).	Negligible (Not Significant).

Cumulative Effects

3.3.56. As outlined previously, TEMPro will be used to growth the baseline traffic flow data to the future year of assessment. The future year will be defined as the time period in the construction programme when daily construction traffic will be highest. DfT's TEMPro forecasts of traffic growth take into account national projections of population, employment, housing, car ownership and trips rates. Therefore, TEMPro should account for all cumulative and anticipated development within the local plans at the time of its production.

3.3.57. Consideration would be given as to whether any of the identified receptor locations are likely to be subject to cumulative effects due to traffic and transport effects generated by other proposed developments in the area that are included within the TEMPro growth factor (i.e. recently approved development that was not part of a local plan allocation). If this is likely to be the case, a cumulative assessment would be undertaken.

3.4 BASELINE ENVIRONMENT

3.4.1. This section briefly outlines the transport network in the vicinity of the Project. The details within this section will be expanded within the EIA traffic and transport chapter.

LOCAL ROAD NETWORK

3.4.2. The sections of the local road network that form the construction traffic route (between the Project construction access(es) and the SRN and/or point of origin on the local road network) will be descripted within the traffic and transport chapter within the EIA, once these routes are determined.

STRATEGIC ROAD NETWORK

3.4.3. The nearest roads on the SRN are the M4, (south of the Project) and the A465 (northwest of the Project). The M4 provides connections to the east and west and the A465 to the northeast.

PUBLIC TRANSPORT

3.4.4. The nearest railway stations to the Project are Maesteg, Maesteg (Ewenny Road) and Garth (Bridgend) which are all on the same railway line. They are served by services to Cardiff Central and Cheltenham Spa[11]. The railway station locations are shown in **Figure 3.1**.

3.4.5. The nearest bus stops to the Project are on the B4282 (Neath Road) and the A4063. The local bus services that route near the Project are as follows[12], the routes of these services are shown in **Figure 3.1**:

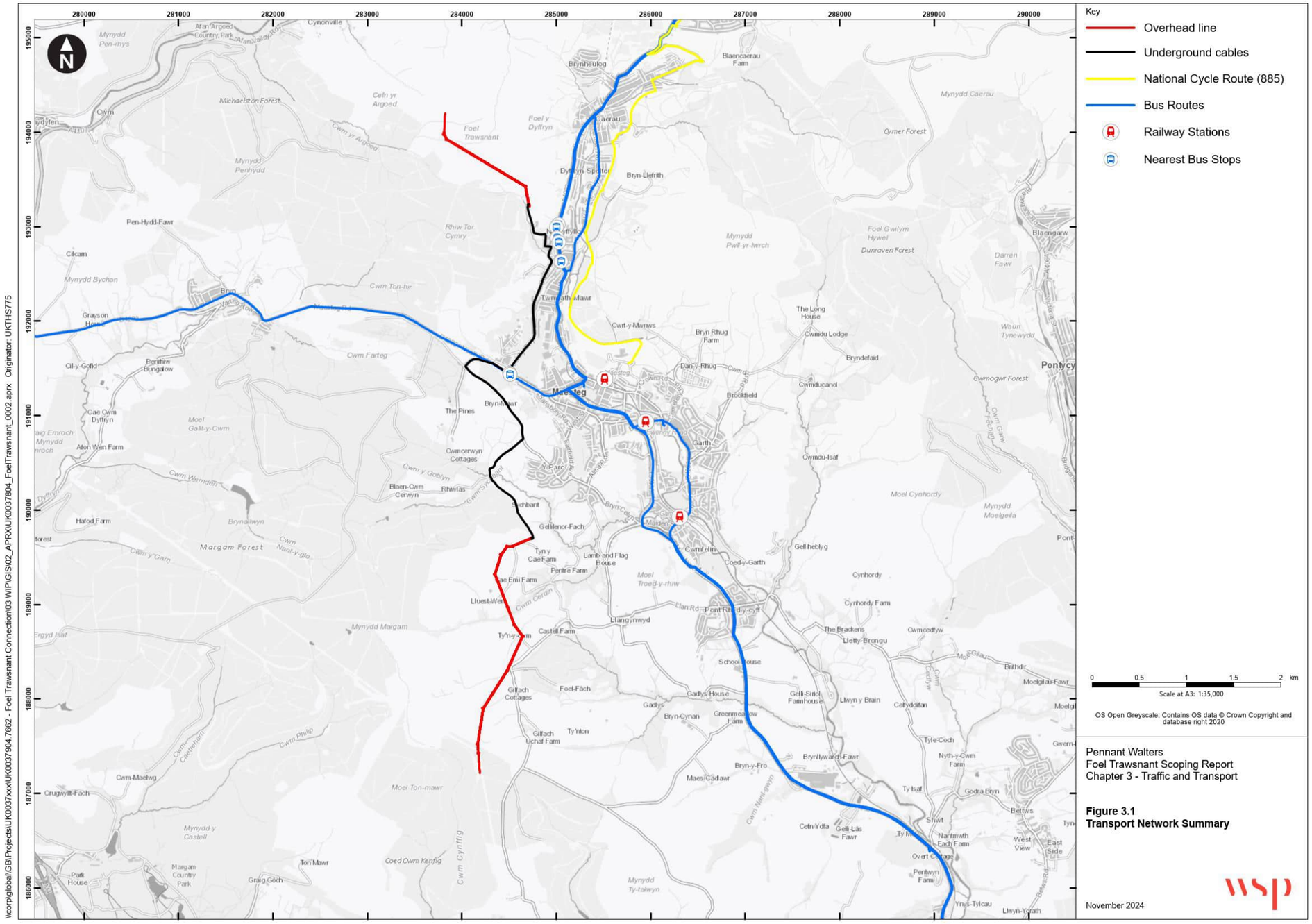
- **70 (Firstbus**) – operates between Cymmer and Bridgend, with a minimum of 13 services per day per direction Monday to Friday and ten services per direction on Sunday.
- **71 (Firstbus)** – operated between Cymmer and Bridgend, Monday to Saturday with 11 services per day per direction.
- **X3 (Firstbus)** – operates between Port Talbot and Maesteg, Monday to Saturday with eight services per day per direction.

ACTIVE TRAVEL

3.4.6. The nearest NCN route[13] to the Project is the 885 which currently routes between Maesteg and Cymmer. The majority of the 885 route is off-carriageway with some sections of on-carriageway route. At Cymmer there is connection to NCN route 887, which links to Port Talbot, Aafan Forest Park and other NCN routes. Route 885 is planned to connect south to Bridgend; however, this section is still under development. The section of route 885 near the Project is shown in **Figure 3.1**.

3.4.7. There are PRoWs in the vicinity of the Project, those that interact with the Project are outlined below in **Section 3.5**.

Figure 3-1 - Transport Network Summary



3.5 APPRAISAL

LIKELY SIGNIFICANT TRAFFIC AND TRANSPORT EFFECTS

3.5.1. The peak daily construction traffic flow and the construction traffic routes will be identified within the ES traffic and transport chapter, and the anticipated likely significant traffic and transport effects will be assessed.

3.5.2. It should be noted that impacts of construction traffic will be temporary in duration, and therefore effects will be temporary.

PROJECT CROSSINGS OF THE TRANSPORT NETWORK AND IN HIGHWAY PROPOSED LOACTIONS

3.5.3. In addition to the likely significant traffic and transport effects assessed within the EIA traffic and transport chapter, there are transport impacts that will be identified within the CTMP and PRoWMP that will be produced as part of the EIA. These management plans will set out mitigation measures to minimise the impact of construction traffic. This section outlines the Project crossings and interactions with the national rail network, navigable waterways, highways network and PRoW network. These crossings and interactions will be reviewed at the EIA stage once the Project design is finalised, and appropriate mitigation set out within the CTMP and PRoWMP.

Rail Network Crossings

3.5.4. The Project line does not cross any of the national railway network lines.

Navigable Waterways Crossings

3.5.5. The Project line does not cross any navigable waterways.

Public Rights of Way Crossings and Interactions

3.5.6. **Table 3-5** summarises the Project's interactions/crossings of the PRoW network within the Neath Port Talbot Council boundary and Bridgend Council Boundary.

Table 3-5 – Project Crossings and Interactions with the Project

PRoW within Neath Port Talbot Council Boundary	
Footpaths crossed by Project OHL.	9/73.PT/1
PRoW within Bridgend Council Boundary	
Footways crossed by Project OHL.	MAE/13/3, MAE/15/1, MAE/15/2, MAE/50/1, MAE/50/2, LDM/15/1

Footways with a terminus at the Project underground line (non-urban only).	MAE/52/2, MAE/52/1, MAE/49/1, MAE/55/2, MAE/48/1, MAE/2A/1
Bridleways with a terminus at the Project underground line.	MAE/51/1
Bridleways crossed by Project OHL.	LDM/17/1 and MAE/1/1

Highways Crossings and In Carriageway Sections

3.5.7. The Project has the potential to impact on highways via crossings of highways by the OHL or underground line and in carriageway sections of the underground line.

Highway Crossings

3.5.8. The draft Project route does not cross any adopted highways.

3.5.9. Should changes to the Project route result in crossings of the highway, the impact and required mitigation measures for these crossings will be identified within the outline CTMP.

In Highway Sections

3.5.10. The Project has in highway sections of underground cable as set out below:

- Kings Terrace – from Davies Terrace to Unnamed Road;
- Unnamed Road – from Kings Terrace;
- Davies Terrace;
- Garwen Road;
- Heol Ty Gwyn;
- B4282 (Neath Road) – between Heol Ty Gwyn and Unnamed Road;
- Unnamed Road – from B4282 to Unnamed Road near Keir Hardie Road; and
- Unnamed Road – from Unnamed Road from the B4282 to near Sychbant Farm.

3.5.11. It should be noted that the sections of in highway cable may be subject to change as the Project design progresses.

3.5.12. The highway adoption status (adopted or unadopted) of the unnamed roads will need to be determined once the Project route is confirmed.

3.6 RECOMMENDATIONS AND MITIGATIONS

RECOMMENDATIONS

3.6.1. In summary the following are proposed to be scoped into the traffic and transport assessment within the EIA:

- Impacts of the Project construction traffic on highways that form the traffic and transport study area during the construction phase.

3.6.2. Additionally, impacts of the Project on PRoW and impacts on the highway network due to in carriageway works and crossing of highways by the Project will be identified within an outline CTMP and an outline PRoWMP, where mitigation measures will be set out to ensure impacts are minimised.

3.6.3. It is proposed that the following are scoped out of the assessment of traffic and transport effects:

- Impacts during the construction phase on navigable waterway and the rail network, due to the Proposed route not crossing any of these.
- Impacts during the operational phase of the development, due to the minimal traffic movements generated during this phase (set out in **Section 3.3**).
- Impacts resulting from AIL movements or the movement of hazardous loads, as none are anticipated (set out in **Section 3.3**).
- Impacts during the decommissioning phase of the development, due to the lower traffic movements generated during this phase than in the construction traffic phase (set out in **Section 3.3**).

MITIGATION

3.6.4. Mitigation measures relating to traffic and transport effects are the production of an outline CTMP and an outline PRoWMP which will identify impacts, in addition to those assessed within the EIA traffic and transport assessment, of the Project construction on highways and PRoWs. These plans will provide a comprehensive framework for packages of measures to minimise the impact of the Project construction on the highway and PRoW networks and ensure safety. It should be noted that no permanent effects on PRoWs are anticipated.

4 ECOLOGY

4.1 INTRODUCTION

4.1.1. This section of the Scoping Report sets out the overall approach that will be taken in the EIA for ecology. This section assesses the likely significant effects (LSE) arising from the Project upon ecology and the potential Zone of Influence (ZoI) for these effects. Ecological receptors considered include protected and notable species, habitats and designated sites.

4.2 INFORMATION SOURCES AND STUDY AREA

PREVIOUS ECOLOGICAL SURVEYS

4.2.1. Previous ecological surveys have been carried out to support the Project. These included a Preliminary Ecological Appraisal (PEA) carried out by CSA Environmental in May 2024[16]. This report identified intensively managed agricultural habitats with upland acid grassland and purple moor-grass *Molinia caerulea* and rush pastures, bordered by hedgerow and woodland habitats. The report identified that the Project would pass through parcels of Priority Habitat (as listed in Section 7 of the Environment (Wales) Act 2016) and Ancient Woodland Inventory (AWI). Suitability for bats, badger (*Meles meles)*, dormouse (*Muscardinus avellanarius)*, otter (*Lutra lutra)*, water vole (*Arvicola amphibius)*, brown hare (*Lepus europaeus)*, harvest mouse (*Micromys minutus)*, hedgehog (*Erinaceus europaeus)*, breeding birds, reptiles and amphibians were identified. Since then, further water vole and great crested newt (GCN) (*Triturus cristatus)* surveys have been carried out.

4.2.2. The first of two water vole surveys carried out by CSA Environmental identified evidence of water vole in the northern-most section of the Project. It was considered likely that water vole were present in the surrounding areas due to the suitability of the habitat, which included acid and marshy grassland. The second of the two water vole surveys found water vole signs to be lower in frequency (personal communication, 30th October 2024).

4.2.3. The eDNA surveys carried out by CSA Environmental returned negative results for GCN in four ponds within the vicinity of the Project (personal communication, 25th July 2024).

STUDY AREA

4.2.4. WSP UK Ltd. (‘WSP’) have since carried out a PEA which, along with the previous survey data outlined above, forms the basis of this Scoping Report section.

4.2.5. The Study Area for ecology extends up to 10km from the Project boundary. The Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment for the UK and Ireland were used to determine the extent of the Study Area (CIEEM, 2018)[17].

[16] CSA Environmental (2024). Foel Trawsnant Wind Farm – Preliminary Ecological Appraisal. October 2024.

[17] CIEEM, (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

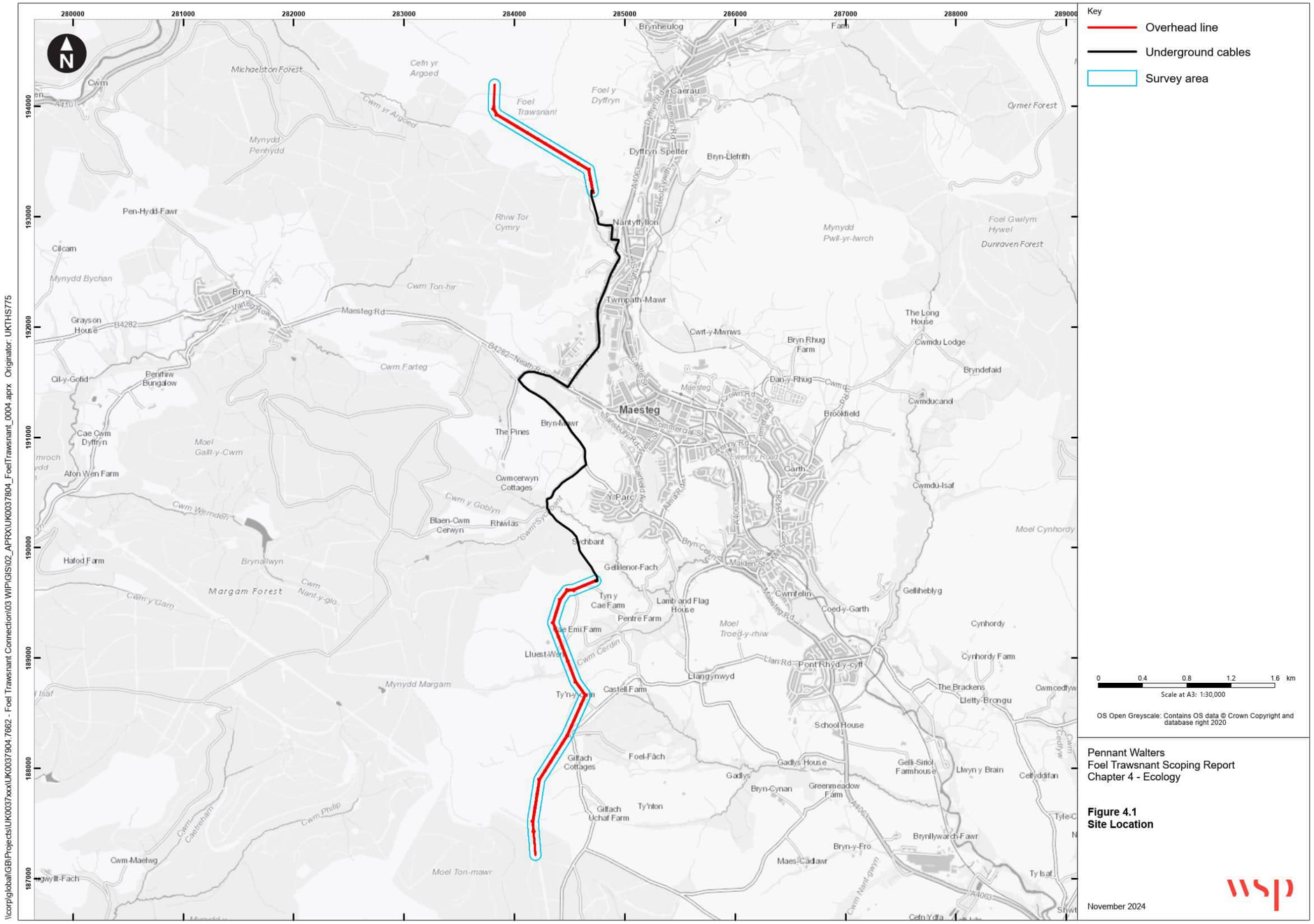
4.2.6. The ecological baseline will be determined through a combination of desk-based study and field surveys for protected and notable habitats and species of conservation concern. The Study Area will vary for each ecological feature in accordance with best practice guidelines and the likely ZoI of impacts. The Study Area will be determined as a result of the potential for impacts and where relevant, consideration of species behaviour, including their mobility. These are determined as follows:

- Internationally and nationally designated sites within 10km of the Project;
- Locally/non-statutory designated sites up to 2km from the Project;
- Habitats of conservation importance within 1km of the Project; and
- Desk study records of protected and notable species up to 2km from the Project.

4.2.7. Ecological surveys have been carried out for the Project within the survey area (defined as the Project, plus a 50m buffer – as shown in **Figure 4-1**). The survey area only includes the OHL sections, as the UGC will be mainly within the existing built environment, confined to the highways boundary and existing tracks. In the small section to the north where the UGC travels through poor semi-improved grassland, the potential significant effects are deemed negligible, due to the distance travelled (approx. 250m), the type of habitat present and the method of construction (likely cable plough).

4.2.8. The study and survey area for the Project have been designed to account for any amendments that may be required once protected species surveys are complete. For example, alterations to the Project design to mitigate any significant ecological impacts to species (e.g. avoidance of important bat roosts).

Figure 4-1 - Site Location



4.3 METHODOLOGY

4.3.1. Assessment methods for all potentially significant effects will be based on the methodology described in the CIEEM Guidelines for Ecological Impact Assessment in the UK (2018).

4.3.2. The importance and sensitivity of ecological features will be evaluated with reference to:

- the quality or extent of designated sites or habitats;
- to habitat or species rarity, to the extent to which they are threatened throughout their range; or
- to their rate of decline, and their legal status.

4.3.3. The level of importance is then qualified at a relevant geographical scale.

4.3.4. Effects are deemed significant if they affect the structure and function of a site, or they impact upon the conservation status of a habitat, species or constituents of a species assemblage.

SIGNIFICANCE CRITERIA

4.3.5. This section sets out the methodology that will be followed to assess the potential ecological impacts of the Project, considering both the construction and operational phases. The construction phase includes enabling works, clearance, earthworks and construction activities.

4.3.6. The methodology for this assessment is in accordance with guidance provided by CIEEM (2018) and follows the key stages listed below:

- Establishing the Study Area and Survey Area;
- Collating information on the baseline studies and evaluation of ecological receptors;
- Identification of Important Ecological Features (IEFs);
- Identification and characterisation of potential impacts;
- Identification and assessment of significant effects from potential impacts upon IEFs; and
- Identification and assessment of residual effects.

IDENTIFICATION OF IMPORTANT ECOLOGICAL FEATURES

4.3.7. The value of sites, species and habitats will be evaluated in line with CIEEM guidelines with reference to their importance in terms of conservation value (which relates to the need to conserve representative areas of different habitats and the generic diversity of species populations); and their legal status. For the purposes of this assessment, sites, species populations, species assemblages and habitats will be valued using the following geographical scale:

- International;
- National (UK or Wales);
- County;
- Local;
- Of value within the context of the project; and
- Negligible.

4.3.8. Guidelines on ecological impact assessment note the difficulty of devising valuation criteria that can be consistently applied to designated sites, species and habitats in the same way in all parts of the country. It recommends an approach to valuation that involves teasing apart the different values that can be attached to the ecological features under consideration. However, it is beneficial to give

examples of the sorts of criteria used in the valuation process, and these are summarised in **Table 4-1**.

Table 4-1 – Examples of Criteria used to Evaluate Important Ecological Features

Level of Value	Definition
International	An internationally important site, e.g. Special Protection Area (SPA), Special Area of Conservation (SAC), or Ramsar site (or a site considered worthy of such designation); a regularly occurring population of an internationally important species (listed on Annex IV) of the Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora; the 'Habitats Directive'[18]); 1% of the known international population of a particular species.
National/UK or National/Wales.	A nationally designated site, e.g. Site of Special Scientific Interest (SSSI), or a site considered worthy of such designation; a viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller areas of such habitat which are essentially to maintain the viability of a larger habitat; any regularly occurring population of a nationally important species, e.g. listed on Schedules 5 and 8 of the Wildlife and Countryside Act (WCA) 1981 (as amended); a feature identified to be a priority habitat or species under Section 7 of the Environment Wales Act 2016[19], 1% of the known UK population of a particular species.
County	Areas of internationally or nationally important habitats which are degraded but are considered readily restored; viable areas of key habitat identified in Local Biodiversity Action Plans (LBAPs), or smaller areas of such habitat which are essential to maintain the viability of a larger whole, a site designated as a Wildlife Site or a Site of Interest for Nature Conservation (SINC), a regularly occurring, locally significant number of a nationally important species; 1% of the known population of a particular species within the county.
Local	Designated sites including: Local Nature Reserves (LNRs) designated in the local context. Trees that are protected by Tree Preservation Orders (TPOs) and areas of habitat that are considered to enrich the habitat resource in the local context (such as veteran trees), including features of value for migration, dispersal or genetic exchange.
Of value within the context of the project.	Woodland plantations, structure planting, small extents of species-rich grassland or another species-rich habitat that is not included in the LBAP.

[18] The European Commission. (1992). Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01992L0043-20130701
[19] Welsh Government. (2016). Environment (Wales) Act 2016. Available at: https://www.legislation.gov.uk/anaw/2016/3/contents

Level of Value	Definition
Negligible	No intrinsic natural conservation value associated with the habitat. Generally, these are areas of hardstanding or buildings.

4.3.9. It is impractical and inappropriate for an assessment of the ecological effects of a development to consider every species and habitat that may be affected. Instead, it focuses on IEFs which are the species and habitats present within the ZoI of the Project that are of sufficiently high value that certain impacts upon them, as a result of the development, could result in a significant effect.

4.3.10. The description and valuation of ecological features will consider any likely changes including, for example:

- trends in the population size or distribution of species;
- likely changes to the extent of habitats; and
- the effects of other proposed developments or land-use changes.

4.3.11. Due consideration will be given to non-important ecological features (i.e. those nature conservation sites, species and habitats below local importance) throughout the construction and operation period, with regard to legislative protection.

MAGNITUDE OF POTENTIAL IMPACTS

4.3.12. Ecological receptors are usually non-statutory designation sites/ nature conservation sites, habitats, species assemblages or communities, or populations or groups of a species. Impacts can be permanent or temporary, direct or indirect, and can be cumulative. These factors are brought together to assess the magnitude of the impact on IEFs and, wherever possible, the magnitude of the impact is quantified. Professional judgement is then used to assign the impacts on the IEFs to one of four classes of magnitude, defined in **Table 4-2**.

Table 4-2 – Magnitude of Potential Impacts

Magnitude	Definition
High	A permanent or long-term effect on the extent or size or integrity of a site, habitat, species assemblage or community, population or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.
Medium	A permanent or long-term effect on the extent or size or integrity of a site, habitat, species assemblage or community, population or group. A short-term effect that will adversely affect the integrity of a receptor in a permanent manner. If adverse negative effect, this is unlikely to threaten its overall sustainability, if positive this is likely to be sustainable but is unlikely to significantly enhance its conservation status.
Low	A permanent or temporary, long-term reversible or short-term effect on a site, habitat, species assemblage or community, population or group

Magnitude	Definition
	whose magnitude is detectable but will not threaten/change its conservation status.
Negligible	A short-term reversible effect on the extent, size or integrity of a site, habitat, species assemblage or community, population or group that is within the normal range of natural variation and has no discernible lasting effect.

4.3.13. Potential impacts are characterised initially in the absence of any mitigation, except where this is integral to the design of the Project (embedded mitigation).

DEFINING SIGNIFICANCE OF EFFECT

4.3.14. The significance of the predicted effects on receptors arising from the identified impacts of the Project is assessed. Significance is assessed as **Adverse**, **Beneficial** or **Not Significant** on the integrity of an IEF and/or the conservation status of IEFs within a given geographical area.

4.3.15. In considering the integrity and conservation status of the receptor, the key considerations are:

- Will any site/ecosystem processes be removed or changed or subject to disturbance?
- What will be the effect on the nature, extent, structure and function of component habitats?
- What will be the effect on the average population size and viability of component species?

4.3.16. In determining the significance of a potential effect, the above factors including the value of the feature, magnitude of the potential impact, and the duration of the impact are considered.

4.3.17. Where possible, the assessment of these parameters needs to be expressed quantitatively and to be based on research and published information. However, it is also recognised that many ecological effects are complex and poorly understood, therefore professional and qualitative judgements are often required to prescribe the significance of the effect.

SOURCE-PATHWAY-RECEPTOR APPROACH

4.3.18. The source-pathway-receptor approach will be used to understand the mechanisms by which the Project could result in LSEs on ecological resources. The approach starts by identifying potential sources of effects, defining the ZoI, and then mapping the progression of the effect along potential mitigation pathways. Where it was observed that an effect was potentially connected, via a pathway, to an ecological resource, an analysis was undertaken to assess the implications for the resource, including the likely sensitivity of the resource.

4.3.19. In order for an effect to occur, all three elements of the concept must be in place. The absence or removal of one of the elements of the concept means there is no likelihood for the effect to occur.

4.3.20. Habitats and species which may be impacted by the Project are considered to be within the ZoI. The ZoI is specific to the IEF and is defined by the pathways available for the impact, either directly or indirectly, to result in a potential effect to the habitat or species.

4.3.21. The ZoI is assessed according to the anticipated construction work methods and the extent to which they can affect ecological features within and outside the boundaries of the Project. The ZoI for each

ecological feature will vary depending on the nature of the ecological feature being considered and in accordance with published guidance where available.

4.4 BASELINE ENVIRONMENT

4.4.1. The baseline conditions on which the assessment scope has been based were defined during an ecological desk study which is detailed in the Preliminary Ecological Appraisal (PEA) report (WSP, 2024)[20] and a site walkover. The ecological desk study was completed with information requested from South East Wales Biodiversity Records Centre (SEWBReC) in addition to an assessment of aerial imagery and Ordnance Survey mapping. The site walkover was carried out between the 10th and 12th September 2024 and covered the entirety of the Survey Area (see Figure 1).

STATUTORY DESIGNATED SITES

4.4.2. A total of three international statutory designated sites were identified within 10km of the Project. A description of these sites is detailed in **Table 4-3** and their locations are shown in **Figure 4-2**. The desk study did not return any nationally statutory designated sites within 2km of the Project.

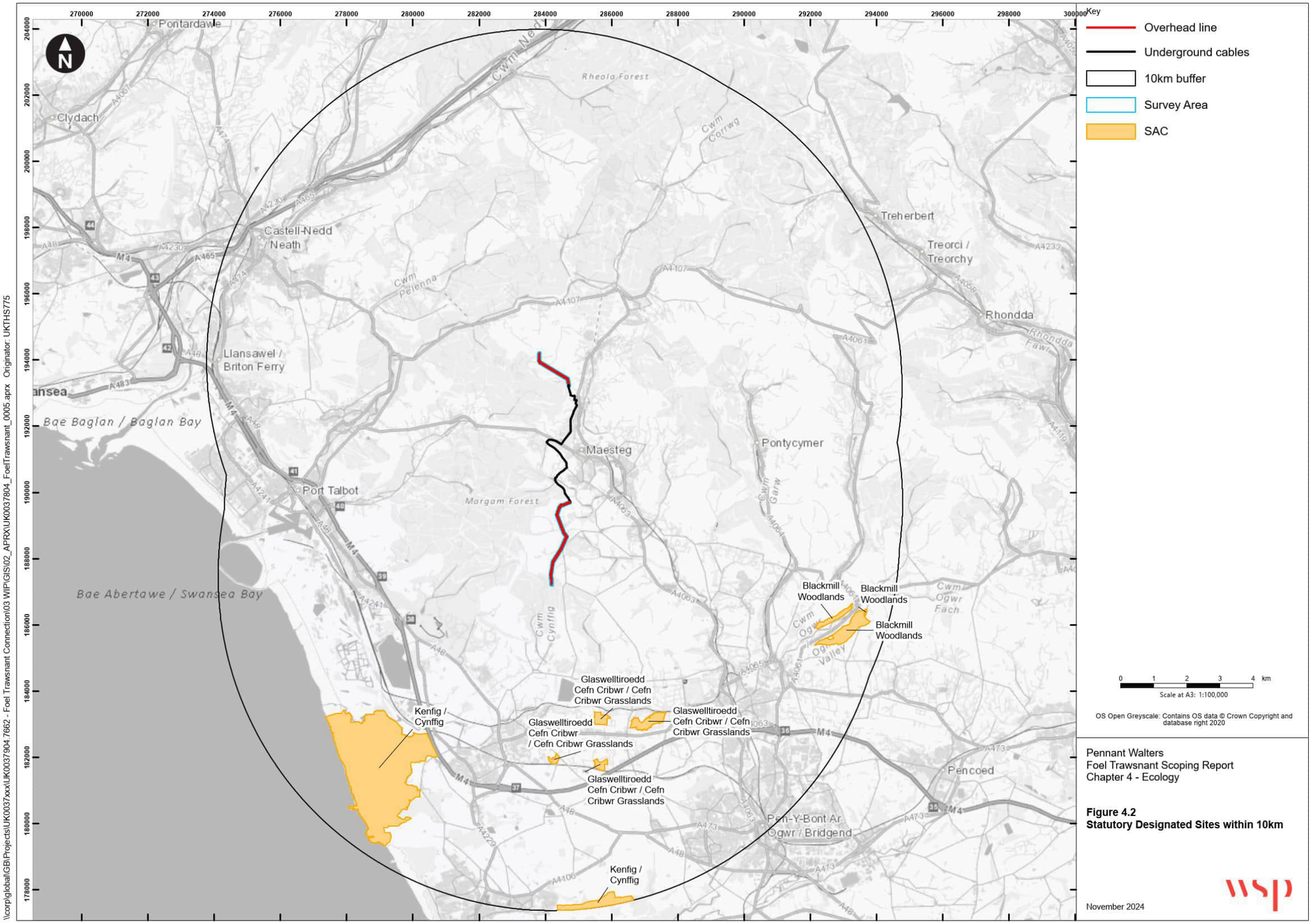
Table 4-3 - International statutory designated sites within 10km of the Project

Site name	Designation	Size (hectares (ha))	Approximate distance and orientation from the Project	Description
Glaswelltiroedd Cefn Cribwr/Cefn Cribwr Grasslands.	SAC	58.19	4.3km South	This is one of four sites representing purple moor-grass *Molinia caerulea* meadows in south and central Wales, one of the major UK strongholds for this habitat type. At this site, there are extensive stands of M24 *Molinia – Cirsium dissectum* fen-meadow, including the heathy sub-type with cross-leaved heath *Erica tetralix*, as well as other forms with a stronger representation of grasses, rushes and small sedges. Transitions to stands of more acidic *Molinia* and *Juncus* pasture, dry neutral grassland and wet scrub vegetation are well-represented. Uncommon and declining species associated with the *Molinia* meadows at this site include the nationally rare viper's-grass *Scorzonera humilis* and the

[20] WSP, (2024). *Foel Trawsnant Preliminary Ecological Appraisal*. Pennant Walters.

Site name	Designation	Size (hectares (ha))	Approximate distance and orientation from the Project	Description
				nationally scarce soft-leaved sedge *Carex montana*.
Kenfig/Cynffig	SAC	1190.8	6.1km Southwest	Kenfig SAC is located on the south-eastern edge of Swansea Bay between Port Talbot and Porthcawl. The site has a number of coastal and species features but just one marine feature: Atlantic salt meadows *Glauco-Puccinellietalia maritimae.* Although salt marsh makes up less than 2% of the site, this habitat is rare along the Glamorgan coast and the saltmarsh exhibits a diverse mosaic of communities. Here it includes plant species such as sea heath and samphire *Salicornia spp.*. The saltmarsh habitat at Kenfig has been subject to natural changes due to erosion and changes to the river geomorphology.
Blackmill Woodlands.	SAC	70.56	8.2km Southeast	Blackmill Woodlands is an example of old sessile oak woods at the southern extreme of the habitat's range in Wales and contributes to representation of the habitat in Wales and in south-west England. The ground flora is restricted by the relative dryness of the site, but the main habitat features of sessile oak *Quercus petraea* canopy, acidic ground flora of *Vaccinium myrtillus* and wavy hair-grass *Deschampsia flexuosa*, and moderate fern and bryophyte cover are present. The woodlands have a long cultural history of management, reflected in the distinctive gnarled appearance of many of the trees.

Figure 4-2 - Statutory Designated Sites within 10km



NON-STATUTORY DESIGNATED SITES

4.4.3. A total of 22 non-statutory nature conservation sites were located within 2km of the Project. A description of these sites is detailed in **Table 4-4** below and their locations are shown in **Figure 4-3**.

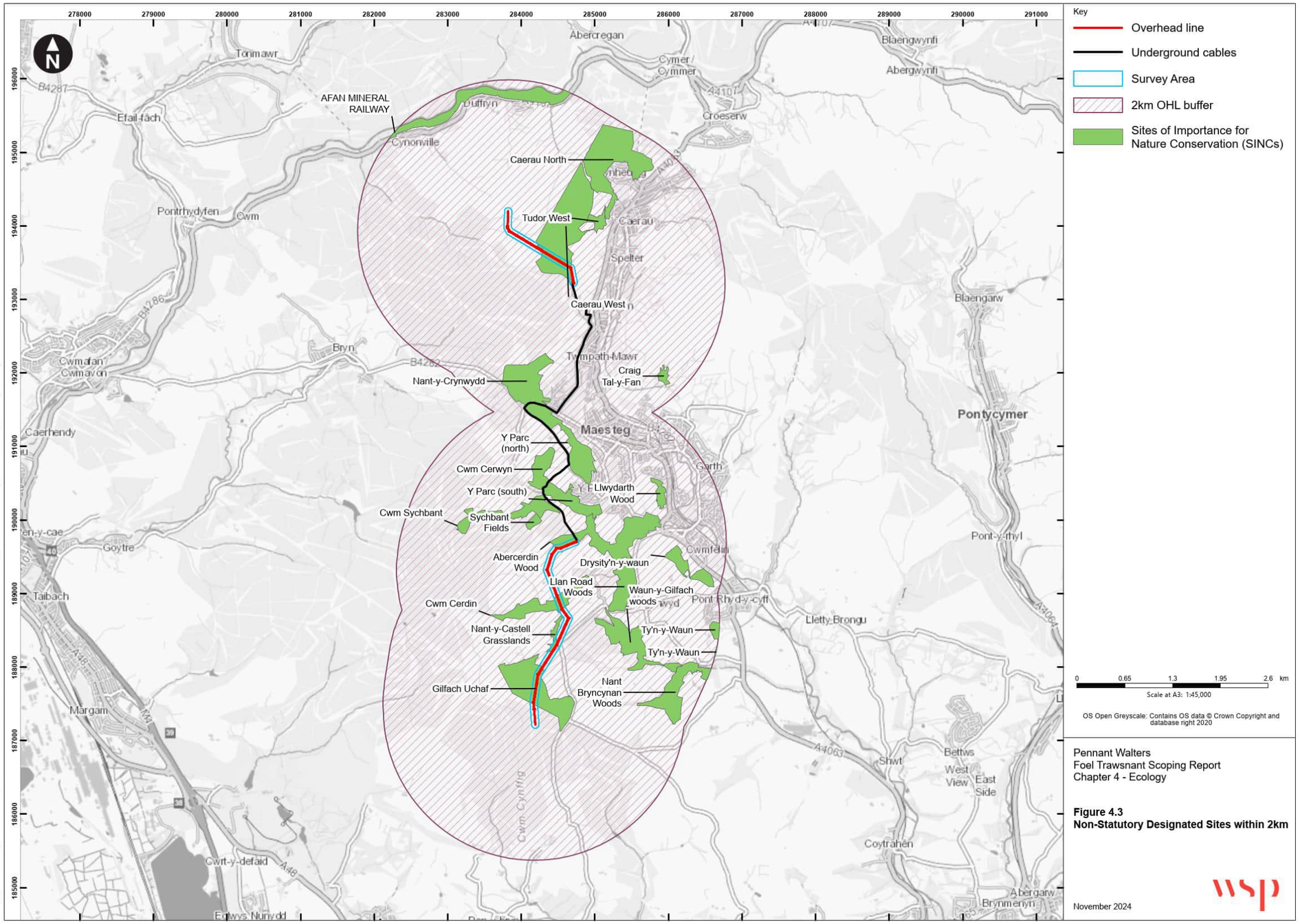
Table 4-4 - Non-statutory designated sites

Site name	Designation	Approximate distance from the Project	Description
Abercerdin Wood.	Wildlife site/SINC (Adopted)	Within the Project boundary.	Broad-leaved semi-natural woodland, unimproved neutral grassland, semi-improved neutral grassland, acid/neutral geological outcrop.
Caerau West.	Wildlife site/SINC (Adopted).	Within the Project boundary.	Marsh/marshy grassland, flush spring and acid/neutral flush, sphagnum blanket bog, sphagnum wet modified bog, wet dwarf shrub heath, dry heath acid mosaic, dry dwarf shrub heath, semi-improved acid grassland, scattered bracken.
Cwm Cerdin.	Wildlife site/SINC (Adopted).	Within the Project boundary.	Broad-leaved semi-natural woodland, unimproved neutral grassland, tall herb fern interspersed in improved grassland.
Gilfach Uchaf.	Wildlife site/SINC (Adopted).	Within the Project boundary.	Marsh/marshy grassland, semi-improved acid grassland, acid dry dwarf shrub heath, natural acid/neutral rock exposure.
Nant-y-Castell Grasslands.	Wildlife site/SINC (Adopted).	Within the Project boundary.	Unimproved neutral grassland, dense continuous bracken.
Sychbant Fields.	Wildlife site/SINC (Adopted).	0.2km W	Dry dwarf shrub heath (acid).
Y Parc (south).	Wildlife site/SINC (Adopted).	0.4km N	Broad-leaved semi-natural woodland, marsh/marshy grassland, semi-improved neutral grassland, dense continuous scrub, wet dwarf shrub heath, blanket bog, unimproved neutral grassland.
Waun-y-Gilfach woods.	Wildlife site/SINC (Adopted)	0.4km E	Broad-leaved semi-natural woodland, marsh/marshy grassland.
Y Parc (north).	Wildlife site/SINC (Adopted).	0.4km N	Broad-leaved semi-natural woodland, wet and dry dwarf heath with scattered bracken *Pteridium aquilinum*, semi-improved acid grassland, unimproved neutral grassland, wet modified

Site name	Designation	Approximate distance from the Project	Description
			sphagnum bog, marsh/marshy grassland, dense continuous scrub.
Cwm Sychbant.	Wildlife site/SINC (Adopted).	0.4km N	Semi-improved neutral grassland, broad-leaved seminatural woodland, marsh/marshy grassland, dense continuous bracken, coniferous plantation
Tudor West.	Wildlife site/SINC (Adopted).	0.6m E	Marsh/marshy grassland, neutral grassland unimproved, broad-leaved semi-natural woodland, semi-improved acid grassland, acid/neutral flush.
Llan Road Woods.	Wildlife site/SINC (Adopted).	0.6km E	Bracken, dense continuous scrub, marsh/marshy grassland, scattered broad-leaved trees.
Cwm Cerwyn.	Wildlife site / SINC (Adopted).	0.8km N	Broad-leaved semi-natural woodland, unimproved neutral grassland, dense continuous scrub, coniferous plantation.
Caerau North.	Wildlife site/SINC (Adopted)	0.8km N	Marsh/marshy grassland, fen, dry modified bog, wet modified bog, sphagnum blanket bog, semi-improved acid grassland, wet dwarf shrub heath, broad-leaved semi-natural woodland, acid dry dwarf shrub heath.
Nant-y-Crynwydd.	Wildlife site/SINC (Adopted).	1.0km S	Marsh/marshy grassland, semi-improved neutral and acid grassland, sphagnum blanket bog, broad-leaved semi-natural woodland, dense continuous scrub.
Craig Tal-y-Fan.	Wildlife site/SINC (Adopted).	1.2km E	Broad-leaved semi-natural woodland, dense continuous scrub, dense continuous bracken.
Llwydarth Wood.	Wildlife site/SINC (Adopted).	1.2km E	Broad-leaved semi-natural woodland and dense continuous scrub.
Drysity'n-y-waun.	Wildlife site/SINC (Adopted).	1.2km E	Marsh/marshy grassland, broad-leaved semi-natural woodland, acid/neutral rock exposures.
Nant Bryncynan Woods.	Wildlife site/SINC (Adopted).	1.3km E	Broad-leaved semi-natural woodland.
B-Lines	Bug life – insect pathway.	1.5km S	The B-Lines are a series of 'insect pathways' which have been established

Site name	Designation	Approximate distance from the Project	Description
			by Buglife. They run throughout the British countryside and towns, and act as a restorative series of wildflower-rich habitat stepping stones. They link existing wildlife areas together, creating a network which provides large areas of brand-new habitat benefiting bees and butterflies.
Afan Mineral Railway.	Wildlife site/SINC (Adopted).	1.7km N	Riparian woodland, a large proportion of which is included on the Ancient Woodland Inventory. Additional habitats include a mosaic of grassland, heath, bracken slopes and spoil elements in a valley which also holds considerable industrial heritage. Public access extends along the site by means of a tarmac cycle track along a dismantled railway line.
Ty'n-y-Waun.	Wildlife site/SINC (Adopted).	1.9km E	Marsh/marshy grassland, semi-improved neutral grassland, broad-leaved semi-natural woodland along proposed community route.

Figure 4-3 - Non-Statutory Designated Sites within 2km



OTHER HABITATS OF CONSERVATION IMPORTANCE

4.4.4. A total of 179 parcels of Priority Habitats were identified within 1km of the Project as part of the desk study. Details are mentioned in **Table 4-5**, including the Priority Habitats which are present within the Survey Area.

Table 4-5 - Priority Habitats within 1 km of the Site

Habitat type	Number of Parcels	Present within the Survey Area
Blanket Bog.	8	No
Lowland Dry Acid Grassland.	32	Yes
Lowland Fens and Reedbeds.	20	Yes
Lowland Heathland.	27	No
Open Mosaic Habitat on previously developed land.	12	No
Purple moor Grass and Rush Pastures.	52	Yes
Raised Bog.	5	No
Upland Flushes, Fens and Swamps.	7	Yes
Upland Heathland.	7	Yes
Wood pasture.	9	Yes

4.4.5. A total of 39 parcels of Ancient Woodland Inventory (AWI) parcels were identified within 1km of the Project as part of the desk study. Details are mentioned in **Table 4-6**. One AWI parcel, an Ancient Semi-Natural Woodland (ASNW), was identified in the southern extent of the Survey Area, spanning both banks of the Nant Lluest-Wen, which flows through the Site.

Table 4-6 - Other Habitats of Conservation Importance

Habitat type	Number of Parcels
Ancient semi natural woodland.	21
Plantation on ancient woodland site.	9
Restored ancient woodland site.	9

PHASE 1 HABITAT SURVEY

4.4.6. The following account summarises the findings of the Phase 1 habitat survey. **Table 4-7** identifies habitat types in the survey area along with areas in hectares (or length for linear features). Habitats are mapped in **Appendix A** and **Appendix B**. A description of the dominant and notable species, the composition and management of each habitat is provided below. Alpha-numeric codes used in this section cross-refer to the Joint Nature Conservation Committee (JNCC) Phase 1 habitat survey classification (JNCC, 2016). The order of the habitat descriptions below reflects their ordering in the Phase 1 habitat survey manual and does not reflect habitat importance.

4.4.7. Priority habitats identified within during the desk study are provided in **Table 4-7**. During the Phase 1 habitat survey additional Priority Habitats were identified. These included 'lowland dry acid grassland', 'purple moor-grass and rush pasture', 'lowland fen', 'rivers', 'upland oakwoods', 'hedgerows', 'lowland mixed deciduous woodland' and 'wet woodland'. These are displayed in **Appendix B**, along with ASNW parcel identified within the Survey Area.

Table 4-7 - Phase 1 Habitat Survey Results

Phase 1 Habitat	Area (ha)	Length (m)	% of Site Area
A1.1.1 – Broadleaved woodland – Semi-natural.	2.26	-	5.45
A1.1.2 – Broadleaved woodland – Plantation.	0.49	-	1.18
A1.2.2 – Coniferous woodland - Plantation.	0.11	-	0.27
A2.1 – Scrub – Dense/continuous.	0.27	-	0.65
A2.2 – Scrub – Scattered.*	0.13	-	-
A3.1 – Broadleaved parkland/scattered trees	-	502.72	-
B1.2 – Acid grassland – Semi-improved.	5.51	-	13.28
B4 – Improved grassland.	18.16	-	43.77
B5 – Marshy grassland.	6.99	-	16.85
B6 – Poor semi-improved grassland.	3.65	-	8.80
C1.1 – Bracken - Continuous.	3.48	-	8.39
C1.2 – Bracken – Scattered.*	0.94	-	-
C3.1 – Other tall herb and fern – ruderal.	0.10	-	0.24

Phase 1 Habitat	Area (ha)	Length (m)	% of Site Area
G2 – Running water	-	1,688.11	-
HS - Hardstanding	0.47	-	1.13
J2.1.2 – Species-poor intact hedge	-	559.68	-
J2.3.1 – Native species-rich hedge with trees	-	108.52	-
J2.5 – Wall	-	764.40	-
J2.6 – Dry ditch	-	272.93	-
Total	**41.50**	**3896.36**	**100**
*A2.2 and C1.2 represent scattered habitats overlaid over another habitat type; therefore, these are subtracted from the total area.			

4.4.8. Target notes (TNs) have been included in **Appendix A** to provide information on specific features of ecological interest or habitat features too small to be mapped. These are detailed below in **Table 4-8**:

Table 4-8 - Target Notes

Target note	Description
TN1	Location of Invasive Non-Native Species (INNS): Japanese knotweed *Reynoutria japonica*
TN2	Location of INNS: Indian balsam *Impatiens glandulifera*
TN3	Dormouse *Muscardinus avellanarius* tubes installed throughout woodland parcel
TN4	Mammal path
TN5	Rabbit *Oryctolagus cuniculus* droppings
TN6	Rabbit warren
TN7	A 7m wide ride with piles of brash down the sides
TN8	Evidence of previous landslip

SUITABILITY FOR PROTECTED AND NOTABLE SPECIES

4.4.9. Following the Phase 1 habitat survey and evaluation of desk study data, the Site is considered suitable to support the following protected and/or notable species:

- Bats;
- Badger *Meles meles*;
- Dormice;
- Otter *Lutra lutra*;
- Water vole *Arvicola amphibius*;
- Brown hare *Lepus europaeus*;
- Harvest mouse;
- Hedgehog *Erinaceus europaeus*;
- Reptiles;
- Amphibians;
- Breeding birds;
- Fish;
- Invertebrates;
- INNS – Indian balsam, Japanese knotweed; and
- Notable plants.

4.5 APPRAISAL

4.5.1. A PEA report (WSP, 2024) completed in October 2024 analysed desk study data provided by SEWBReC, in addition to an assessment of aerial imagery and Ordnance Survey mapping. A site walkover was carried out in September 2024, to supplement this information.

4.5.2. **Table 4-9** sets out the potential significant effects identified to date. These are assessed before the application of any mitigation. Please note that further surveys have been recommended for some of the ecological receptors listed below (e.g. otters). The assessment of impacts on these species will be refined on the receipt of appropriate survey data.

Table 4-9 - Potential significant effects to be assessed

Effect	Zone of Influence	Ecological Features Impacted
Construction		
Habitat loss (temporary or permanent).	Within the construction footprint.	Direct and permanent habitat loss within construction zone; loss of habitat for protected species including bats, badgers, dormice, otter, brown hare, hedgehog, reptiles, amphibians, breeding birds, invertebrates, INNS and other plant species of notable interest. Loss of habitat within parcels of Priority Habitat including lowland mixed deciduous

Effect	Zone of Influence	Ecological Features Impacted
		woodland, lowland dry acid grassland and purple moor grass and rush pastures.
Habitat degradation.	Pollution and contamination incidents associated with hydrology within 2km.	Statutory and non-statutory designated sites up to 2km from the Project. Habitats with hydrological connections to the Project, within 2km, including those that support protected or otherwise notable species. Impacts to watercourses: Nant-y-Castell, Nant Lluest-wen (leading into Nant Sychbant and Nant y Cerdin) and any protected species directly associated with the river and connected river habitat.
Noise, vibration and visual disturbance from construction traffic and personnel.	Construction footprint and up to 250m of construction zone.	Temporary disturbance to otters. Otters are highly mobile and may be sensitive to disturbance at up to 200m when breeding (Scottish National Heritage)[21]. Other protected species such as bats, badgers, dormice, otter, brown hare, hedgehog, reptiles, amphibians and breeding birds are also susceptible to disturbance.
Changes in air quality - dust.	Statutory designated sites, non-statutory designated sites and important habitats within 50m of construction footprint.	Priority Habitats within 50m of the Project.
Changes in light levels.	Changes in lighting within and immediately adjacent to the Project during construction.	Direct impact to protected species such as bats, otter and birds.
Removal of trees within the Project area.	Within the construction footprint.	Direct and permanent loss of trees with bat roosting suitability and commuting habitat such as linear habitat (e.g., boundary trees/hedgerows).
Introduction or spread of non-native invasive species.	Within the construction footprint.	Within Priority Habitats.

[21] Scottish Natural Heritage, Scottish wildlife series, otters and development available at https://www.nature.scot/sites/default/files/2018-09/Species%20Planning%20Advice%20-%20otter.pdf [accessed October 2024], Protected Species Advice for Developers

Effect	Zone of Influence	Ecological Features Impacted
Direct mortality during construction.	The area within the temporary and permanent construction.	Incidental mortality or injury of protected species during vegetation and site clearance.

4.5.3. Three international statutory designated sites were identified within 10km of the Project, the closest of which was Glaswelltiroedd Cefn Cribwr/ Cefn Cribwr Grasslands SAC, located 4.3km south of the Project. Both Glaswelltiroedd Cefn Cribwr/ Cefn Cribwr Grasslands SAC and Blackmill Woodlands SAC were identified to have no impact pathway connectivity to the Survey Area. Furthermore, at these distances (4.3km south and 8.2km southeast from the Project respectfully) their designatory features are not considered likely to be impacted by the Project. Hydrological connectivity was identified between the survey area and Kenfig / Cynffig SAC (located over 6km from the Project). Given the distance from the Project and that it is located upstream from the SAC, it was determined that Kenfig/ Cynffig SAC is unlikely to be impacted.

4.5.4. No LSEs to international statutory designated sites are therefore predicted. This would be kept under review during development of the EIA for the Project. If considered necessary, a formal screening exercise to assess the potential for LSEs on international statutory designated would be completed.

4.5.5. A total of five SINCs were identified within the Project boundary and therefore have potential to be impacted. These included Abercerdin Wood, Caerau West, Cwm Cerdin, Gilfach Uchaf and Nant-y-Castell Grasslands SINCs.

4.5.6. Priority Habitat and SINCs may be impacted by habitat loss, water and air-borne pollution and the introduction of INNS, as they lie within the Project footprint.

4.5.7. Direct impact to Priority Habitat and AWI parcels is anticipated and indirect impacts could result through water-borne pollution events, if there are hydrological connections between the Project and habitats of conservation importance. This would be confirmed or discounted during development of the EIA and detailed Project design.

4.5.8. Protected species identified within the survey area may be impacted by the Project through habitat loss, noise, vibration and visual disturbance, and the introduction or spread of INNS. Relevant species/ species groups include bats, badgers, dormice, otter, water vole, brown hare, harvest mouse, hedgehog, reptiles, amphibians, breeding birds, invertebrates, INNS and other plant species of notable interest.

4.5.9. The impacts above are predicted in the absence of mitigation. Mitigation measures will follow the stepwise approach advocated in Planning Policy Wales (Welsh Government, 2024)[22] and will be

[22] Welsh Government (2024). Planning Policy Wales: Edition 12. February 2024. Available at: https://www.gov.wales/planning-policy-wales

designed to avoid or reduce the impacts where possible. Where this is not possible, a reduction in effects through mitigation and compensatory measures would be taken.

ASSESSMENT OF CUMULATIVE EFFECTS

4.5.10. Consideration should also be given as to whether any of the IEFs identified within this scoping chapter are likely to be subject to cumulative effects as a result of the Project in combination with other nearby developments.

4.5.11. Cumulative effects would generally be either:

- Cumulative 'ZoI' effects whereby two or more developments affect the same specific receptor (e.g. two developments in the same river catchment); or
- Cumulative effects on the total resource (or population) of an ecological feature in a region due to two or more developments (e.g. two developments affect the same habitat type in a region, reducing its overall area).

4.5.12. Assessment of these is complex and relies on the definition of a reasonable scope for cumulative effects, and the availability of a reasonable baseline for other developments. However, the same principles of assessment apply, i.e. an effect would have to be significant at the 'county' level to be significant in ecological impact assessment (EcIA) terms. In addition, the assessment focuses on those occasions where two 'not significant' effects might operate cumulatively to result in a significant effect (rather than where the effects of one development on an ecological feature are already, on their own, considered significant).

4.5.13. Assessment of cumulative effects are considered likely to be present and have been scoped in at this stage as a precautionary measure. A detailed assessment will be provided within the Environmental Statement (ES) and will be subject to any information available through the Local Planning Authority (LPA) regarding other local projects. Where such information is limited, this may in turn limit the efficacy of the assessment of cumulative effects. Consultation with the LPA will be required to determine a conclusion.

ENVRIONMENTAL EFFECTS SCOPED OUT

4.5.14. The following environmental effects are deemed unlikely to result in significant effects, and will therefore not be considered within the Environmental Statement (ES):

- Loss or disturbance of common and widespread habitats of negligible nature conservation importance;
- Temporary disturbance of common and widespread species of negligible nature conservation importance such as rabbits; and
- Operational noise and visual disturbance from traffic and people during routine maintenance.

4.5.15. Effects on international statutory designated sites and the majority of non-statutory designated sites are not expected to be significant as is explained in **paragraph 4.5.3** onwards.

4.5.16. Effects on common and widespread habitats and species will not be considered as they do not meet the criteria for requiring full EcIA identified in the CIEEM Guidelines; and are therefore not considered to be a material consideration for decision-making.

4.6 RECOMMENDATIONS AND MITIGATION

FURTHER ECOLOGICAL SURVEYS AND RECOMMENDATIONS

4.6.1. The following ecological surveys are likely required for the ES:

- Bats;
- Badgers;
- Otter;
- Birds;
- Fish/aquatic;
- INNS;
- Dormouse; and
- Water vole.

4.6.2. The surveys required for ES will be confirmed following receipt and review of any additional third-party survey data for the Site, in conjunction with a review of the final Project design. This will be noted within the ES chapter.

4.6.3. Pre-work Ecological Clerk of Work (ECoW) checks will likely cover the following species:

- Brown hare;
- Hedgehog;
- Harvest mouse;
- Reptiles;
- Amphibians; and
- Notable plants.

4.6.4. Measures are also likely required for the SINC sites, Priority Habitats and AWI parcels as discussed above.

4.6.5. At this stage of the Project's life cycle, the IEFs identified within this scoping report are scoped in on a precautionary basis and this may be subject to change following further assessment and will be addressed in detail within the ES.

NET BENEFIT FOR BIODIVERSITY

4.6.6. The Welsh Government recently produced an advice note on delivering biodiversity enhancements[23], which is now secured in Welsh planning policy through Edition 12 of Planning Policy Wales (PPW)[24] (Welsh Government, 2024). This includes an approach to delivering Net

[23] Welsh Government, (2022). *Section 6 biodiversity and resilience of ecosystems duty: summary report 2022*. Available online at: https://www.gov.wales/sites/default/files/pdf-versions/2022/12/4/1672307032/section-6-biodiversity-and-resilience-ecosystems-duty-summary-report-2022.pdf [Accessed: October 2024].
[24] Welsh Government, (2024). *Planning Policy Wales, Edition 12*. Available online at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf [Accessed: October 2024].

Benefit for Biodiversity (NBB) in Wales, with the onus being placed on demonstrating both a measurable NBB and promoting ecosystem resilience. The NBB approach intends to deliver an overall improvement in biodiversity. It does not utilise a metric. It instead assesses this improvement in biodiversity qualitatively, putting the emphasis on proactive consideration of biodiversity and wider ecosystem benefits within a placemaking context early in the design process.

4.6.7. Biodiversity enhancements that achieve NBB must be delivered following the implementation of the 'stepwise approach' of firstly avoiding, then minimising, mitigating and, as a last resort, compensating for adverse impacts on the environment that occur as part of a development. Therefore, compensation should only be considered as a last resort, where it has been demonstrated clearly that adverse effects on the environment cannot be avoided or fully mitigated. If compensation is necessary, this must be delivered on-site where possible but off-site compensation can be sought if demonstrated that this is not possible.

4.6.8. This approach will encourage the consideration of features that may not necessarily be protected, but are crucial for ecosystem functioning and resilience, leading to more joined up spaces for nature.

4.6.9. Natural Resources Wales (NRW) have developed a framework for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act 2016[25]. This is referred to as DECCA and comprises the objectives listed:

- Diversity – maintaining and enhancing diversity at every scale, including genetic, structural, habitat and between-habitat levels. This supports the complexity of ecosystem functions and interactions that deliver services and benefits.
- Extent – incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats. In general, smaller ecosystems have reduced capacity to adapt, recover or resist disturbance.
- Condition – the condition of an ecosystem is affected by multiple and complex pressures acting both as short term and longer-term types of disturbance. Both direct and wider impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc.
- Connectivity – this refers to the links between and within habitats, which may take the form of physical corridors, stepping stones in the landscape, or patches of the same or related vegetation types that together create a network that enables the flow or movement of genes, species and natural resources. Developments should take opportunities to develop functional habitat and ecological networks within and between ecosystems, building on existing connectivity.
- Adaptability to change – ecosystem resilience is a product of the above four attributes. Adaptability, recovery and resistance to/from a disturbance are defining features of ecosystem resilience.

[25] Welsh Government, (2016). Environment (Wales) Act 2016. Available online at: https://www.legislation.gov.uk/anaw/2016/3/contents [Accessed: October, 2024].

4.6.10. NRW define ecosystem resilience as "*An environment that can respond to pressures by resisting, recovering or adapting to change, and is able to continue to provide natural resources and benefits to people*"[26].

RECOMMENDED MITIGATION MEASURES

4.6.11. Mitigation is an integral part of the Project design. The stepwise approach has been applied in relation to Project design and mitigation. This starts with the avoidance of impacts, followed by a reduction in impacts through mitigation and compensatory measures for mitigating significant impacts and as a last resort to addressing impacts. The potential impacts of the Project on biodiversity resources with the application of the hierarchy of mitigation are listed below:

- High quality habitat would be retained and protected within the Project, where possible. This includes semi-natural broad-leaved woodland, species-rich grasslands and hedgerow habitat. Where this is not possible, new high-quality habitat will be created at an appropriate replacement ratio;
- Any trees lost to the Project will be replaced at a 3:1 ratio in accordance with Planning Policy Wales (Welsh Government, 2024);
- Where possible, features such as badger setts or bat roosts (if present) would be retained and protected within the Project. If this is not possible, then further surveys may be required and a licence with NRW will need to be obtained to allow the work to proceed lawfully;
- Where possible, retain and protect habitat assessed as suitable for supporting water vole. If disturbance or damage to water vole burrows cannot be avoided, a licence with NRW will need to be obtained to allow the work to proceed lawfully;
- A commitment to a Construction Environmental Management Plan (CEMP) which would include details of the measures to be employed to minimise effects on protected species and to minimise impacts resulting from (for example) disturbance;
- Commitment to comply with best practice guidelines on environmental protection, for example Construction Industry Research and Information Association (CIRIA) C741 – Environmental Good Practice on Site (4th Edition) (CIRIA, 2015a)[27], CIRIA C532 – Control of Water Pollution from Construction Sites (CIRIA, 2001)[28] and the Environment Agency's (EA) Pollution Prevention Guidance (PPG), although withdrawn should still be referred to as a means of avoiding potential pollution events; and

[26] Natural Resource Wales, (2020). *SoNaRR2020: Ecosystems are resilient to expected and unforeseen change*. Available online at: https://naturalresources.wales/evidence-and-data/research-and-reports/state-of-natural-resources-report-sonarr-for-wales-2020/sonarr2020-our-assessment/ecosystems-are-resilient-to-expected-and-unforeseen-change/?lang=en#:~:text=A%20resilient%20ecosystem%20is%3A%20An%20environment%20that%20can,to%20provide%20natural%20resources%20and%20benefits%20to%20people. [Accessed: October 2024].
[27] https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C741&Category=BOOK
[28] https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C532&Category=BOOK

- Clearance of suitable terrestrial habitat would be checked in advance by a suitably qualified ecologist to minimise the risk of disturbance and injury/killing of protected species. This would be undertaken in accordance with a Precautionary Method of Works (PMoW) or European Protected Species Licence (EPSL) as appropriate.

5 HISTORIC ENVIRONMENT

5.1 INTRODUCTION

5.1.1. The Historic Environment assessment will consider the potentially significant effects on the local environment that may arise from the construction and operation of the Project.

5.1.2. This chapter of the Scoping Report sets out the information sources used to inform the scope of the assessment. It provides an overview of the baseline conditions relevant to Historic Environment within the vicinity of the Scoping Boundary; the likely significant effects to be considered within the assessment and measures which can be incorporated into the Project to mitigate any potential significant effects.

5.1.3. This chapter should be read in conjunction with **Chapter 1: Introduction**.

LIMITATIONS OF THIS ASSESSMENT

5.1.4. This Scoping Report has been informed by a draft Archaeological Desk-based Assessment (ADBA) prepared by Heneb: the Welsh Trust for Archaeology, which provides a Historic Environment baseline for the Project and was supported by a site visit carried out by Heneb. The draft ADBA does not include a detailed baseline of offsite heritage assets and no visits were made to offsite heritage assets.

5.2 INFORMATION SOURCES AND STUDY AREA

5.2.1. In order to determine the full historic environmental potential within the scoping boundary, a broad range of standard documentary and cartographic sources were consulted within a 300m radius study area around the scoping boundary in the ADBA, as detailed in **Section 5.2.3** below. The baseline summary provided in this ES scoping assessment has been drawn from this existing draft ADBA which details the designated and non-designated historic assets discussed. This has helped assess the likely nature, extent, preservation and significance of any known or possible buried historic assets that may be present within, or adjacent to, the scoping boundary. This method has been applied for scoping potential for above ground historic assets that might be impacted and impacts to built or buried asset significance through changes to setting. Where appropriate, reference has been made to key historic assets beyond the study area.

5.2.2. A fully illustrated desk-based assessment will be submitted with the ES, which will expand on the information currently provided.

5.2.3. **Table 5-1** below provides a summary of the key data sources. Professional judgement has been used to determine an appropriate size of the study area around the Site, and occasionally reference has been made to assets beyond this study area, where appropriate, e.g., where such assets are particularly significant and/or where they contribute to current understanding of the historic environment.

Table 5-1 – Summary of data sources

Source	Data	Comment
Cadw	Inventory of Historic Assets with information on statutorily designated historic assets.	Statutory designations (scheduled monuments; statutorily listed buildings; registered parks and gardens; historic battlefields) can provide a significant constraint to development.
Glamorgan-Gwent Archaeological Trust (GGAT).	GGAT Historic Environment Record (HER).	Primary repository of archaeological information. Includes information from past investigations, local knowledge, find spots, and documentary and cartographic sources.
British Geological Survey (BGS).	Solid and drift geology digital map; online BGS geological borehole record data.	Subsurface deposition, including buried geology and topography, can provide an indication of potential for early human settlement, and potential depth of archaeological remains.
Glamorgan Archives.	Historic maps and documents.	Provides an indication of past land use and impacts which may have compromised archaeological survival.
Central Register of Air Photography for Wales (CRAPW).	Vertical and specialist (oblique) aerial photographs.	Cropmarks formed by moisture variations due to subsurface features can indicate the presence of archaeological remains. Aerial photographs can also sometimes provide information on ground disturbance.
Natural Resources Wales (NRW).	LiDAR information.	Topographic information obtained from LiDAR scanning can be utilised to identify areas of historical human impact upon the natural topography, as well as giving an overarching view of the Site environs and land formation processes.
Portable Antiquities Scheme (PAS).	Database of archaeological finds found by chance.	Government funded project to encourage the voluntary recording of archaeological objects found by members of the public. Database is online at finds.org.uk. This was consulted for the scoping boundary and its immediate vicinity only.
Royal Commission on Ancient and Historical Monument of Wales (RCAHMW).	Inventory of non-designated historic assets (The National Monument Record of Wales).	Welsh Government funded organisation which manages the National Monument Record of Worlds, a repository of information on archaeological and built heritage remains in Wales. Their database is partially

Source	Data	Comment
		accessible online at colfein.gov.uk. These records were consulted for the scoping boundary and its immediate vicinity only.
Internet	General online search.	General online research conducted on historic assets of Wales.
The Client.	Proposed cable route plans of underground and overground sections.	Assists in the assessment of the extent of the proposed impact upon known or possible archaeological remains.

5.2.4. A site walkover survey was undertaken by Heneb: the Trust for Welsh Archaeology to survey known and heritage assets and to assess the potential for previously unrecorded remains and historic hedgerows[29].

5.3 METHODOLOGY

5.3.1. This section sets out the methodology for the assessment of effects on historic environment.

5.3.2. The study area is set out in **Section 03**.

RELEVANT LEGISLATION, POLICY AND GUIDANCE

5.3.3. The ES Chapter will set out the planning framework in respect of buried heritage assets (archaeological remains), built heritage assets and historic landscapes. It will include the methodology for assessing the environmental effects predicted during the construction and operation (completed development) phases. It will provide a summary overview of the baseline conditions.

5.3.4. This Scoping Report chapter has been prepared in line with legislation and national policy as well as in accordance with published advice on the historic environment, including the following:

Legislation and Planning Policy

- Historic Environment (Wales) Act 2016[30]
- Planning Policy Wales (Edition 12, February 2024)[31];

[29] UK Government, (1997). *The Hedgerows Regulations 1997, No. 1160*. Available online at: https://www.legislation.gov.uk/uksi/1997/1160/introduction/made [Accessed 02/10/2024].
[30] Welsh Government, (2016). *Historic Environment (Wales) Act 2016*. Available online at: https://www.legislation.gov.uk/anaw/2016/4/contents [Accessed 11/10/2024].
[31] Welsh Government, (2024). *Planning Policy Wales, Edition 12*. Available online at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf [Accessed 11/10/2024].

- Future Wales: The National Plan 2024 (2021)[32];
- Bridgend County Borough Council Local Development Plan 2018 to 2033[33];
- Planning (Listed Buildings and Conservation Areas) Act 1990[34]; and
- Ancient Monuments and Archaeological Areas Act 1979[35].

Historic Environment Guidance

- Technical Advice Note 24 (TAN24): The Historic Environment (2017)[36];
- Heritage Impact Assessment in Wales (2017)[37];
- Setting of Historic Assets in Wales (2017)[38];
- Managing Historic Character in Wales (2017)[39];
- Conservation Principles for the sustainable management of the historic environment in Wales (2011)[40];CIfA Code of conduct: professional ethics in archaeology (2022)[41];
- CIfA Code of conduct: professional conduct (2024)[42];

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[32] Welsh Government, (2021). *Future Wales: The National Plan 2024.* Available online at: https://www.gov.wales/future-wales-national-plan-2040 [Accessed 11/10/2024].
[33] Bridgend County Borough Council, (2024). *Replacement Bridgend Local Development Plan 2018 to 2033*. Available online at: https://www.bridgend.gov.uk/residents/planning-and-building-control/development-planning/replacement-bridgend-local-development-plan-2018-to-2033/ [Accessed 11/10/2024].
[34] UK Government, (1990). *Planning (Listed Buildings and Conservation Areas) Act 1990, c.9*. Available online at: https://www.legislation.gov.uk/ukpga/1990/9/contents [Accessed 11/10/2024].
[35] UK Government, (1979). *Ancient Monuments and Archaeological Areas Act 1979, c.49*. Available online at: https://www.legislation.gov.uk/ukpga/1979/46 [Accessed 11/10/2024].
[36] Welsh Government, (2017). *Technical Advice Note 24: The Historic Environment*. Available online at: https://www.gov.wales/sites/default/files/publications/2018-09/tan24-historic-environment.pdf [Accessed 02/10/2024]
[37] Cadw, (2017). *Heritage Impact Assessment in Wales*. Available online at: https://cadw.gov.wales/sites/default/files/2019-05/20170531Heritage%20Impact%20Assessment%20in%20Wales%2026917%20EN.pdf [Accessed 11/10/2024]
[38] Cadw, (2017). *Setting of Historic Assets in Wales*. Available online at: https://cadw.gov.wales/sites/default/files/2019-05/Setting%20of%20Historic%20Assets%20in%20Wales%20EN.pdf [Accessed 08/10/2024]
[39] Cadw, (2017). *Managing Historic Character in Wales*. Available online at: https://cadw.gov.wales/sites/default/files/2019-05/Managing%20Historic%20Character%20in%20Wales%20%20EN.pdf [Accessed 11/10/2024]
[40] Welsh Assembly Government, (2011). *Conservation Principles for the sustainable management of the historic environment in Wales*. Available online at: https://cadw.gov.wales/sites/default/files/2019-05/Conservation_Principles_EN_0.pdf [Accessed 02/10/2024]
[41] Chartered Institute for Archaeologists (CIfA), (2022). *Code of Conduct: professional ethics in archaeology*. Available online at: https://www.archaeologists.net/sites/default/files/Code%20of%20conduct%20revOct2022.pdf [Accessed 02/10/2024]
[42] Chartered Institute for Archaeologists (CIfA), (2024). *Regulations for professional conduct*. Available online at: https://www.archaeologists.net/sites/default/files/Regulations%20for%20professional%20conduct_0.pdf [Accessed 02/10/2024]

- CIfA Standard and Guidance for historic environment desk-based assessment (2020a)[43]; and
- CIfA Standard and Guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (2020b)[44].

5.3.5. The Historic Environment assessment will be supported by a technical appendix in the form of a detailed ADBA prepared by Heneb: the Trust for Welsh Archaeology. This will include a detailed baseline compiled through a standard range of data sources, as highlighted in **Table 5-1**.

OVERARCHING APPROACH

5.3.6. The generic Project-wide approach to the assessment methodology is set out in **Chapter 1: Introduction.** Whilst this has informed the approach in this Historic Environment assessment, it is necessary to set out how this methodology will be applied, and adapted as appropriate, to address the specific needs of this Historic Environment assessment.

TEMPORAL SCOPE

5.3.7. The temporal scope of the assessment of Historic Environment is consistent with the period over which the Project would be carried out and therefore covers the construction and operational periods.

5.3.8. Decommissioning activities would not be expected to result in additional ground disturbance with underground infrastructure being left in situ.

DETERMINING SIGNIFICANCE OF EFFECTS

5.3.9. The EIA Regulations do not define significance, and it will be necessary to state how this will be defined. The significance of an effect resulting from a development during construction or operation is most commonly assessed by reference to the sensitivity (or value) of a receptor and the magnitude of the effect, as set out in **Table 5-3**. This approach provides a mechanism for identifying areas where mitigation measures may be required and to identify the most appropriate measures to alleviate the risk presented by the development.

5.3.10. For the purposes of assessing the significance of effects in EIA terms, heritage significance is described with reference to the interests set out in Planning Policy Wales and TAN24 (see **Section 5.3.4**). These guidelines define the significance of historic assets by the following values: evidential, historic, aesthetic and communal. The determination of the significance is based on statutory designation, professional judgement and through consultation with statutory consultees.

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[43] Chartered Institute for Archaeologists (CIfA), (2020a). *Standard and guidance for historic environment desk-based assessments*. Available online at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf [Accessed 02/10/2024]
[44] Chartered Institute for Archaeologists (CIfA), (2020b). *Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment*. Available online at: https://www.archaeologists.net/sites/default/files/CIfAS%26GCommissioning_2.pdf [Accessed 02/10/2024]

5.3.11. Each historic asset is evaluated against the range of criteria listed above on a case-by-case basis, in accordance with the criteria listed in **Table 5-2**. This also considers regional variations and individual qualities, where applicable.

5.3.12. Unless the nature and exact extent of buried archaeological remains within any given has been determined through prior investigation, their significance can be uncertain, and a judgement will be made on the basis of existing knowledge.

5.3.13. In relation to designated historic assets, the assessment considers the contribution that historic character and setting makes to the overall significance of the asset.

Table 5-2 – Definition of heritage significance

Heritage Significance	Criteria	Example asset class
High	Asset has significance for an outstanding level of archaeological, architectural, historic and/or artistic interest.	Designated historic assets. Nationally and international significant non-designated archaeological sites, including burial grounds.
Medium	Asset has significance for a high level of archaeological, architectural, historic and/or artistic interest.	Locally listed buildings and other local / county-based designations. Regionally significant non-designated archaeological sites.
Low	Asset has significance for elements of archaeological, architectural, historic or artistic interest.	Locally significant archaeological sites.
Negligible	Due to its nature of form, condition or survival, it cannot be considered as an asset in its own right.	Non-extent HER records.

Table 5-3 – Establishing the magnitude of change

Magnitude	Criteria (adverse)	Criteria (Beneficial)
High	Loss of heritage significance of an order of magnitude that would result from total or substantial demolition or disturbance of a historic asset or from the disassociation of an asset from its setting.	Sympathetic restoration of an at-risk or otherwise degraded heritage asset and/or its setting. Bringing an at-risk heritage asset into sustainable use, with robust long-term management secured.
Medium	Loss of heritage significance arising from partial disturbance or inappropriate alteration of	Appropriate stabilisation and/or enhancement of a heritage asset and,

	a historic asset which will adversely affect its importance. Change to the key characteristics of the setting of a historic asset, which may harm the significance of the asset, but will still allow its archaeological, architectural or historic interest to be appreciated.	or its setting that better reveal the significance of the asset or contribute to a long-term sustainable use or management regime.
Low	Minor loss to or alteration of a historic asset which leaves its current significance intact. Minor or short-term changes to setting which do not affect the key characteristics and in which the historical context remains intact.	Minor enhancements to management of a feature or site that better reveal the significance of the asset or contribute to a short-term management regime.
Negligible	Minor alterations of a historic asset which does not affect its significance. Minor and short-term, or reversible, changes to setting which do not affect the significance of the historic asset.	Very minor alteration to an asset which presents minimal change to heritage significance, including minor and, or short-term or reversible change to setting.

5.3.14. The matrix in **Table 5-4** has been prepared to guide the assessment of whether effects on the historic environment for the purposes of EIA are to be considered significant or not. The classification of the effect is judged on the relationship of the magnitude of change to the assessed heritage significance of the resource. As a general rule, major effects are considered to be significant, moderate effects are considered to be potentially significant, and minor and negligible effects are considered to be not significant. Where effects are assessed, according to **Table 5-4**, as potentially significant in EIA terms, professional judgement will be applied to determine whether they are significant or not significant.

Table 5-4 – Significance evaluation matrix

		Magnitude of change			
		High	**Medium**	**Low**	**Negligible**
Significance	**High**	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible

5.4 BASELINE ENVIRONMENT

5.4.1. A high-level appraisal of historic assets has been undertaken to inform the scoping assessment using the sources listed in **Table 5-1.** This provided to inform the scope of the effects which will be considered in the EIA.

DESIGNATED HISTORIC ASSETS

5.4.2. There is one designated historic asset within this scoping boundary. This is the Margam Mountain Historic Landscape (Ref: HLW (WGl/MGl) 2), with approximately 3.1km of the scoping boundary passing through the eastern edge of the historic landscape.

5.4.3. Within the study area, there are two scheduled monuments:

- Y Bwlwarcau Hillfort, Llangnwyd Middle (Cadw ref: GM059), situated 250m west of the scoping; and
- Maesteg blast furnaces (Cadw ref: GM418), situated 200m east of the scoping boundary.

5.4.4. There are six listed buildings within the study area, which are as follows:

- Maesteg Sports Centre, The Cornstores, Grade II* listed (Cadw ref: 11257), situated 300m east of the scoping boundary;
- Siloh Independent Chapel, Grade II listed (Cadw ref: 11356), situated 230m east of the scoping boundary;
- Blast Furnace at Maesteg Sports Centre, Grade II listed (Cadw ref: 18492), situated 290m east of the scoping boundary;
- Salem Welsh Baptist Chapel, Grade II* listed (Cadw ref: 18495), situated 115m east of the scoping boundary;
- Capel Saron, Grade II listed (Cadw ref: 18496), situated 210m east of the scoping boundary; and
- Nantyffyllon Workmen's Institute, Grade II listed (Cadw ref: 18507), situated 260m east of the scoping boundary.

NON-DESIGNATED HISTORIC ASSSETS

5.4.5. There are four non-designated historic assets within the scoping boundary, and 26 non-designated historic assets within the study area, as recorded in the GGAT HER. These range from early medieval to post-medieval archaeological finds and features, but primarily consist of remains from 19th century industrial activities like farmsteads and industrial structures.

5.4.6. An additional 37 non-designated historic assets, as recorded by the RCAHMW, are located beyond the scoping boundary but within the study area. These primarily reflect the former industrial structures and infrastructure associated with the post-medieval and modern iron industry, but also include prehistoric archaeological finds and features including Iron Age enclosures and a Bronze Age cairn.

5.4.7. It is possible that previously unrecorded remains and above ground structures are present within the scoping boundary and study area and will be assessed in the ES.

CHRONOLOGICAL OVERVIEW

5.4.8. During the prehistoric period, activities within the scoping boundary environs were centred on sites like the Iron Age Y Bwlwarcau Hillfort, situated 200m east of the scoping boundary, which itself is situated within the Magram Mountains Historic Landscape. This area is an upland landscape which has been continually occupied since prehistory, evidenced by the remains of Bronze Age settlement activities and Roman trackways between Cardiff and Neath which have been identified throughout.

5.4.9. Isolated areas of medieval agricultural activities have been identified by the remains of medieval trackways, platforms, farmsteads and a pillar-cross surrounding the scoping boundary environs, but the areas arable land, pastures and woodland were not fully exploited until the 19th century. At this time, coal and iron mines, airshafts and quarries opened, particularly focused around the northern end of the study area near Nant-y-ffyllon, but also spread sporadically across the Magram Mountains around the south of the scoping boundary. To support these activities and the growing population, both Nant-y-ffylon and Measteg to the east became increasingly urbanised, with railways, tramways, residential development and farmsteads gradually being built.

5.5 APPRAISAL

POTENTIAL RECEPTORS

5.5.1. The receptors taken forward for assessment have been identified through an ADBA and the potential impacts to the Historic Environment, which include:

- Direct disturbance of historic assets;
- Changes to the settings of historic assets, affecting their significance; and
- Changes to historic landscape.

DIRECT DISURBANCE

5.5.2. Any effects arising from direct disturbance of historic assets would be expected to occur during the construction phase and are permanent and irreversible but would be restricted to the footprint of the Project.

5.5.3. Direct disturbance would arise only from physical disturbance caused by the construction of the Project. Therefore, effects on known historic assets will be considered only where these are located within the footprint of the Project. Direct effects on historic assets outside the footprint of the Project will not occur and are scoped out.

5.5.4. There is a potential for previously unrecorded historic assets to be directly affected the Project. According to the provided draft ADBA, these may include the following:

- Prehistoric or medieval historic assets in the southern portion of the scoping boundary, notably within the Magram Mountains Historic Landscape; and
- Medieval domestic or post-medieval industrial historic assets in the northern portion of the scoping boundary, notably including evidence of farming, iron and coal mining, and the operations of factories and the railways.

5.5.5. Such effects will be considered with reference to a characterisation of the potential presence of such historic assets developed from an understanding of the historic landscape context, and reference to appropriate cartographic and documentary sources.

CHANGES TO SETTING

5.5.6. The setting of historic assets is defined in Cadw guidance as follows:

- *"The setting of a historic asset includes the surroundings in which it is understood, experienced and appreciated, embracing present and past relationships to the surrounding landscape".*

5.5.7. Cadw guidance identifies a staged approach to the assessment of effects on settings, with the first stage being the identification of the historic assets which may be affected. In accordance with guidance, this has been done considering:

- The location, size and scale of the Project; and
- The location of the identified historic assets.

5.5.8. The selection of heritage assets to be included in the detailed assessment in the ES will be reviewed against a Zone of Theoretical Visibility (ZTV). However, based on the existing scheme design information, the surrounding landscape and nature of historic assets, the following assets are scoped into the detailed assessment of effects within the ES:

- Y Bwlwarcau Hillfort, Llangnwyd Middle (Cadw ref: GM059);
- Maesteg Sports Centre, The Cornstores (Cadw ref: 11257);
- Siloh Independent Chapel (Cadw ref: 11356);
- Blast furnace at Maesteg Sports Centre (Cadw ref: 18492) and associated Maesteg Blast Furnaces Scheduled Monument (Cadw ref: GM418);
- Salem Welsh Baptist Chapel (Cadw ref: 18495);
- Capel Saron (Cadw ref: 18496); and
- Nant-y-ffyloon Workmen's Institute (Cadw ref: 18507).

HISTORIC LANDSCAPE

5.5.9. The southern area of the scoping boundary lies within the Margam Mountain registered historic landscape and there is potential for effects on this landscape because of physical and visual impacts. Due to the nature of the Project, which is located on the edge of the historic landscape and consists of the installation of wood H-pole OHLs only (which will reach a maximum height of 10m), this will have no more than a localised impact on the historic landscape. Ground excavations for pole foundations are anticipated to require ground clearance of at minimum 5.2m boxes, at depths of between 2.2m and 2.4m below ground level. Therefore, a full Assessment of the Significance of the Impact of Development on Historic Landscapes (AISDHOL) has not been deemed necessary, but localised impacts will still be assessed within the ES (see **Table 5-5**).

LIKELY SIGNIFICANT EFFECTS

5.5.10. The effects scoped out from further assessment in the ES are:

- **Direct disturbance to historic assets within the section of the underground cable route proposed within existing road network** – areas of works within the road footprint will not impact upon any unknown historic assets, as these have likely already been directly disturbed by modern development to a depth of between 1m to 2m. As such, excavation of the cable trenches to a depth of 1.5m and the joint boxes at 2m deep and 2m x 1m wide will have a negligible adverse effect and can be scoped out of further assessment.
- **Direct disturbance to historic assets during the operation phase of the underground cable and overhead powerline** – whilst in the operation phase, these cables will be static and will not require any direct impacts upon the ground. As such, they will have no adverse effect on unknown historic assets.

- **Direct disturbance to historic assets outside of the scoping boundary** – no ground excavation works are anticipated to take place beyond the scoping boundary and therefore there will be no adverse effect upon unknown historic assets.
- **Adverse effect through change to their settings on historic assets not listed in paragraph 5.5.8** – due to a combination of location, distance, intervening topography and the nature of the assets, together with the proposed OHL scheme design (see **Chapter 1: Introduction**), there are no further assets whose setting and physical character would be significantly affected during the operational and maintenance phases of the Project.

5.5.11. The likely significant historic environment effects that will be taken forward for assessment in the Environmental Statement are summarised in **Table 5-5**.

Table 5-5 – Likely significant historic environment effects

Activity	Effect	Receptors
Construction: Site preparation for installation of underground cables and overhead H-pole powerlines and construction of associated infrastructure (i.e. construction compounds, trackways, control points, site access and electrical cabling).	Direct disturbance to, or loss of, historic assets located within the development footprint.	The Margam Mountain registered historic landscape. Unknown non-designated buried historic assets.
Operation and maintenance: Operation of OHL infrastructure; occasional vegetation clearance to maintain clearance around OHL; temporary vehicular visitation for necessary repairs.	Changes to the heritage significance of assets through changes to their settings.	The Margam Mountain registered historic landscape. Designated historic assets (as identified in **paragraph 5.5.8**). Non-designated known historic assets.

5.6 RECOMMENDATIONS AND MITIGATIONS

FURTHER ASSESSMENT

5.6.1. It is proposed that a more detailed review of the historic and archaeological baseline is needed to inform the assessment of archaeological potentials within the scoping boundary and detailed assessment of the effects within the ES.

5.6.2. Further baseline assessment of current settings of the historic assets identified in **Section 5.5.8** and the potential impacts on setting from the Project will be required to mitigate adverse effects.

MITIGATION

5.6.3. The development of the Project design is an iterative process that will take into consideration the potential for effects on historic environment, adopting measures to avoid or minimise impacts where possible in the first instance. Where disturbance cannot be avoided, measures should be taken to ensure the adverse effects are minimised. Possible measures could include:

- Micro-siting of pole locations and underground cable route and use of alternative access routes and lay down areas to avoid/minimise direct disturbance to archaeological sensitive locations and adverse changes to setting of historic assets;
- Temporary fencing off historic assets within the vicinity of the Project to avoid impacts during construction activities; and
- Minimising vegetation loss where this would adversely affect the setting of historic assets.

5.6.4. Where avoidance of impacts to buried historic assets are not possible, an appropriate mitigation strategy will be devised to secure preservation by record (e.g. archaeological monitoring of groundworks) before any loss occurs, which can be agreed in advance with the local planning authority.

5.6.5. Within the road footprint and areas of existing modern impacts, there will be no requirement for further mitigation as any unknown archaeological remains have already been compromised.

5.6.6. In areas which have not previously been impacted by modern development, it is anticipated that the localised impacts from constructing the underground cable ducts, overhead H-pole powerlines and associated compounds, laydown areas and trackways will require archaeological monitoring and recording to mitigate their loss or disturbance.

5.6.7. Cross-discipline engagement will also be undertaken to ensure that proposed landscape and ecological environmental measures take into consideration the potential opportunities and constraints relevant to the historic environment.

CONSULTATION

5.6.8. Where necessary, engagement with relevant stakeholders (Cadw and local planning authority) will be undertaken when refining the scope of the historic environment assessment for the ES.

6 WATER RESOURCES AND FLOOD RISK

6.1 INTRODUCTION

6.1.1. This chapter summarises how the Water Resources and Flood Risk assessment will consider potentially significant effects from the construction, operation and decommissioning of the Project on the local hydrology, flood risk and hydrogeology environments. The details of the construction, operation and decommissioning can be found in Chapter 1. The proposed methodology for undertaking the Water Resources and Flood Risk assessment is summarised, in addition to identification of impacts that are recommended to be scoped in or scoped out of the assessment.

6.1.2. As part of this scoping assessment, all possible receptors within the Study Area have been identified and considered. These include, but are not limited to, main rivers, ordinary watercourses, groundwater bodies and flood risk zones. Data sources are identified and referenced, where applicable.

6.1.3. The following sections should also be considered alongside this Water Resources and Flood Risk chapter:

- Chapter 1, Section 1.1: Description of the Project;
- Chapter 1, Section 1.5: Appraisal Scope and Methodology;
- Chapter 4: Ecology;
- Chapter 7: Coal Mining; and
- Chapter 8, Section 8.5: Land Quality

6.1.4. Given the current understanding of the Project and low probability for potential impact it is not proposed to undertake a stand-alone Flood Consequence Assessment (FCA) for the Proposed Scheme. Instead, a qualitative desktop assessment of flood risk will be included within the Water Resources and Flood Risk ES chapter. In addition, it is not proposed to undertake a WFD assessment for the Proposed Scheme, but interactions with WFD waterbodies have been identified and will be reported in the Water Resources and Flood Risk ES chapter.

6.1.5. It should be noted that at the time of preparing this report, no consultation has been undertaken with relevant stakeholders with regards to Water Resources and Flood Risk . Consultations will take place to inform the future stages of the EIA, with the following consultees to be engaged with:

- **Natural Resources Wales (NRW)** to discuss licensed abstractions, specific mitigation requirements for designated sites, engineering activity requirements, issues relating to flood risk and WFD waterbodies and Flood Risk Activity Permits (FRAPs);
- **Dŵr Cymru Welsh Water** regarding water supply and sewer networks; and
- **Bridgend County Borough Council (CBC) and Neath Port Talbot CBC** regarding site-specific considerations, permitting requirements, where necessary, sewer records and drainage, flood risk considerations and any other information deemed relevant to the Project.

6.1.6. The assessment will be subject to ongoing consultation and engagement through the ES stage. Where the need for additional assessment is identified, this will be undertaken in this stage.

6.2 INFORMATION SOURCES AND STUDY AREA

INFORMATION SOURCES

6.2.1. The following sources of information were used to inform this scoping chapter:

- British Geological Survey (BGS) Geoindex[45];
- NRW Water Watch Wales Mapping[46];
- NRW Flood Map for Planning (FMfP)[47];
- NRW Development Advice Map (DAM)[48];
- NRW Data about the Natural Environment[49];
- Data Map Wales[50]; and
- Ordnance Survey (OS) Mapping[51].

6.2.2. As the scheme progresses to ES stage and consultations are undertaken, additional sources of data will be used to inform the assessment, where necessary. These sources include, but are not limited to, sewer plans, River Basin Management Plans and Strategic Flood Consequence Assessments.

STUDY AREA

6.2.3. For the Water Resources and Flood Risk assessment, the Study Area is defined as the area of the infrastructure connections, including overhead lines and underground elements through the construction, operation and decommissioning phases. A 1km buffer zone is also applied within which surface water receptors and flood risk zones will be identified, in addition to a 5km buffer for any hydrogeological considerations. The Study Area is shown in the **Figures 6.1 – 6.7** in this chapter.

[45] BGS GeoIndex (onshore). Available at: GeoIndex (onshore) - British Geological Survey [Accessed: October 2024]. Contains British Geological Survey materials © UKRI [2024].
[46] Water Watch Wales Map Gallery (Natural Resource Wales). Available at: Water Watch Wales [Accessed: October 2024]. © Copyright Natural Resources Wales 2022.
[47] Flood Map for Planning (Natural Resource Wales). Available at: Natural Resources Wales / Flood map for planning / development advice map [Accessed: October 2024]. Contains Natural Resources Wales information © Natural Resources Wales and database right. All rights reserved.
[48] Development Advice Map (Natural Resource Wales). Available at: Natural Resources Wales / Flood map for planning / development advice map [Accessed: October 2024]. Contains Natural Resources Wales information © Natural Resources Wales and database right. All rights reserved.
[49] Additional copyright statements: Soils data © Cranfield University (NSRI) and for the Controller of HMSO, 2023; Geological data © Reproduced with the permission of the British Geological Survey ©NERC. All rights Reserved; Basemapping © Crown copyright and database rights 2023. AC0000849444; and Aerial Photography © Getmapping Plc and Bluesky International Limited.
[50] Data Map Wales. Available at: Home | DataMapWales
[51] Contains OS data © Crown copyright [2024].

6.3 METHODOLOGY

TECHNICAL GUIDANCE

6.3.1. The Water Resources and Flood Risk assessment will be undertaken taking the following guidance documents in consideration:

- National Highways Design Manual for Roads and Bridges (DMRB) LA 113[52];
- Construction Industry Research and Information Association (CIRIA) guidance documents;
- Planning Practice Wales;
- Technical Advice Note 15: Development, Flooding and Coastal Erosion (TAN15)[53]; and
- Water Framework Directive Nationally Significant Infrastructure Project (NSIP) Guidance.

6.3.2. The Technical Advice Note 15: Development, Flooding and Coastal Erosion (TAN15) will be followed to inform the assessment of flood risk. The current version of this document, issued in 2004, was most recently edited in 2021 but the formal adoption of this updated document has not yet been actioned due to further consultation requirements. The DAM relates to the 2004 TAN15 and the FMfP relates to the proposed updates to TAN15: both the DAM and FMfP have been used to inform the flood risk content for this Scoping Report.

PROPOSED ASSESSMENT METHODOLOGY

6.3.3. The overarching approach to completion of the Water Resources and Flood Risk assessment will be as follows:

- Consultation with relevant bodies listed in **Section 6.1.5** to confirm the guiding principles of the assessment and hydrology issues to be considered;
- Consultation with Bridgend CBC, Dŵr Cymru Welsh Water and Neath Port Talbot CBC to ascertain further details on the baseline conditions in the Study Area;
- Identify sensitive surface water, groundwater and flood risk receptors within the Study Area through desk-based and field-based surveys and assess potentially significant impacts that the project could have on identified receptors; and
- Identify ways to mitigate, minimise or avoid potential significant impacts.

SIGNIFICANCE OF EFFECT CRITERIA

6.3.4. The identification of potentially significant impacts on Water Resources and Flood Risk receptors within the Study Area will broadly follow the approach presented in Vol. 11, Section 3 of DMRB LA113. Although not directly applicable to the nature of the Project, the assessment principles set

[52] DMRB LA 113: Road Drainage and the Water Environment (Revision 1) (Standards for Highways). Available at:
[53] Technical Advice Note 15 Development, Flooding and Coastal Erosion, 2021 (Welsh Government). Available at: Technical Advice Note 15, Developing, flooding and coastal erosion

out within the DMRB guidance provide a good basis for assessing effects of developments on the water environment and flood risk.

6.3.5. The approach to assessment is broadly presented in three stages:

- Estimating the importance of the hydrology receptor (**Table 6-1**);
- Estimating the magnitude of the impact (**Table 6-2**); and
- Assessing the significance of the effect on the hydrology receptor (**Table 6-3**).

6.3.6. The significance of the effect resulting from the Project will be assessed with reference to the importance (or sensitivity / value) of a given receptor and the magnitude of the impact. This approach provides a mechanism for identifying areas where mitigation measures may be required and to identify the most appropriate measures to alleviate the risk presented by the Project. The residual effects of the Project on hydrology receptors will be evaluated assuming that identified mitigation measures are fully implemented.

6.3.7. The Water Resources and Flood Risk assessment will be a qualitative assessment informed by professional judgement, based on experience and the use of best practice guidance, such as that published by the Natural Resources Wales, Environment Agency, CIRIA and Defra . The key determinants of sensitivity and impact magnitude will relate to the aquatic environment (used here to refer to surface water quality and designations, quantity and hydromorphology aspects), water resources (used here to refer to groundwater quantity and quality) and flood risk (used here to refer to identified receptors that may be affected).

Table 6-1 - Criteria for estimating the importance of hydrology receptors

Importance	Criteria	Example	
Very high	Feature with a high quality and rarity at an international scale, with little potential for substitution	Aquatic environment	Watercourse having a WFD classification shown in a RBMP and Q95 ≥ 1.0 m3/s. Conditions supporting sites with international conservation designations (Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites), where the designation is based specifically on aquatic features.
		Water resources	Principal aquifer providing a regionally important resource and/or supporting a site protected under EC and UK Legislation. Regionally important public water supplies. Groundwater locally supports GWDTE. Located in Source Protection Zone (SPZ) 1.
		Flood risk	Land use types defined as 'Emergency Services' (i.e. critical national infrastructure) in the TAN 15 flood risk vulnerability classification.
High	Feature with a high yield and/or quality	Aquatic environment	Watercourse having a WFD classification shown in a RBMP and Q95 <1.0m3/s.

	and rarity at a national scale, with a limited potential for substitution		Conditions supporting sites with national conservation designations (i.e. Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs)) where the designation is based specifically on aquatic features.
		Water resources	Local public water supplies. Principal aquifer providing locally important resource or supporting a river ecosystem. Groundwater supports GWDTE. Located in SPZ 2.
		Flood risk	Land use types defined as 'Highly Vulnerable' in the TAN15 flood risk vulnerability classification.
Medium	Feature with a medium yield and/or quality at a regional scale or good quality at a local scale, with some potential for substitution	Aquatic environment	Sites with local conservation designations where the designation is based specifically on aquatic features. Receptor water body: all relevant WFD elements at least moderate status/potential.
		Water resources	Un-licensed potable water abstractions, e.g. private domestic water supplies. Aquifer providing water for agricultural or industrial use with limited connection to surface water. Located in SPZ 3.
		Flood risk	Land use types defined as 'Highly Vulnerable' in the TAN15 flood risk vulnerability classification.
Low	Feature with a low yield and/or quality at a local scale, with some potential for substitution	Aquatic environment	Receptor water body: relevant WFD elements* at less than moderate status/potential. Small watercourses not classified as a WFD river water body.
		Water resources	Licensed abstractions which are not public water supply, e.g. industrial process water, spray irrigation.
		Flood risk	Land use types defined as 'Less Vulnerable' in the TAN15 flood risk vulnerability classification.
Negligible	Feature with minimal yield and/or very low quality at a local scale, with a high potential for substitution	Aquatic environment	Receptor water body: relevant WFD elements* at poor status/potential. Minor water features such as ditches, not classified as a WFD river water body. Watercourses not having a WFD classification shown in a RBMP and Q95 ≤0.001m3/s.

		Water resources	Un-licensed non-potable abstractions, e.g. livestock supplies. Unproductive strata.
		Flood risk	Land use types which are considered to be exceptions under TAN 15 as they are required in a fluvial, tidal or coastal location by virtue of their nature.

Table 6-2 - Criteria for estimating the potential magnitude of an impact on a hydrology receptor

Magnitude	Criteria	Example	
High	Results in major change to feature, of sufficient magnitude to affect its use/integrity	Aquatic environment	Deterioration in river flow regime, morphology or water quality, leading to sustained, permanent or long-term breach of relevant Conservation Objectives (COs) or downgrading of WFD status (including downgrading of individual WFD supporting elements). Loss or extensive change to a fishery. Loss or extensive change to a designated nature conservation site.
		Water resources	Complete loss of resource or severely reduced resource availability and/or quality, permanently compromising the ability of water users to exercise licensed rights, i.e.; ▪ Loss of, or extensive change to, an aquifer. ▪ Loss of regionally important water supply. ▪ Potential high risk of pollution to groundwater from routine runoff. ▪ Loss of, or extensive change to GWDTE or baseflow contribution to protected surface water bodies. ▪ Reduction in water body WFD classification. ▪ Loss or significant damage to major structures through subsidence or similar effects.
		Flood risk	Change in flood risk resulting in potential loss of life or major damage to property and infrastructure. Increase in peak flood level (> 100mm).
Medium	Affects the integrity of the attribute, or loss	Aquatic environment	Deterioration in river flow regime, morphology or water quality, leading to periodic, short-term and reversible breaches of relevant COs, or downgrading of WFD status.

	of part of an attribute.		(including downgrading of individual WFD supporting elements or ability to achieve future WFD objectives). Partial loss in productivity of a fishery.
		Water resources	Moderate reduction in resource availability and/or quality, which may compromise the ability of water users to exercise licensed rights on a temporary basis or for limited periods. i.e.: ▪ Partial loss or change to an aquifer. ▪ Degradation of regionally important public water supply or loss of significant commercial/ industrial/ agricultural supplies. ▪ Potential medium risk of pollution to groundwater from routine runoff. ▪ Partial loss of the integrity of GWDTE. ▪ Contribution to reduction in water body WFD classification. ▪ Damage to major structures through subsidence or similar effects or loss of minor structures.
		Flood risk	Change in flood risk resulting in potential for moderate damage to property and infrastructure Increase in peak flood level (> 50mm).
Minor	Results in minor change to feature, with insufficient magnitude to affect its use/integrity in most circumstances	Aquatic environment	Measurable deterioration in river flow regime, morphology or water quality, but remaining generally within COs, and with no change to WFD status (of overall status or supporting element status).
		Water resources	Minor reduction in resource availability and/or quality, but unlikely to affect the ability of water users to exercise licensed rights i.e.: ▪ Potential low risk of pollution to groundwater from routine runoff. ▪ Minor effects on an aquifer, GWDTEs, abstractions and structures.
		Flood risk	Change in flood risk resulting in potential for minor damage to property and infrastructure Increase in peak flood level (> 10mm).
Negligible	Results in little change to feature, with insufficient magnitude to affect its use/integrity	Aquatic environment	Limited measurable deterioration in river flow regime, morphology or water quality and limited probability of consequences in terms of COs or WFD designations.
		Water resources	Limited measurable change in resource availability or quality and limited probability of changes to the ability of water users to exercise licensed rights.

		Flood risk	Increased frequency of flood flows, but which does not pose an increased risk to people, property and infrastructure. Negligible change to peak flood level (≤ +/- 10mm).
No change	Results in no change to feature, with insufficient magnitude to affect its use/integrity	Aquatic environment	No measurable deterioration in river flow regime, morphology or water quality and no consequences in terms of COs or WFD designations.
		Water resources	No measurable change in resource availability or quality and no change in ability of water users to exercise licensed rights.
		Flood risk	No increase in frequency of flood flows, and no increase in risk to people, property and infrastructure.

6.3.8. **Table 6.3** provides an indication of how the level of effect has been categorised from the interaction of a receptor's sensitivity to change and the magnitude of change. A level of effect of Moderate or greater is generally of most importance to the decision-maker, and so these effects are considered 'significant'. The significance of effects identified as being 'potentially significant' has been confirmed via professional judgement. Where a level of effect is Minor or below, these are generally considered to be 'not significant'.

6.3.9. Reference is made to:

- Major effects, which will always be determined as being significant in EIA terms.
- Moderate effects can be significant, or nor significant, based on specific scenarios and professional judgement; and
- Minor or negligible effects, which will always be deemed as not significant.

6.3.10. Effects can either be positive or negative.

Table 6-3 - Criteria for estimating the significance of anticipated effects

		Magnitude of impact				
		High	**Medium**	**Low**	**Negligible**	**No Change**
Importance of receptor	**Very high**	Very Large (Significant)	Large or Very Large (Significant)	Moderate or Large (Significant)	Slight (Not Significant)	Neutral (Not significant)
	High	Large or Very Large (Significant)	Moderate or Large (Significant)	Slight or Moderate (Potentially Significant)	Slight (Not Significant)	Neutral (Not significant)

	Medium	Moderate or Large (Significant)	Moderate (Potentially Significant)	Slight (Not significant)	Neutral or Slight (Not significant)	Neutral (Not significant)
	Low	Slight or Moderate (Potentially Significant)	Slight (Not significant)	Neutral or Slight (Not significant)	Neutral or Slight (Not significant)	Neutral (Not significant)
	Negligible	Slight (Not significant)	Neutral or Slight (Not significant)	Neutral or Slight (Not significant)	Neutral (Not significant)	Neutral (Not significant)

AQUATIC ENVIRONMENT

6.3.11. Assessment of the aquatic environment will encompass watercourses and other significant surface water features such as ponds. The baseline has been informed from OS mapping to identify surface water features and Water Watch Wales for information regarding the status of WFD waterbodies within the 1km Study Area. The sensitivity of the water features will be based on flow/catchment size, hydromorphology, designations, potential to support ecological receptors (as informed by ecology chapter) and the potential to support abstraction.

6.3.12. The assessment will be qualitative and no walkover, survey or water quality monitoring is proposed. Consultation will be undertaken with relevant stakeholders as summarised in **Section 6.1.6.**

WATER RESOURCES

6.3.13. The assessment of water resources will look at groundwater receptors - principally groundwater abstractions, potential for river baseflow and potential to support groundwater-dependent terrestrial ecosystems (GWDTEs). The baseline condition and importance of the receptor will be informed from review of the desk-based sources listed in **Section 6.2.1** including the British Geological Survey (BGS) online mapping.

6.3.14. Consultation will be undertaken with relevant stakeholders as summarised in **Section 6.1.6.**

6.3.15. The assessment of water resources will be qualitative. No groundwater monitoring or modelling will be undertaken, and it is not proposed to install any boreholes to inform future monitoring.

FLOOD RISK

6.3.16. A high-level qualitative assessment of flood risk and flood consequences will be undertaken to inform the EIA, with findings presented in the ES. It is not proposed to prepare a stand-alone Flood Consequence Assessment. The assessment will assess the risk of flooding to infrastructure and other sensitive receptors within the Study Area through the construction, operation and decommissioning phases of the project.

6.3.17. The assessment of flood risk will be conducted in accordance with requirements of TAN15 and Planning Policy Wales (PPW). Assessment for the construction, decommissioning and operational

phases will be informed by data made available by NRW, the FMfP and DAM, DataMap Wales and relevant data provided by Bridgend and Neath Port Talbot CBCs.

6.3.18. At this stage it is expected that the assessment of flood risk will be qualitative. The requirements for quantitative analysis will be determined with relevant bodies on commencement of the EIA. If quantitative analysis is deemed to be required, it is expected that this would be limited to the operational phase, with construction and decommissioning phases expected to be qualitative only.

6.3.19. An operational phase drainage strategy is not deemed to be required to support the Proposed Scheme. The recommended approach for managing surface water runoff during the construction phase will be summarised in the CEMP, with expectation that this will be developed further by the appointed contractor in consultation with the relevant authorities, as required.

6.4 BASELINE ENVIRONMENT

EXISTING BASELINE

Surface Water Features

6.4.1. A map illustrating identified surface water features in the Study Area can be seen in **Figure 6-1**.

6.4.2. A review of OS mapping reveals that the Project crosses a number of surface water features directly, in addition to a number being located within the Study Area. These features comprise a mix of unnamed ordinary watercourses in the northern half of the Project and a number of named rivers in the overhead line section to the south of Y Parc and Maesteg.

6.4.3. All waterbodies are located in the Western Wales River Basin District.

6.4.4. Llynfi is a Main River and WFD-designated waterbody (headwaters to Lletty Brongu STW) (GB110058026331) located to the east of the Project within the 1km Study Area. The waterbody not classified as a heavily modified river and is of Moderate overall status, which includes Moderate Ecological status and High Chemical classification status, as assessed during the WFD River Waterbody Catchment Cycle 3 Assessment (2019), which builds on the Cycle 1 and Cycle 2 findings.

6.4.5. Ffrwd Wyllt is an Ordinary Watercourse and WFD-designated waterbody (headwaters to tidal limit) (GB110058026100) located to the west of the Project. The waterbody is classified as a heavily modified river with Moderate overall status, which includes Moderate Ecological status and High Chemical classification status, as assessed during the WFD River Waterbody Catchment Cycle 3 Assessment (2019).

6.4.6. Further to the south, there are two additional WFD-designated waterbodies within the Study Area. They are listed below with additional details:

- Kenfig (headwaters to tidal) (GB110058026170): A Main River located close to the western and southeast boundaries of the Project. The waterbody is of Moderate overall status, including Moderate Ecological status and High Chemical classification status.
- Llynfi (Lletty Brongu STW to conf with Ogmore) (GB110058026332): A Main River located to the west of the Project. The waterbody is of Moderate overall status, including Moderate Ecological status and High Chemical classification status.

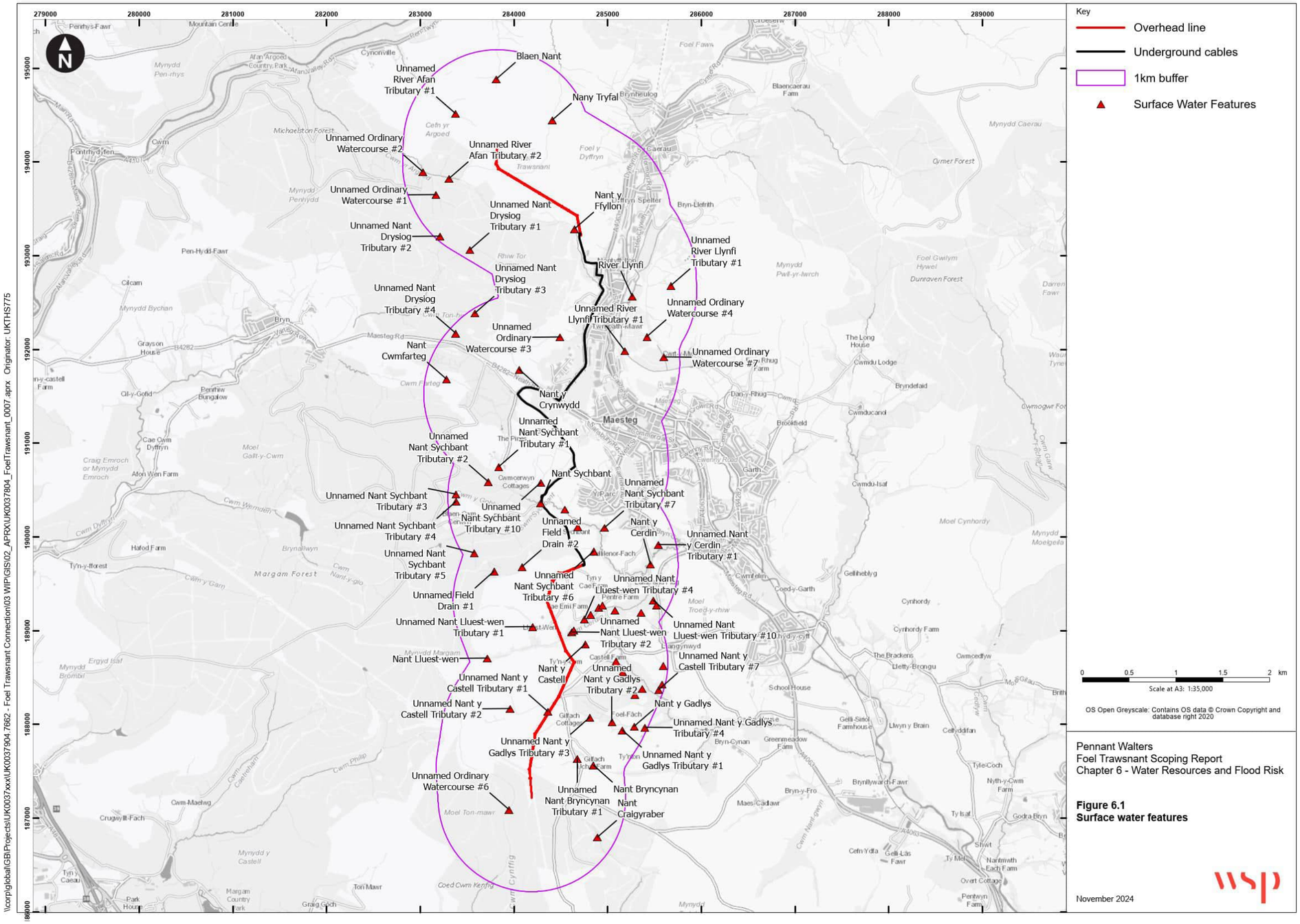
6.4.7. Review of OS Mapping identifies several watercourses to the west of the Project that are indicated to flow in a general north-south direction, from more elevated areas to lower lying areas. Examples include tributaries from Nant Cynon in the north at Foel Trawsnant and Nant Cwmfarteg further to the south. Review of OS Mapping indicates that a number of these watercourses would likely flow through culverts underneath Nant-y-ffyllon and Maesteg. The outfall of these culverts is assumed to be the Afon Llynfi that flows through Nant-y-ffyllon and Maesteg. Survey of these features to determine their alignment is not proposed to inform the EIA but may be required to inform detailed design and construction depending on the nature of the risks identified during the EIA.

6.4.8. A number of the identified culverts and open watercourses will be crossed by the Project where the UGC is to be installed. This includes works that will be installed in sections of the highways that cross over the Nant Sychbant, which is located just to the north of Moel Sychbant. The culvert crossings are mainly in the built-up areas in Maesteg and Nant-y-ffyllon, for example of the culverted section of Nant y Crynwydd at Tair Waun Place and an unnamed watercourse crossing underneath Heol Ty Gwyn to the north of Neath Road. Although these are acknowledged to be culvert crossings, the work undertaken to lay the cabling will be done on the highways and is not expected to interact with or alter the culverted watercourses. Therefore, no impact to the watercourses is expected.

6.4.9. More detailed assessment of the hydrological properties of watercourses crossed within the Study Area will be undertaken at ES stage.

6.4.10. On the eastern side of the Afon Llynfi at Nant-y-ffyllon, there is a network of small watercourses that could originate either from Afon Llynfi or could be tributaries from other watercourses further to the east. The southern section of the Project crosses a number of watercourses, including Nant Lluest-wen and Nant y Castell, both of which are ordinary watercourses and not Main Rivers or WFD waterbodies. **Figure 6-1** shows the watercourse locations.

Figure 6-1 - Surface water features



Designated Sites

6.4.11. Review of NRW Data about the Natural Environment indicates no designated sites within the Project boundary or the 1km Study Area of relevance to the Water Resources and Flood Risk assessment. This includes areas designated as Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and RAMSAR sites. There are designated groundwater areas, which are discussed in the Groundwater section of the below.

Existing Drainage

6.4.12. Information on the sewerage and highways drainage in the Study Area has not yet been requested. This will be requested from relevant authorities to inform the ES.

6.4.13. As discussed in the Surface Water Features section, a review of OS Mapping indicates that there are a number of culverted watercourses that are considered likely to flow under Nant-y-ffyllon and Maesteg. The condition these culverted watercourses is currently unknown; information regarding the condition of these culverts will be requested through consultation.

6.4.14. Given the topography in the Study Area, with areas to the west of the Project higher than areas to the east, the highways drainage, sewerage and networks of small watercourses are expected to ultimately discharge to the River Llynfi. The drainage outfall arrangement remains unconfirmed; a survey of the watercourses and the drainage outfalls is recommended, and the need for such surveys will be discussed through consultations with relevant authorities. This consultation exercise will include a request for sewer data from Welsh Water, especially for the highways where the UGC is proposed.

Surface Water Discharge and Abstraction Consents

6.4.15. Information regarding surface water abstraction points is available via NRW and will be used to inform the assessment at ES stage. Discharge consents data will be requested through consultation with Neath Port CBC and Bridgend CBC and will be used to inform the assessment at ES stage.

Groundwater

6.4.16. The alignment of the Project passes through Secondary (Undifferentiated) Superficial Aquifers. In an area to the south of Neath Road, the Project comes within approximately 30m of a Secondary A Aquifer. In addition to the Superficial Aquifers, the Project also passes through Secondary A Bedrock Aquifer areas.

6.4.17. Within the 5km Study Area, there is a mix of Secondary (Undifferentiated), Secondary A and Unproductive Superficial Aquifers. Unproductive Aquifers are located mostly at the northern extent of the Study Area with small areas to the west and northeast of the Project. Secondary A Aquifers follow the alignment of the watercourses such as the Afon Llynfi and Avan to the east and north of the Project, respectively. Secondary (Undifferentiated) Aquifers also roughly follow the alignment of the watercourses and occupy larger areas than the Secondary A and Unproductive Aquifers.

6.4.18. The 5km Study Area comprises mostly Secondary A Bedrock Aquifer geology composition, with a small area on the southern extent of the Study Area boundary near Pyle and Coedhirwaun being located in a Secondary B Bedrock Aquifer area.

6.4.19. DataMapWales shows the following WFD Groundwater bodies to be within the Study Area, all within the Western Wales River Basin District:

- **Swansea Carboniferous Coal Measures (GB41002G201000)**: Overall Poor status, mainly due to Chemical elements (Cycle 3, 2019). The Project lies entirely within this waterbody;
- **SE Valleys Carboniferous Coal Measures (GB40902G201900)**: Within the eastern side of the Study Area. It is of overall Poor waterbody status, driven mainly by Chemical elements (Cycle 3, 2019); and
- **Swansea Southern Carboniferous Limestone (GB41001G201300)**: At the southern extent of the 5km Study Area boundary. It is of overall Poor waterbody status, driven mainly by Chemical elements (Cyle 3, 2019).

6.4.20. BGS Geology Viewer online mapping provides geological information of the superficial and bedrock geology within the Study Area. **Table 6-4** below offers further details:

Table 6-4 - BGS Geology Viewer

Geology classification	Location
Superficial - Till, Devensian - Diamicton. Sedimentary superficial deposit	East and west of the Project, with a section of the Project running through this geology adjacent to Y Parc.
Superficial - Alluvium - Clay, silt, sand and gravel. Sedimentary superficial deposit	Mostly follows the alignment of the Afon Llynfi and other watercourses in the Study Area.
Superficial - Alluvial Fan Deposits - Sand and gravel. Sedimentary superficial deposit	One small area located in the southern area of Maesteg.
Superficial - Glaciofluvial Deposits, Devensian - Sand and gravel. Sedimentary superficial deposit	Located mostly to the north and southwestern areas of the Study Area.
Superficial - Peat - Peat. Sedimentary superficial deposit	Isolated patches of peat located throughout the Study Area, particularly to the north.
Bedrock - Hughes Member - Sandstone. Sedimentary bedrock	Located mostly to the north of the Project closer to Neath Port Talbot, and to the southeast of the Project.
Bedrock - Brithdir Member - Sandstone. Sedimentary bedrock	Areas to the north and immediately adjacent to the Project are present in the Study Area.
Bedrock - Llynfi Member - Sandstone. Sedimentary bedrock	Located mostly in the north reaches of the Project OHL area, and also to the east of the Project on the other side of the Afon Llynfi.
Bedrock - South Wales Middle Coal Measures Formation - Mudstone, siltstone and sandstone. Sedimentary bedrock	Area located east and west of Nantffyllon and areas located at the southern extent of the Study Area.

Bedrock - Rhondda Member - Sandstone. Sedimentary bedrock	Areas located throughout the Study Area.

6.4.21. **Figure 6-2** to **6-4** offers a visualisation of the bedrock and superficial geology compositions across the 5km Study Area.

6.4.22. As discussed in the **Chapter 8, Section 8.5: Land Quality**, no historical landfills are shown within the Study Area, according to information on DataMap Wales. The northern section of the proposed OHL and the proposed UGC route run through areas where historical mineral extraction (quarrying) and coal mining have taken place, including some shallow coal workings. There is potential for localised contamination to be present in the form of made ground and areas of historical waste disposal associated with former mineral extraction, including potential infilling of voids. Agricultural activities can result in land contamination although most agricultural areas within the Study Area would be expected to be free of significant contamination arising from agricultural land use.

6.4.23. **Chapter 8, Section 8.5: Land Quality** states that a full review of potential sources of contamination will be undertaken as part of a Phase 1 Desk Study to support the planning application and inform any Phase 2 Ground Investigation (including quantitative risk assessment) if this is necessary, to assess risks to the environment posed by contamination that may be present.

Figure 6-2 - Bedrock geology composition

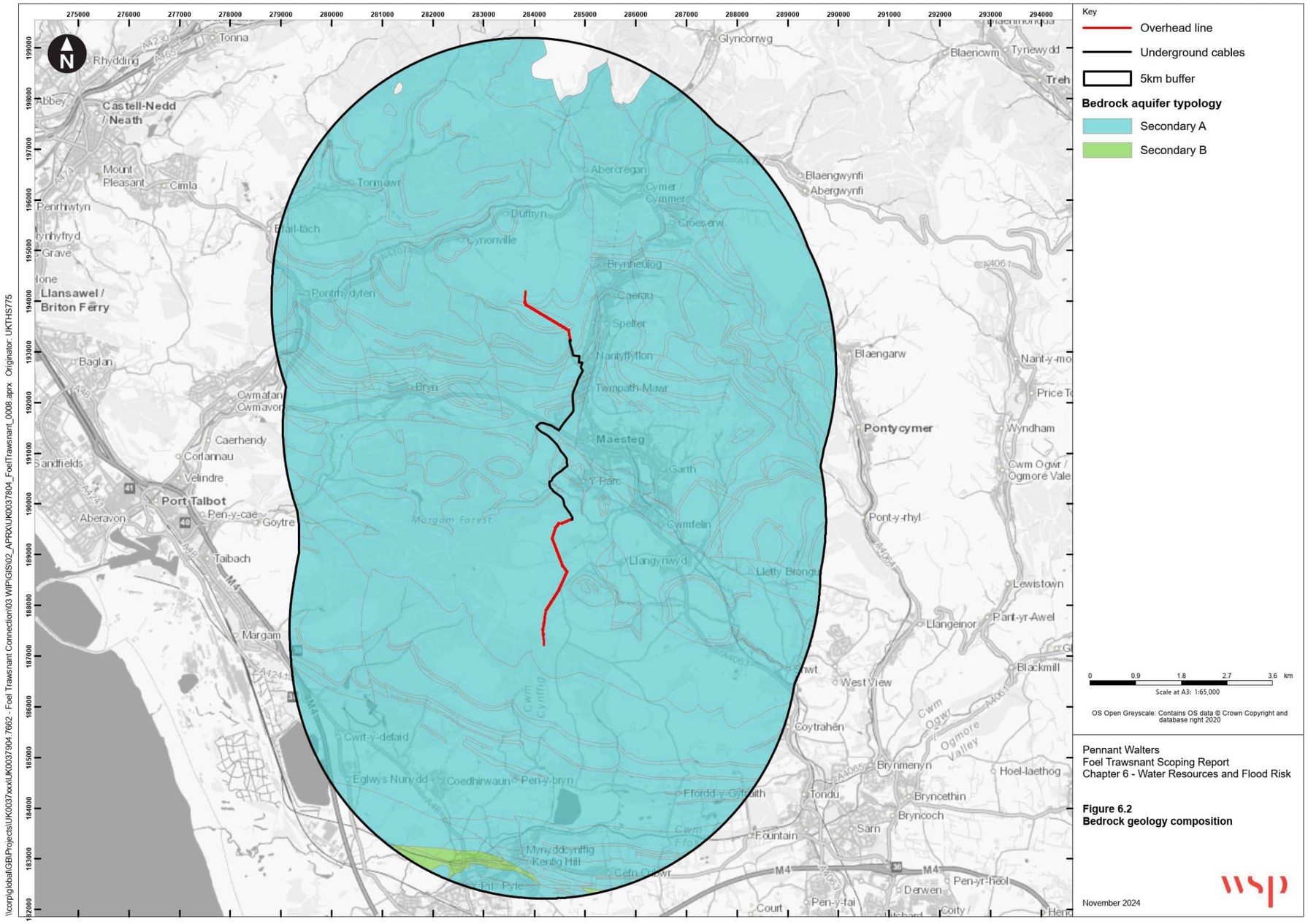


Figure 6-3 - Superficial geology composition

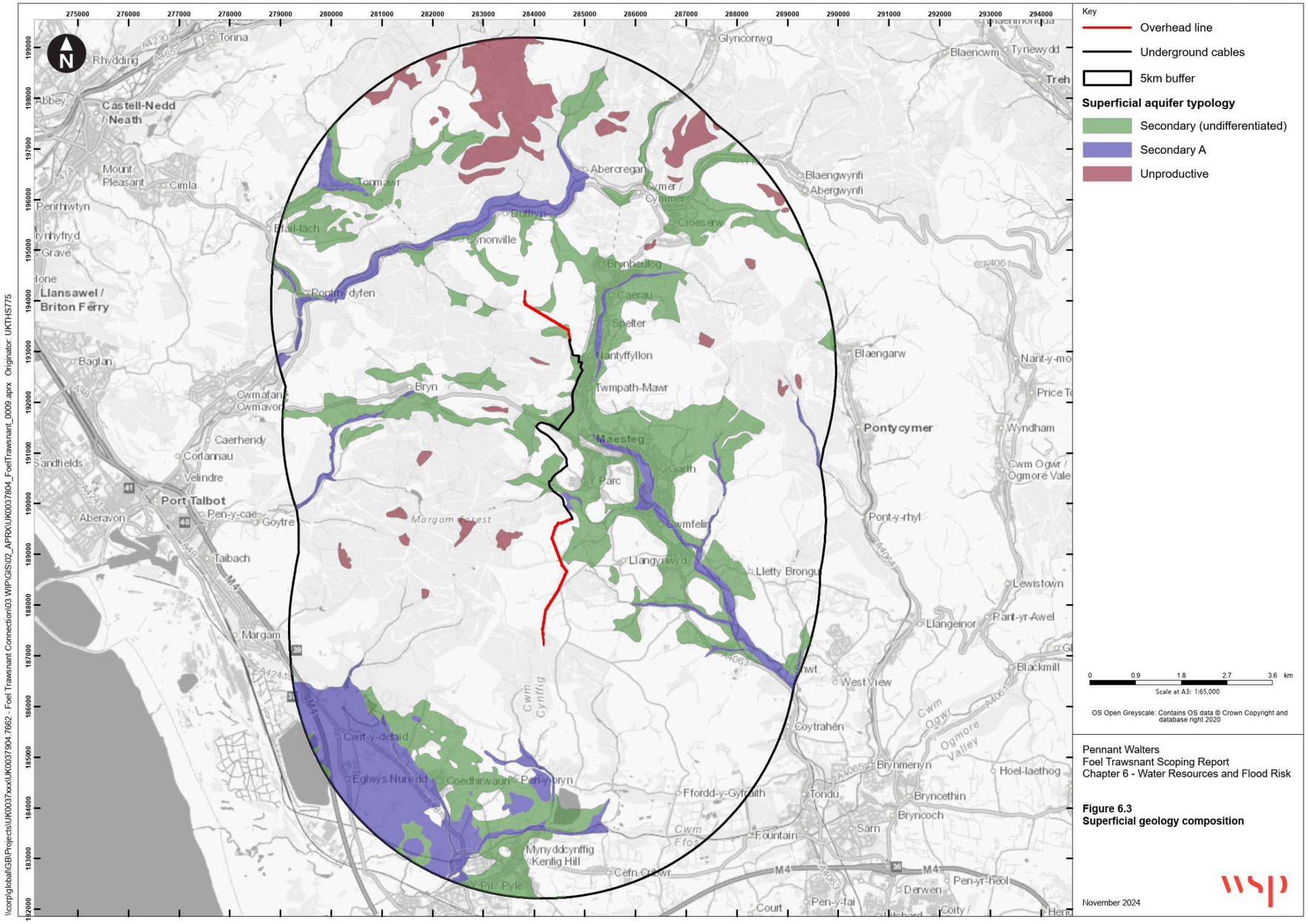
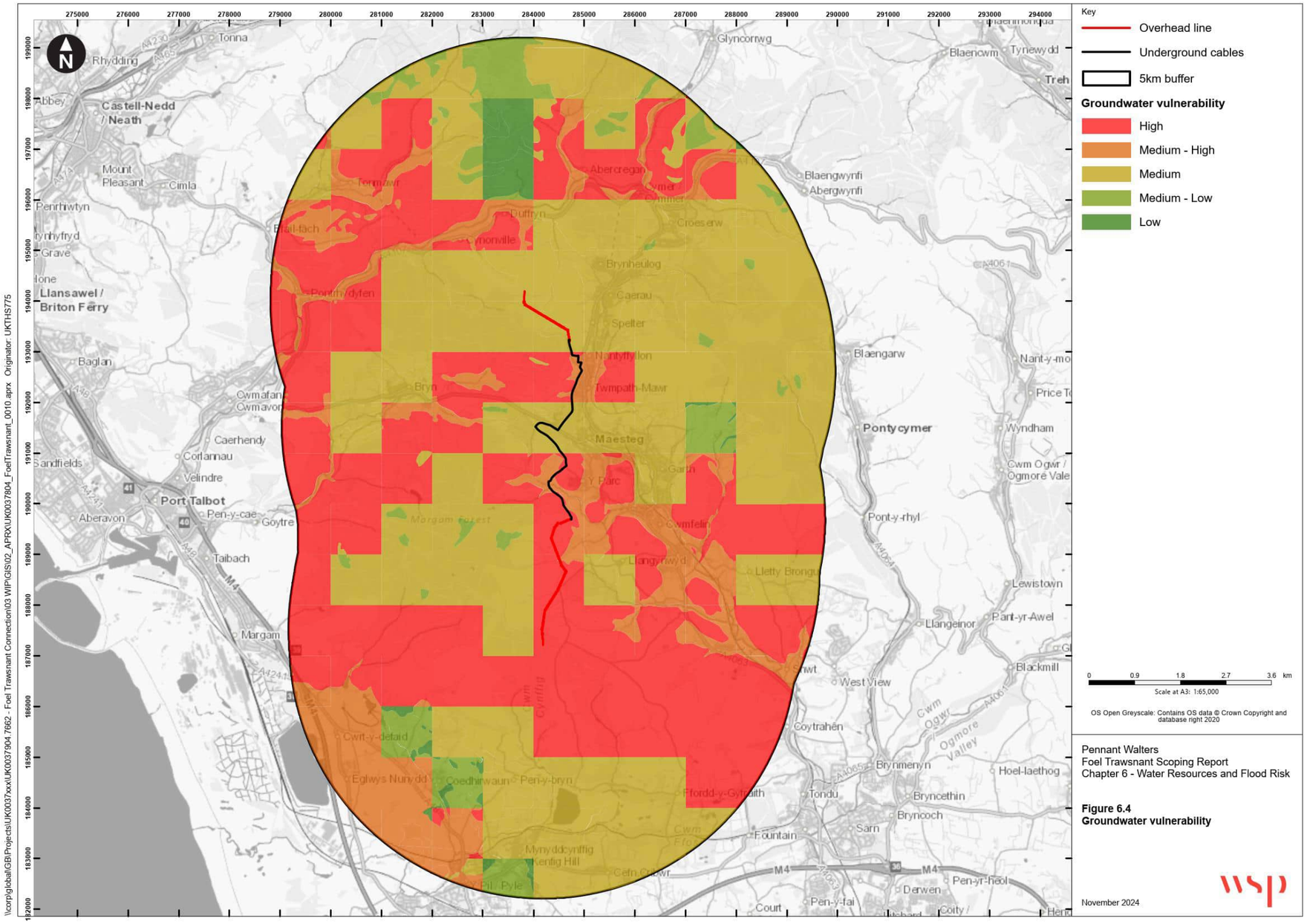


Figure 6-4 - Groundwater vulnerability



Risk of Fluvial/Tidal Flooding

6.4.24. Two sources of data were used to inform the assessment of flood risk to the Project:

- DataMapWales: Flood Map for Planning (FMfP); and
- DataMapWales: Development Advice Maps (DAM).

6.4.25. The FMfP is a spatial representation of the most up to date flood risk data for Wales. It currently has no official status until the Welsh Government formally adopts the updated TAN 15 but is viewed as the best available information on flood risk looking ahead for the next century (i.e. taking climate change into account). It should also be noted that the extents shown in the mapping are based on the assumption that there are no flood defences in place.

6.4.26. The DAM is a spatial representation of areas at risk of flooding from fluvial and tidal sources to align with the policy requirements as set out within the current TAN 15 and Planning Policy Wales. It is used as a precautionary indication of flood risk for the purposes of guiding new developments.

6.4.27. The fluvial and tidal (including coastal and form the sea) flood zones for both maps are defined in the following way:

Flood Map for Planning:

- **Flood Zone 1 (Rivers and Sea)**: Areas with less than a 0.1% (1 in 1000) chance of flooding from rivers or the sea in a given year, including the effects of climate change;
- **Flood Zone 2 (Rivers)**: Areas with 0.1% to 1% (1 in 1000 to 1 in 100) chance of flooding from rivers in a given year, including the effects of climate change;
- **Flood Zone 3 (Rivers)**: Areas with more than 1% (1 in 100) chance of flooding from rivers in a given year, including the effects of climate change;
- **Flood Zone 2 (Sea)**: Areas with 0.1% to 0.5% (1 in 1000 to 1 in 200) chance of flooding from the sea in a given year, including the effects of climate change; and
- **Flood Zone 3 (Sea)**: Areas with more than 0.5% (1 in 200) chance of flooding from the sea in a given year, including the effects of climate change.

6.4.28. **Development Advice Maps:**

- **Flood Zone A**: Little or no risk of fluvial/coastal flooding;
- **Flood Zone B**: Areas known to have flooded in the past; and
- **Flood Zone C**: The extreme 0.1% (1 in 1000) annual probability flood outline.

6.4.29. The Project largely lies outside fluvial Flood Zone 2 and 3 (FMfP) and Flood Zone B and C (DAM). The northern and southern OHL sections of the scheme lie entirely outside these areas and interaction between flood risk zones.

6.4.30. The UGC crosses narrow Flood Zone 2 and 3 (FMfP) and Flood Zone C2 (DAM) areas along the alignment of the Nant Sychbant to the west of Y Parc. These flood zone areas appear to be mostly confined to within the alignment of the Nant Sychbant. As such, interactions with the flood zones at this location are expected to be minimal.

6.4.31. The other flood zone crossing is where the alignment crosses the DAM Flood Zone C2 adjacent to Nant-y-ffyllon. While this is a flood zone crossing, the underground cabling at the crossing is being

installed into Garnwen Road, meaning interaction with the Flood Zone C2 area is expected to be minimal at this location.

6.4.32. Extracts from the FMfP and DAM are shown in **Figure 6-5** and **6-6.**

Figure 6-5 - Flood Map for Planning – Fluvial flood risk

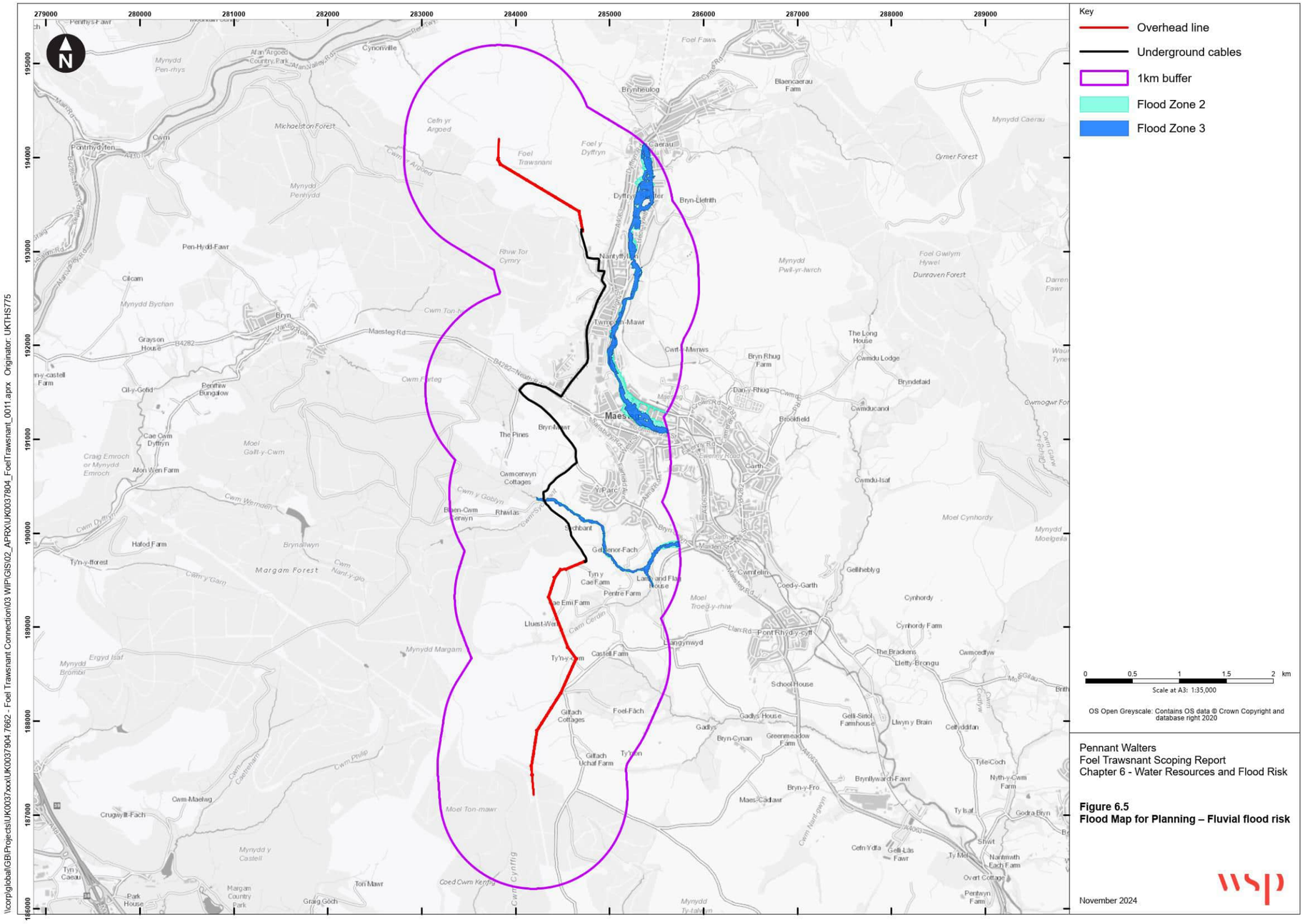
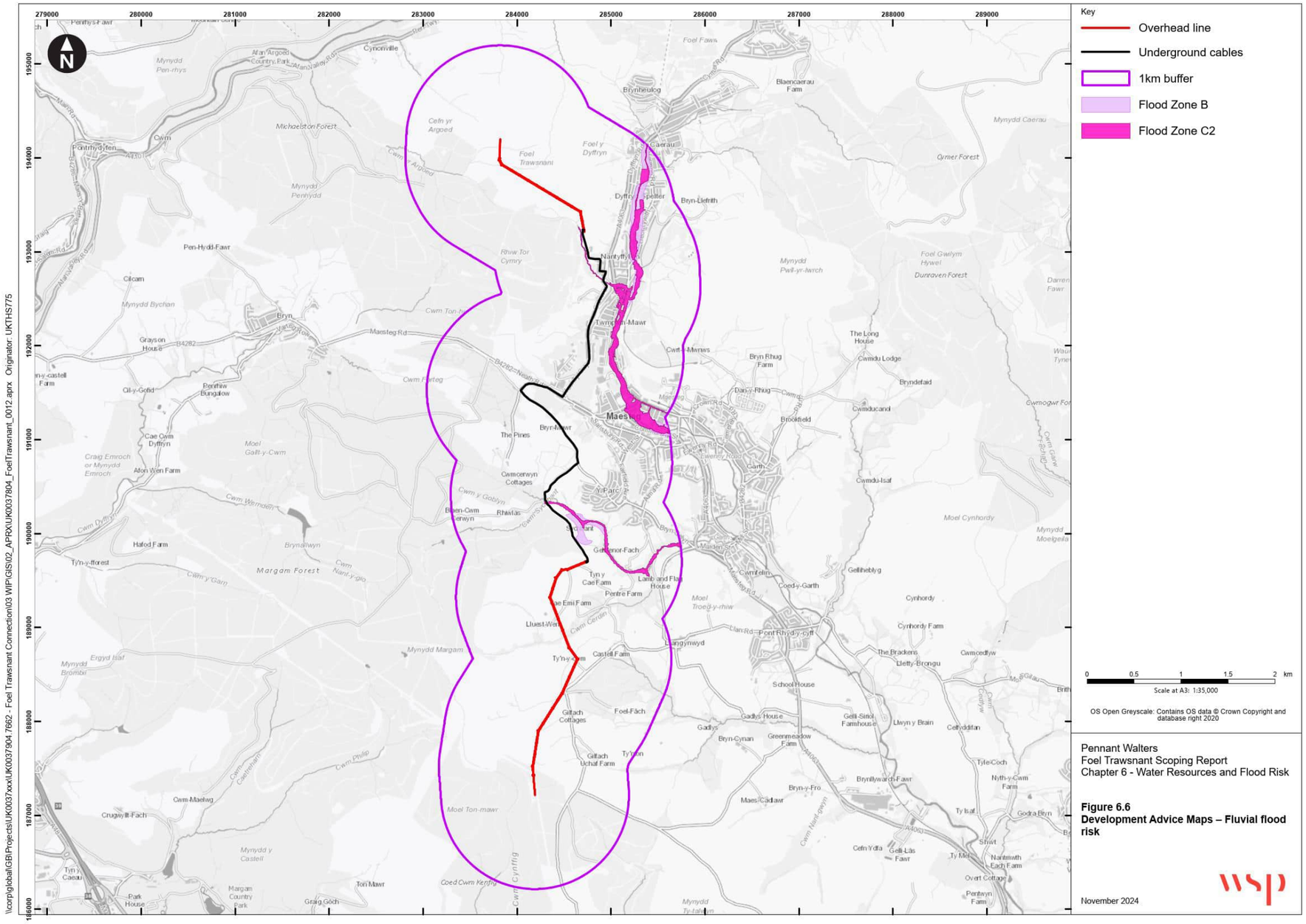


Figure 6-6 - Development Advice Maps – Fluvial flood risk



Risk of Surface Water/Small Watercourse Flooding

6.4.33. Baseline information regarding surface water flows and smaller watercourses has been obtained from the FMfP. While this data will not be official until the new TAN 15 is adopted, it does represent the most up to date flood risk zones for Wales.

6.4.34. NRW defines surface water/small watercourse flood zones as the following:

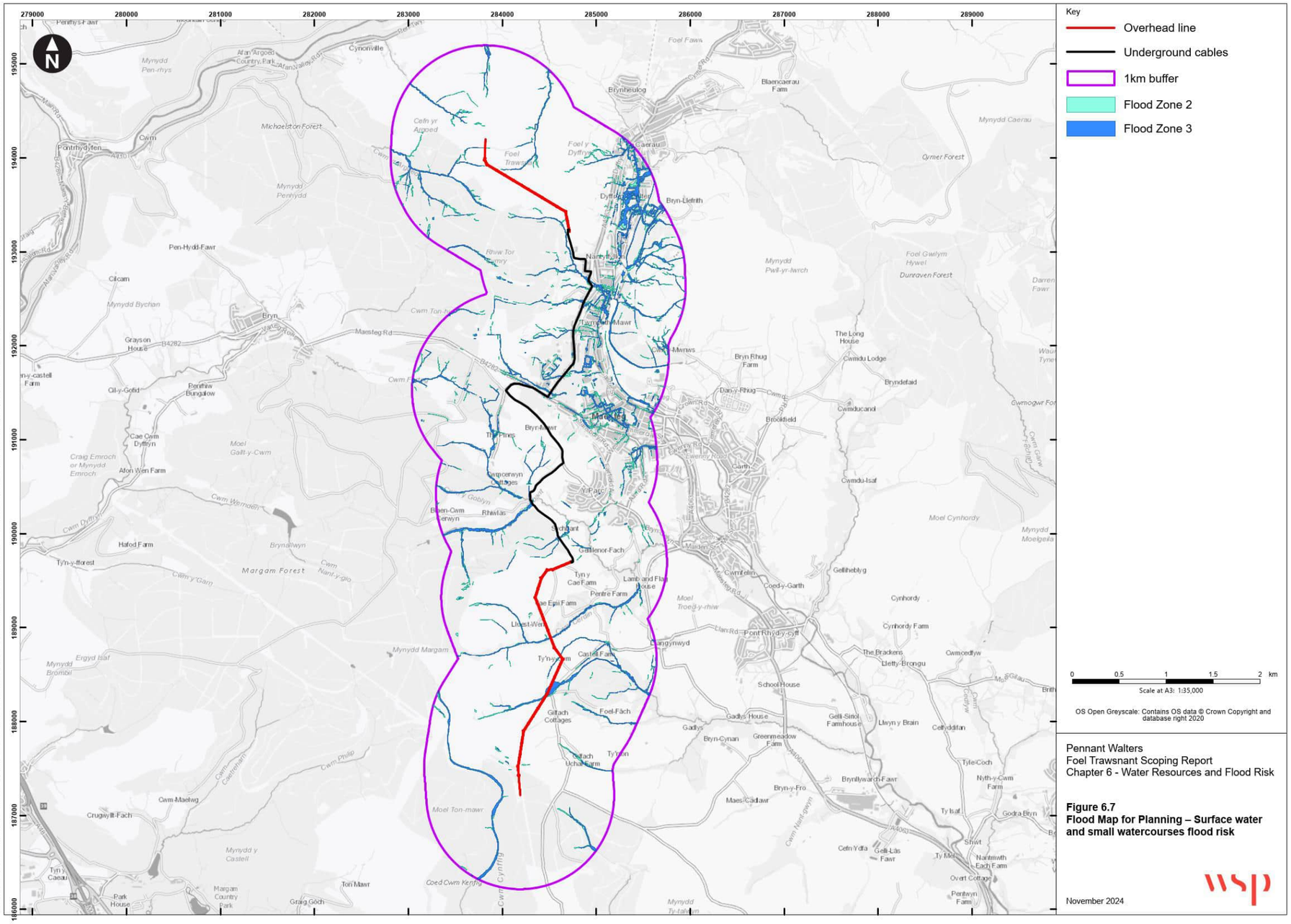
- **Flood Zone 1 (Surface Water and Small Watercourses)**: Extent of flooding from surface water and small watercourses with less than 0.1% (1 in 1,000) chance of happening in any given year;
- **Flood Zone 2 (Surface Water and Small Watercourses)**: Extent of flooding from surface water and small watercourses with less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1,000) chance of happening in any given year, including an allowance for climate change; and
- **Flood Zone 3 (Surface Water and Small Watercourses)**: Extent of flooding from surface water and small watercourses with a 1% (1 in 100) chance or greater of happening in any given year, including an allowance for climate change.

6.4.35. A review of the FMfP shows a number of areas of surface water and small watercourse flooding in close vicinity to the Project within the 1km Study Area. This is expected due to the number of ordinary watercourses, rivers and tributaries that flow from areas of greater elevation surrounding the site. A number of these watercourses are indicated to drain into the Afon Llynfi.

6.4.36. The Project lies to the west of urban areas such as Nant-y-ffyllon, Maesteg and Y Parc. Surface water flood risk in these areas could be attributed to the topography and also the urban environment allowing for the generation of overground flow paths and subsequent pooling.

6.4.37. The areas at risk of surface water flooding are shown in **Figure 6-7**, where an indication of the number of interactions the Project has with the higher risk areas can be gauged. Further investigation into the implications of these interactions will be undertaken at ES stage.

Figure 6-7 - Flood Map for Planning – Surface water and small watercourses flood risk



Risk of Reservoir Flooding

6.4.38. Review of the NRW Large Raised Reservoir layer (as presented on the FMfP) shows that the Project is surrounded by a number of registered reservoirs, namely:

- Cwmwernderi, approximately 3km to the west of the Project;
- Brombili, New Pond and Eglwys Nunydd, all greater than 5km to the west of the Project near Port Talbot; and
- Llangeinor, greater than 5km to the southeast of the Project.

6.4.39. The FMfP shows the Project and 1km Study Area extent to lie outside of the mapped flood extents of these reservoirs should a breach occur. There are also no reservoirs located within the 1km Study Area.

6.4.40. Large reservoirs, holding over 10,000 cubic metres of water, are also strictly monitored and inspected by specialist engineers. There is an enforcement body ensuring that these responsibilities are undertaken in accordance with the Reservoirs Act 1975[54].

Risk of Groundwater Flooding

6.4.41. Groundwater flooding is caused by the slow emergence of groundwater flow into below ground structures/openings or onto the ground's surface. There can be a number of causes of groundwater flooding which include, but are not limited to:

- Emergence of groundwater from high-permeability aquifers with high water tables;
- Extended periods of heavy rainfall surcharging permeable aquifers;
- The installation of man-made structures; or
- Changes in river levels.

6.4.42. The risk of groundwater flooding across the study area varies with local geology type. For example, Alluvial Fan Deposits can present a higher risk of groundwater emergence due to relatively high porosity, but Sandstone formations generally carry a low-medium risk.

6.4.43. The requirement for a detailed ground investigation will be assessed as the Project progresses. Consultation with relevant statutory bodies could offer further details on the risk. More detailed information on construction will inform the level of risk through the construction and decommissioning phases when a clearer idea of activities and processes is made available.

6.4.44. **Figure 6-2** to **Figure 6-4** offer a spatial representation of the different geological compositions and vulnerability in the Study Area that could suggest increased groundwater flood risk.

[54] Natural Resources Wales / Flooding from reservoirs

6.5 APPRAISAL

CONSTRUCTION PHASE

6.5.1. The following is a list of potential significant effects through the construction of the Project:

- Pollution risk to waterbodies/aquifers from HGVs/construction plant or construction processes, including compromising the quality of WFD waterbodies While the exact construction method for both the OHL and UG cabling is yet to be confirmed, vehicular movements for the installation of H-poles and angle poles and for excavated/infilling materials along the highways all have potential to present a pollution risk to watercourses and groundwater resources which have intertwined connectivity across the Study Area.
- Temporary impact to the quality, flow dynamics, hydromorphological properties and hydraulic capacity of watercourses crossed by the Project. One area in particular is the crossing over Nant Sychbant where underground cabling is proposed;
- Temporary impact to groundwater levels and flows associated with dewatering of below ground excavations.
- Increase in flood risk and indirect pollution risk associated with works and temporary land take in areas identified to be at fluvial and surface water flood risk. The intention is to utilise existing hardstanding areas where possible, though it is acknowledged that there will likely be a need for additional laydown areas, particularly in more rural areas to the south. Though it is also likely that the floodplain in the Study Area can be avoided, the construction methods are still pending confirmation and therefore flood risk should be scoped into this assessment.

6.5.2. As discussed in **Chapter 8, Section 8.5: Land Quality**, the largest potential for disturbance of contaminated land that could affect environment receptors would occur during construction since this is when most ground disturbance would occur. Risks will be managed through compliance with standard best practice guidance (including the Environment Agency's Land Contamination Risk Management (LCRM)) and in accordance with measures that will be summarised in the CEMP (that will be informed by the findings of the Phase 1 Desk Study). Very minimal ground disturbance would occur during operation, and during decommissioning it is anticipated that underground infrastructure would be left in situ. On this basis, the **Chapter 8, Section 8.5: Land Quality** concludes there should be no potential for significant effects associated with land contamination.

OPERATIONAL PHASE

6.5.3. Potential significant effect that may arise during operation of the Project are considered insignificant.

6.5.4. Inspection and maintenance activities, including tree trimming to maintain cable sway space and cable inspections at joint bays, will introduce additional vehicle movements but these are not considered substantial enough to cause a notable impact of significant effect to watercourses, aquifers or flood risk receptors in the Study Area. This potential impact is therefore scoped out.

6.5.5. The installation of underground cables and the relatively minimal below ground extent and foundation required for the installation of H-poles and angle poles are expected to pose negligible impact to groundwater levels and flows. This potential impact is therefore scoped out.

6.5.6. The existing ground levels for below ground structures will be reinstated to pre-construction levels; therefore, no impacts expected during operation.

DECOMISSIONING PHASE

6.5.7. For the purposes of this Scoping Report, the potential impacts that may arise during the decommissioning phase are assumed to be similar to those identified for pollution risk and flood risk the construction phase but to a less extent as some infrastructure will be left in-situ.

6.5.8. Underground cables, including those that cross watercourses, will be left in-situ therefore no impacts to watercourses associated with the removal of watercourse crossings would be expected. This potential impact is therefore scoped out.

6.6 RECOMMENDATIONS AND MITIGATIONS

6.6.1. **Table 6-5** below provides a summary of elements that are proposed to be scoped in for further assessment. This is based on the information regarding the construction, operation and decommissioning that was made available at the time of writing and is subject to change as the scheme develops.

Table 6-5 - Scheme elements scoped in or out for further assessment

Scheme element	Phase	Scoped In/Out	Rationale
Pollution risk to surface water features and WFD waterbodies	Construction Decommissioning	In	There is the potential for increased pollution risk along the alignment of the Project, especially at the Nant Sychbant watercourse crossing for the underground cabling.
	Operation	Out	Risks limited to those associated with routine maintenance activities. No significant effects expected.
Impact to watercourses crossed by the Project	Construction	In	Watercourse crossings have the potential to effect quality, flow dynamics and hydraulic capacity, especially at the Nant Sychbant watercourse crossing for the underground cabling.
	Decommissioning Operation	Out	Watercourses crossings to be left in situ. No significant effects expected.
Pollution risk to groundwater resources and WFD waterbodies	Construction Decommissioning	In	There is the potential for increased pollution risk along the alignment of the Project to groundwater resources including abstractions.
	Operation	Out	Risks limited to those associated with routine maintenance activities. No significant effects expected.
Impact to groundwater levels and flows	Construction	In	The UGC section of the Project passes over/adjacent to a Secondary A aquifer. Excavations for below ground cables

			and structures may require dewatering during the construction phase that could pose localised impact to groundwater levels and flows, in turn potentially posing risk to groundwater abstractions and baseflows.
	Decommissioning Operation	Out	Extend and depth of below ground cables and structures not considered significant to groundwater levels and flows. Below ground cables to be left in situ. No significant effects expected during decommissioning.
Flood risk to third parties, existing infrastructure, the Project and receptors such as construction personnel	Construction Decommissioning	In	Details regarding construction plants, laydown areas and specific activities have not been provided at this stage. However, due to the space requirements for the construction and decommissioning phases, there is the possibility that additional hardstanding areas will be required. This could lead to loss of fluvial floodplain storage, interruption of surface water flow paths, or additional surface water flow paths being generated, which could increase the flood risk to people, property and infrastructure in the vicinity of the Project and to the Project and construction personal.
	Operation	Out	Above ground elements of the Project are not located within areas identified to be at risk of flooding, and are not predicted to increase flood risk elsewhere. Existing ground levels along below ground elements of the Project will be reinstated as per existing. The Project is also compatible with inundation. No impacts during operation are expected.

7 COAL MINING

7.1 INTRODUCTION

7.1.1. The Coal Mining Risk assessment will consider the potentially significant effects on the local environment that may arise from the construction and operation of the Project.

7.1.2. This chapter of the Scoping Report sets out the information sources used to inform the scope of the assessment. It provides an overview of the baseline conditions relevant to Coal Mining within the vicinity of the scoping boundary; the likely significant effects to be considered within the Coal Mining Risk assessment and measures which can be incorporated into the Project to mitigate any potential significant effects.

7.1.3. This chapter should be read in conjunction with **Chapter 1: Introduction**.

7.2 INFORMATION SOURCES AND STUDY AREA

7.2.1. The information laid out in this chapter is summarised from the following sources:

- British Geological Society (BGS) 1:50 000 Series Geological Map 248 Pontypridd Solid and Drift 1956[55];
- BGS 'GeoIndex' online viewer, accessed on 07 October 2024[56];
- Coal Authority Interactive Map Viewer, accessed 07 October 2024[57]; and
- National Library of Scotland Historical maps, accessed on 07 October 2024[58].

7.2.2. The study area determined for this Coal Mining Risk Assessment area is a buffer zone extending to within 100m of the Site Boundary.

7.3 METHODOLOGY

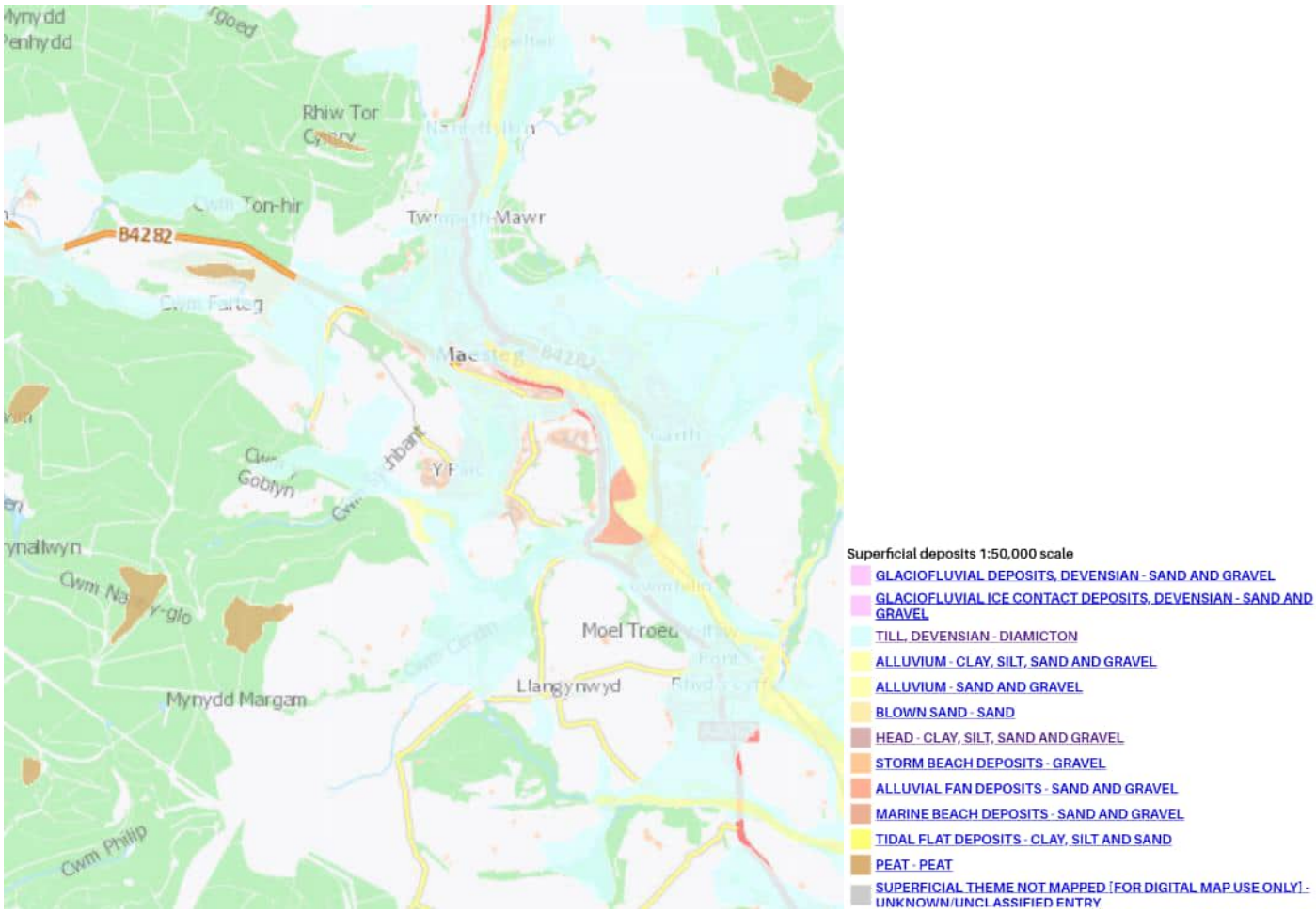
7.3.1. Preliminary coal mining risks are assessed in accordance with the guidelines for a Coal Mining Risk Assessment (CMRA) as recommended by the Coal Authority (noting that this preliminary assessment does not constitute a full CMRA at this stage) and CIRIA C758D Abandoned Mineworkings Manual and British Standards document BS EN 1997-1 (Eurocode 7).

[55] British Geological Survey, (No Date). *Pontypridd Solid and Drift 1956*. Available online at: https://largeimages.bgs.ac.uk/iip/mapsportal.html?id=1001740 [Accessed: 07 October 2024].
[56] British Geological Survey, (2020). *GeoIndex Onshore*. Available online at: https://mapapps2.bgs.ac.uk/geoindex/home.html [Accessed: 07 October 2024].
[57] The Coal Authority, (2023). *The Coal Authority Map Viewer*. Available online at: https://datamine-cauk.hub.arcgis.com/ [Accessed: 07 October 2024].
[58] National Library of Scotland, (No Date). *Six-inch 2nd addition Ireland, Scotland, England and Wales, 1988-1915*. Available online at: https://maps.nls.uk/geo/explore/side-by-side/ [Accessed: 07 October 2024].

7.4 BASELINE ENVIRONMENT

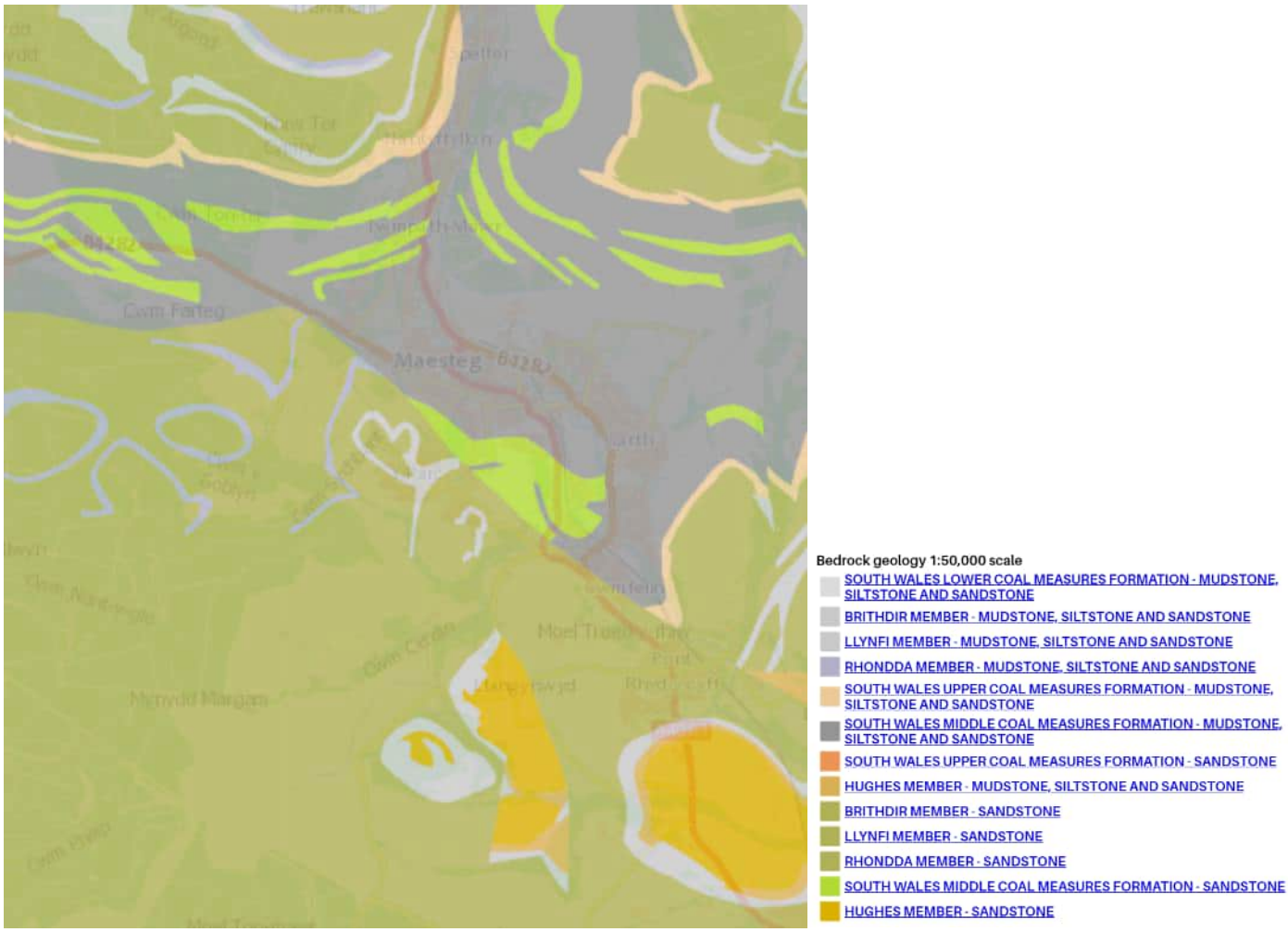
7.4.1. According to BGS mapping, the superficial deposits beneath the Site are recorded to be Glacial Till and Alluvium, with areas of absent superficial deposits as shown in **Figure 7-1** below.

Figure 7-1 - Superficial deposits beneath the Site



7.4.2. The bedrock geology beneath the Site (see **Figure 7-2**) is recorded to cross from the Llynfi Member, into the South Wales Middle Coal measures and the Brithdir Member, all of which are identified as coal bearing strata.

Figure 7-2 - Bedrock geology beneath the Site



7.4.3. According to the Coal Authority interactive viewer, the Site crosses through many zones defined as "*Development High Risk Areas"* associated with a number of coal seams which subcrop beneath the Site.

7.5 PRELIMINARY COAL MINING RISK APPRAISAL

7.5.1. A number of potential risks have been identified in relation to the Project on the Site with regard to historic mining. The risks are typically:

- Presence of coal seam outcrops;
- Recorded past shallow coal mining;
- Areas of probable (unrecorded) shallow coal mining; and
- Mine entries (shafts).

7.5.2. These specific risks are explained in more detail below. In this context, the term 'shallow' means within 30m of rockhead, consistent with Coal Authority definitions.

COAL SEAM OUTCROPS

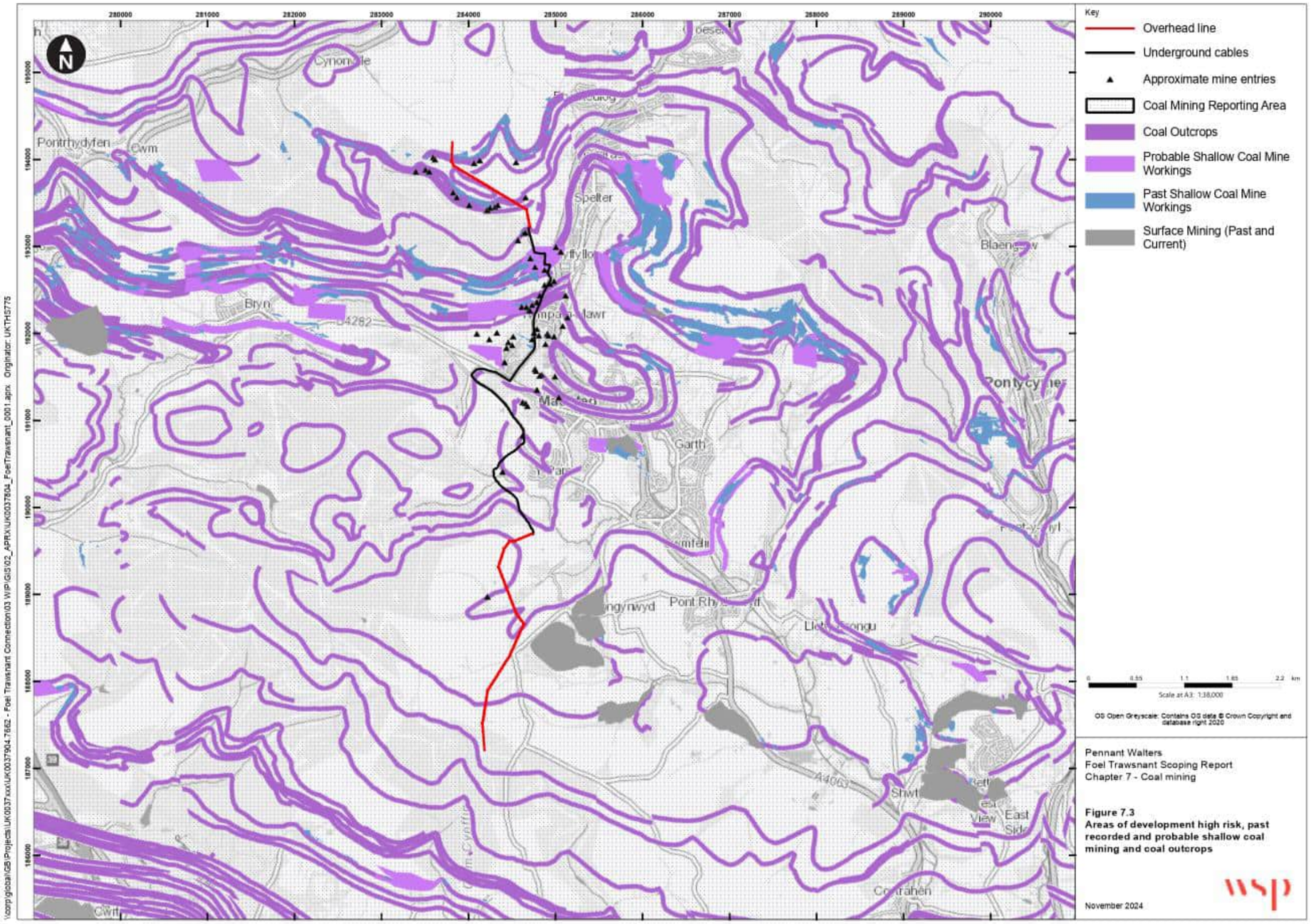
7.5.3. Both the BGS and the Coal Authority identify a number of coal seams outcropping or subcropping (i.e. at rock head below any drift soil cover) beneath the Site, indicating that these coal seams will occur at a shallow depth beneath parts of the Project area. These seams are indicated in **Appendix C**.

7.5.4. Each coal seam should be assessed individually in order to identify the potential area at which this many occur at shallow depth and to determine if shallow mining could have occurred within the seam.

PAST RECORDED SHALLOW COAL MINING

7.5.5. There are a several isolated areas of identified past shallow mining (<30m of rock head) within the Site that may pose a risk to the Project (see **Figure 7-3**)

Figure 7-3 - Areas of development high risk, past recorded and probable shallow coal mining and coal outcrops



7.5.6. The depth and thickness of these past shallow workings beneath the Site should be assessed to determine the potential risk to the Project.

PROBABLE SHALLOW MINING

7.5.7. There are a several isolated areas of probable shallow mining (<30m of rock head) within the Site that may pose a risk to the Project. These are areas where shallow coal seams of workable thickness are expected but where there are no records of past mining having taken place. As records of mining are incomplete, it is possible that these areas are affected by unrecorded shallow mineworking's.

7.5.8. The likely depth and thickness of probable shallow workings beneath the Site should be assessed to determine the potential risk to the Project.

MINE ENTRIES

7.5.9. There are a large number of mine entries identified within 100m of the Site Boundary (>15) that are a potential hazard to the Project. The risks associated with mine shafts are assessed by considering the potential Zone of Influence (ZoI), the zone where ground subsidence may reasonably be expected to occur in the event of a shaft failure, collapse or settlement of any infill. This zone has a radius defined as:

$$R = \frac{shaft\ diameter}{2} + departure\ distance + depth\ to\ rockhead$$

7.5.10. Considering the large number of mine entries close to the Site, a 'worst-case' zone of influence has been calculated for all the mine entries using the largest shaft diameter (3m) and departure distance (10m) and the largest depth to rockhead (10m), to give a ZoI of 21.5m.

7.5.11. The locations and ZoI of these mine entries are shown on in **Appendix B**.

7.6 RECOMMENDATIONS AND MITIGATIONS

7.6.1. It is recommended that a Coal Mining Risk Assessment to be undertaken to assess any and all risks related to historic coal mining in the area of the Project and provide further recommendations to mitigate any specific risks found within the Site area.

7.6.1. For underground cable sections, shallow recorded or unrecorded mine workings, if present would not ordinarily present a significant constraint to construction of the Project.

7.6.2. OHL support structures may be affected by ground instability if constructed in areas of recorded or unrecorded shallow mine workings, due to upwards migration of old mining voids. Intrusive ground investigation would be required in these high-risk areas to identify the potential presence and depth of such workings to determine the level of risk to the structures and if any mitigation such as grout stabilisation treatment is warranted.

7.6.3. Where coal seams are expected to outcrop or subcrop at a depth where the cable installation or OHL support structures could disturb coal, then a permit would be required from the Coal Authority for those areas.

7.6.4. The Coal Authority do not ordinarily permit construction over or within the ZoI of any mine entry and as such the buried cable route and OHL support structures locations should be amended to avoid these areas where possible. If this cannot be accommodated then special agreement would be required from the Coal Authority, which may require investigation works to locate and treat affected mine entries and/or additional support measures to the cable route or support structures.

8 ENVIRONMENTAL ASPECTS SCOPED OUT

8.1 INTRODUCTION

8.1.1. This chapter discusses the environmental disciplines which will be scoped out of further assessment, and therefore will not be included in the ES. Reasoning for scoping out assessments is provided in the appropriate sections.

8.2 NOISE AND VIBRATION

INTRODUCTION

8.2.1. The Noise and Vibration assessment will consider the potentially significant effects on the local environment that may arise from the construction and operation of the Project.

8.2.2. This section should be read in conjunction with **Chapter 1: Introduction**.

Information sources and study area

8.2.3. The location of the Project and the context of the construction Noise and Vibration has been considered using open-source mapping and Google Earth.

8.2.4. Considering the scope and scale of the Project, the proposed construction noise study area will be 300m, and the proposed vibration study area will be 100m.

Methodology

8.2.5. Construction noise will be assessed within the Construction Environmental Management Plan (CEMP) in accordance with BS 5228-1 :2009 +A1:2014 '*Code of practice for noise and vibration control on construction and open sites Part 1 noise*'.

8.2.6. Activity sound levels will be prepared for potentially noisy elements of the construction. These levels will be used to predict construction noise at sensitive receptors within the study area.

8.2.7. Significance of the construction noise will be assessed using threshold values reported within Table E.1 of BS5228-1 where the activity may impact the receptors for a month or more, or Table E.2, where activity may affect the receptors for greater than ten consecutive days and less than a month in any rolling six-month period.

8.2.8. If receptors are affected by construction noise over a shorter duration, than stated in the paragraph above, noise will be controlled through application of best practice and embedded mitigation.

8.2.9. Construction vibration will be assessed qualitatively within the CEMP in accordance with BS 5228-2 :2009 +A1:2014 *Code of practice for noise and vibration control on construction and open sites Part 2 vibration*.

BASELINE NOISE AND VIBRATION

8.2.10. The area around the Project is predominantly rural. As such, the lowest category of baseline noise (Category A) from BS 5228-1 Annex E is assumed. This will ensure that receptors are afforded the highest level of protection from construction noise.

8.2.11. As the lowest baseline noise category is assumed, no baseline noise monitoring is proposed.

SUMMARY OF POTENTIAL EFFECTS NOT REQUIRING CONSIDERATION

Underground Cables

8.2.12. Underground cables can be laid directly into a trench or placed within ducts.

8.2.13. The method for creating underground cables will be primarily open cut trenching.

8.2.14. In some locations cables will be installed in ducts with joint bays as opposed to placing directly into open cut trench. Please refer to **Chapter 1: Introduction** for more detailed information on the proposed methods.

8.2.15. It is anticipated the highway works will take between two to three weeks to complete. The works have been assumed to take place between 07:00 to 19:00 hours on weekdays and 07:00 to 13:00 on Saturdays.

Overhead Line Work

8.2.16. Overhead lines (OHL) will be carried on wooden double H-poles.

8.2.17. H-poles are unlikely to require foundations, but will likely require an impulsive method, similar to piling, to erect. Where undertaken near to sensitive receptors these works may give rise to potentially adverse effects for a maximum period of a day, this would be **not significant.**

8.2.18. The construction compounds for the consented wind farm development will be used for the construction of the OHL. Laydown areas may be required along the route of the OHL. Such laydown areas will be unlikely to give rise to significant noise levels during the construction phase. However, noise will be controlled through the application of best practice measures through the CEMP.

Construction Noise and Vibration Summary

8.2.19. The exact nature of works is not yet known, but the majority of work associated with the project will be trenching, which is a relatively low impact activity with respect to noise and vibration generation. Impulsive methods will be used for H-pole erection which may have the potential to give rise to adverse noise or vibration impacts for very short periods in the order of a single day.

8.2.20. In order to characterise the noise and vibration accurately, it is proposed that assessment will be undertaken as part of the Noise and Vibration Management Plan (NVMP) within CEMP once the project design is fully developed.

8.2.21. The CEMP will set out standard best practice measures to manage the construction phase of the development. The NVMP will quantify the construction noise with respect to thresholds of significance reported within Annex E of BS 5228-1:2009 +A1:2014. Construction vibration will be assessed qualitatively within the NVMP.

8.2.22. The NVMP will identify the location and nature of any mitigation required to minimise adverse effects at sensitive receptors and completely remove the risk of significant adverse effects.

8.2.23. The NVMP will be submitted to the local planning authority for review and approval.

8.2.24. As the assessment of noise and vibration will be undertaken subsequent to the planning application being submitted, and that the NVMP within a conditioned CEMP will detail mitigation to avoid

adverse impacts, construction noise and vibration are proposed to be scoped out of assessment for the EIA.

Operational Noise and Vibration

8.2.25. Operational noise from OHLs will be negligible due to low voltage. Please note that National Grid guidance[59] states that "*Noise criteria apply to 275 and 400kV OHL's. Historically 132kV OHL's have been described as practically quiet*".

8.2.26. The proposed Foel Trawsnant 33kV OHL is therefore below the threshold for sound generation from OHL and OHL generates no vibration. Underground cables generate no operational sound or vibration. Operational noise and vibration are therefore scoped out of assessment for EIA.

Decommissioning Noise and Vibration

8.2.27. Noise and vibration generated by decommissioning of Project elements will be of similar magnitude or less than the construction.

8.2.28. As such, noise and vibration from decommissioning activity are scoped out of assessment for EIA.

CONCLUSION

8.2.29. Construction noise (including construction traffic noise) is scoped out of assessment on the basis that the level of information required to assess is not currently available, and that the potential for significant adverse effects is low and will be controlled through the application of the CEMP.

8.2.30. Construction vibration is scoped out of assessment on the basis that the level of information required to assess is not currently available, and that the potential for significant adverse effects is negligible and will be controlled through the application of the CEMP.

8.2.31. Operational noise and vibration are both scoped out of the assessment as there are no mechanisms inherent in the project that will give rise to adverse effects for either noise or vibration in the operational phase.

8.2.32. It is recommended that a requirement for quantitative assessment of construction noise and qualitative assessment of construction vibration within the Construction Environmental Management Plan is conditioned at planning.

8.2.33. Construction noise should be controlled to levels not exceeding the threshold of significance in Annex E of British Standard whereby levels in excess of 65 decibels (dB) should not be experienced

[59] National Grid, (2022). *Yorkshire Green Energy Enablement (GREEN) Project Document 5.3.14G ES Chapter 14 Appendix 14G - National Grid Technical Report TR(E)564 (2021).* Available online at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020024/EN020024-000177-5.3.14G%20Appendix%2014G%20National%20Grid%20Technical%20Report%20TR(E)564%20(2021).pdf [Accessed: 03/10/2024].

for a period of more than a month and levels in excess of 75dB not experienced for 10 days or more as assessed at the façade of a sensitive receptor.

8.2.34. Vibration levels of Peak Particle Velocity 1 millimetres per second (mm/s) should not be exceeded for longer than 1 hour for more than 5 days at any receptor.

8.2.35. The NVMP shall determine the mitigation required to ensure that these criteria are met as well as providing general good practice measure to be adopted by the Project.

8.2.36. Any mitigation measures will be agreed with the local authority Environmental Health Officers (EHOs).

8.3 SOCIO-ECONOMICS

INTRODUCTION

8.3.1. The Socio-economic assessment will consider the potentially significant effects on the local environment that may arise from the construction and operation of the Project.

8.3.2. This section should be read in conjunction with **Chapter 1: Introduction**.

BASELINE SOCIO-ECONOMICS

8.3.3. The ‘local’ Study Area for the Socio-economic assessment comprises the administrative boundaries of Bridgend CBC and Neath Port Talbot CBC. Wales comprises the 'regional level' study area for the assessment of socio-economics impacts.

8.3.4. Socio-economic impacts which could occur to nearby settlements may include:

- Supply chain: procurement of goods and services, such as security, catering, hotel facilities or maintenance;
- Employment: contractors or manufacturers would be required and, if possible, procurement may be local; and
- Expenditure: new spending power generated from employees directly and indirectly associated with the Project. An amount of the earning capacity of these individuals would be expected to be spent on items such as shopping, accommodation and leisure.

8.3.5. The closest settlements to the OHL and UGC are:

- Nant-y-ffyllon approximately 0.10km east of the nearest part of the UGC;
- Maesteg approximately 0.40km east of the nearest part of the UGC;
- Garth approximately 1.82km east of the nearest part of the UGC;
- Llangynwyd approximately 1.85km east of the nearest part of the southern section of the OHL; and
- Bryn approximately 2.55km west of the nearest part of the UGC.

8.3.6. There are also isolated residential dwellings and agricultural buildings within the Study Area.

8.3.7. The 2021 Office for National Statistics (ONS) NOMIS data[60] estimated the Bridgend CBC population to be 145,700 and Neath Port Talbot CBC to be 141,900. The estimated population for Wales in 2021 was 3,105,600. The estimated working age population (residents aged 16-64 years) as a percentage of the total resident population was 68% for Bridgend CBC and 75% for Neath Port Talbot CBC. This is slightly lower than the 75.6% estimate for Wales and 78.4% estimate for Great Britain.

8.3.8. **Table 8.1** shows the proportion of total employees working in each industry sector in 2022 (the most recently published data at the time of writing). Across the two local authority districts, a large proportion of employee jobs were in Sector G (Wholesale and retail trade; repair of motor vehicles and motorcycles), Sector C (Manufacturing) and Sector O (Public administration and defence; compulsory social security).

Table 8-1 - Overview of employee jobs by industry sector in 2022 (%)

Industry sector	Bridgend CBC	Neath Port Talbot CBC	Wales
B : Mining and quarrying	0.0	0.6	0.2
C : Manufacturing	12.3	18.0	10.8
D : Electricity, gas, steam and air conditioning supply	0.1	0.3	0.5
E : Water supply; sewerage, waste management and remediation activities	0.7	1.2	1.0
F : Construction	5.3	5.0	4.9
G : Wholesale and retail trade; repair of motor vehicles and motorcycles	14.0	12.0	13.2
H : Transportation and storage	6.1	9.0	4.2

[60] Office for National Statistics, (2024). *NOMIS*. Available online at: https://www.nomisweb.co.uk/ [Accessed: 29th October 2024].

Industry sector	Bridgend CBC	Neath Port Talbot CBC	Wales
I : Accommodation and food service activities	8.8	6.0	8.8
J : Information and communication	3.5	1.2	2.4
K : Financial and insurance activities	0.9	0.7	3.0
L : Real estate activities	1.2	1.6	1.5
M : Professional, scientific and technical activities	3.9	2.5	5.2
N : Administrative and support service activities	7.0	6.0	6.8
O : Public administration and defence; compulsory social security	15.8	10.0	8.2
P : Education	8.8	9.0	9.1
Q : Human health and social work activities	8.8	12.0	15.4
R : Arts, entertainment and recreation	2.2	2.5	2.7
S : Other service activities	1.6	1.4	2.0

SUMMARY OF POTENTIAL EFFECTS NOT REQUIRING CONSIDERATION

8.3.9. Due to the low percentage of the local population who work within construction (5.3% in Bridgend CBC and 5.0% in Neath Port Talbot), is unlikely that there will be direct beneficial impacts on the local economy during the construction of the Project. Although a higher percentage of working age residents work within the manufacturing sector (12.3% in Bridgend CBC and 18.0% in North Port Talbot), the job generation would not be significant in the context of the labour market. There would be minimal job creation in the local area during construction due to the scope of the Project (see **Chapter 1**); during operation, job creation is expected to be negligible to none. Therefore, the Project is unlikely to have either a positive or negative significant effect on the local community.

Construction workers spending part of their income in the local area is also unlikely to produce significant effects due to the limited amenities that the nearby settlements provide.

CONCLUSION

8.3.10. Due to the reasons outlined in **Section 8.3.10**, Socio-Economics has been scoped out of the EIA and will not be considered further as part of the assessment.

8.4 MAJOR ACCIDENTS AND DISASTERS

INTRODUCTION

8.4.1. The Major Accidents and Disasters assessment will consider the potentially significant effects on the local environment that may arise from the construction and operation of the Project.

8.4.2. This section should be read in conjunction with **Chapter 1: Introduction**.

BASELINE MAJOR ACCIDENTS AND DISASTERS

8.4.3. The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 states that an EIA must identify "*the expected effects deriving from the vulnerability of the proposed development to risks of major accidents and disasters that are relevant to that development*"

The scope for the EIA to consider major accidents and disasters has been initially considered in **Table 8-2**. Major accidents or disasters have been scoped in where they represent a risk to the Project, either from the proposed location or from the Project itself. A high risk is considered to be where there is reasonable likelihood of the accident or disaster occurring, or where the effect of the accident or disaster would lead to the requirement for mitigation which is beyond the usual scope of construction or operational activities. Where an accident or disaster has been scoped in, the ES chapter(s) identified will consider the matter in more detail. This further detail may show that no further assessment is needed, or it may lead onto an appropriate level of assessment and/or identification of appropriate mitigation.

Table 8-2 - Major Accidents and Disasters

Major Accidents or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	Environmental Statement Chapter
Biological hazards: epidemics	Very low	Very low	Out	The probability of epidemics which would affect the construction or operation of the Project is considered to be very low.	N/A
Biological hazards: animal and insect infestation.	Very low	Very low	Out	The probability of animal and insect infestations which would affect the construction or operation of the Project is considered to be very low.	N/A
Earthquakes	No	No	Out	Any earthquakes in the vicinity of the Project would be of a very low magnitude and therefore are not predicated to affect the Project.	N/A
Tsunamis / tidal waves / storm surges	No	No	Out	The general location of the Project and its distance from the coast means there is no risk of these phenomena affecting the Project.	N/A
Volcanic eruptions	No	No	Out	There are no active volcanos in the vicinity of the Project.	N/A

Major Accidents or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	Environmental Statement Chapter
Famine / food insecurity	Negligible	Very low	Out	The probability of famine / food insecurity which would affect the construction or operation of the Project is considered to be negligible.	N/A
Displaced populations	Negligible	Very low	Out	The probability of displaced populations affecting the construction or operation of the Project is considered to be negligible.	N/A
Severe weather: storms	Medium	No	Out	The UGCs would be physically unaffected by the majority of severe weather. The OHLs are supported by pre-cast concrete kicking blocks and would require great force to become loosened. Therefore, the risk to the Project is considered very low.	N/A
Severe weather droughts	Very low	No	Out	The probability of severe drought occurring in the vicinity of the Project is considered to be very low.	N/A
Severe weather: extreme temperatures	Low	Very low	In – severe cold weather could lead to ice build-up on cables.	Ice build-up could lead to increased weight on the OHLs.	Project Description.

Major Accidents or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	Environmental Statement Chapter
Terrorist incidents	No	No	Out	N/A	N/A
Cyber attacks	No	No	Out	N/A	N/A
Disruptive industrial action	No	No	Out	N/A	
Public disorder	No	No	Out	N/A	N/A
Wildfires	No	No	Out	N/A	N/A
Severe space weather	No	No	Out	N/A	N/A
Poor air quality events	No	No	Out	N/A	N/A
Transport accidents	No	Yes	In – abnormal loads and increase in traffic from construction.	Abnormal loads or an increase in traffic could lead to an increased risk of accidents. Road network may be unsuitable for such traffic, further increasing accident risk.	Traffic and Transport.

Major Accidents or Disaster	Risk due to location	Risk due to project	Scoped in/out due to risk	Rationale	Environmental Statement Chapter
Industrial Accidents	No	Yes	In	Manual labour, working at height and use of specialist plant all bring risk of industrial accidents. Relevant UK health and safety legislation will be adhered to; site construction management practices will include, but are not limited to: temporary diversions of public rights of way, relevant signage and fencing of potentially hazardous construction areas where appropriate.	Construction activities are covered by separate H&S legislation and guidelines. Project Description, Water Resources and Flood Risk, and Biodiversity chapters.
Floods	Low	Very Low	In	A high-level flood risk assessment will be undertaken within the ES.	Project Description; Water Resources and Flood Risk
Urban fires	Low	Very low	Out	Only the underground cables section are within urban areas. Due to the scale of the Project, the risk of urban fires affecting is seen as low.	N/A

8.5 LAND QUALITY

INTRODUCTION

8.5.1. The Land Quality assessment will consider the potentially significant effects on land quality receptors, including soil, geology, minerals, and from land contamination, that may arise from the construction, operation and decommissioning of the Project. Potential significant effects and risks associated with Coal Mining are not considered here; please refer to **Chapter 7: Coal Mining.**

8.5.2. This section of the Scoping Report sets out the information sources used to inform the scope of the assessment. It provides an overview of the baseline conditions relevant to Land Quality within the vicinity of the Scoping Boundary; the likely significant effects to be considered within the assessment and measures which can be incorporated into the Project to mitigate any potential significant effects.

8.5.3. This section should be read in conjunction with **Chapter 1: Introduction** and **Chapter 7: Coal Mining**.

Information sources and study area

8.5.4. The location of the Project and the context of the Land Quality assessment has been considered using open-source and Google Earth Pro, in addition to the data sources listed below:

- Bridgend Borough Council Replacement Bridgend Local Development Plan (2018 – 2033) AD7 – Proposals Map (Final Version)[61].
- Welsh Government, DataMap Wales, including:
  - The Peatlands of Wales map[62]
  - Natural Resources Wales, Historical Landfill Sites dataset[63]
- British Geological Survey (BGS) GeoIndex[64]
- Cranfield Soil and Agrifood Institute, LandIS Soilscapes Interactive Map[65].
- Historical mapping available from the National Library of Scotland[66]

[61] Bridgend Borough Council (2022) Replacement Bridgend Local Development Plan (2018-2033) Examination: AD6 – Written Statement Adopted Plan, and, AD7 – Proposals Map (Final Version). [online] Available at: https://www.bridgend.gov.uk/residents/planning-and-building-control/development-planning/replacement-bridgend-local-development-plan-2018-to-2033/submission-and-independent-examination/. Accessed November 2024.
[62] Welsh Government (2022) Peatlands of Wales
[63] Natural Resources Wales (2024) Historic Landfill Sites. Available at: https://datamap.gov.wales/maps/new?layer=inspire-nrw:NRW_Historic_Landfill_Sites#/. [online]. Accessed 6 November 2024.
[64] British Geological Society (2024). Geoindex (Onshore). [online] Available at: https://www.bgs.ac.uk/map-viewers/geoindex-onshore/ [Accessed 28 October 2024].
[65] Cranfield University (2024). Soilscapes. [online] Available at: http://www.landis.org.uk/soilscapes/ [Accessed 28 October 2024].
[66] National Library of Scotland. Map Finder. Available at: https://maps.nls.uk/geo/find/marker/. [online] Accessed 28 October 2024.

8.5.5. Considering the scope and scale of the Project, the proposed Land Quality study area extends 250m beyond the Project boundary.

METHODOLOGY

Land contamination

8.5.6. The Environment Agency's Land Contamination Risk Management (LCRM)[67] provides the technical framework for applying a risk management process when dealing with land affected by contamination. This approach to the assessment of land contamination has been adopted by Natural Resources Wales[68].

8.5.7. LCRM comprises an iterative risk-based approach starting with a Phase 1 Desk Study (also known as a Preliminary Risk Assessment) and followed by a Phase 2 Ground Investigation (including quantitative risk assessment) where considered necessary, to assess the risks to the environment and users of the land posed by contamination that may be present.

8.5.8. The Applicant will have a Phase 1 Desk Study prepared for the Project site to support the planning application. The Phase 1 Desk Study will make recommendations for ground investigation prior to construction, if this is needed due to the desk study identifying potentially significant land contamination risks to human health, the environment, or property (including the built environment). The Phase 1 Desk Study will include a review of current environmental information and historical OS maps to identify potential contamination sources and sensitive receptors and will include figures showing these in relation to the Project boundary and study area.

8.5.9. The CEMP will reference the findings of the Phase 1 Geoenvironmental Desk Study and will include a protocol for responding to any unexpected contamination encountered during ground works for the Project in accordance with LCRM.

Soil, Geology, and Minerals

8.5.10. An approach to assessing and reporting the effects of proposed developments on geology, soils and minerals is set out in the Design Manual for Roads and Bridges, LA 109 - Geology and Soils[69], and this has been used to inform the assessment in this Scoping chapter. As a published approach to

[67] Environment Agency, (2020). Land contamination risk management (LCRM). Updated July 2023. (online) Available at: https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm (Accessed November 2024).
[68] Natural Resources Wales (2025) Advice for developers: Land contamination. [online] Available at: https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/land-contamination/?lang=en. Accessed November 2024.
[69] Highways England (2019). Design Manual for Roads and Bridges LA109 Sustainability & Environment Appraisal LA 109 Geology and soils (Online). Available at: https://www.standardsforhighways.co.uk/dmrb/search/adca4c7d-4037-4907-b633-76eaed30b9c0 (Accessed November 2024).

assessing the effects of highways developments on soil in EIA, it can be adapted for use on other projects.

8.5.11. The Institute of Environmental Management & Assessment (IEMA) Guide: A New Perspective on Land and Soil in Environmental Impact Assessment[70] provides information and guidance on how the practical implications of soil functions, soil biodiversity, soil health, ecosystem services and natural capital should be applied within the overarching framework of climate change, to incorporate them effectively into the EIA process.

8.5.12. The Institute of Civil Engineers (ICE), The Environmental Impact Assessment Handbook - A Practical Guide for Planners, Developers and Communities (3rd Edition)[71] provides an approach to assessing the potentially significant effects of development projects on soil and defines the sensitivity of different soil types to handling during construction projects. The guide notes that soil is a non-renewable resource, and that disturbance should be limited as far as possible, that soil is particularly prone to structural degradation if it is handled when too wet, and that adverse effects can be mitigated by following best practice guidance, such as the Defra 2009 Code of Practice for the Sustainable Use of Soils on Construction Sites[72].

8.5.13. The above referenced guidance documents have informed the assessment of the potential for the Project to result in significant effects on soil, geology or mineral receptors.

BASELINE

Soil (and agricultural land)

8.5.14. The LandIS Soilscapes map shows soil type Soilscape 16: very acid loamy upland soils with a wet peaty surface at the north and south ends of the Project boundary. In both areas where these soils are shown, the cable is proposed to be constructed as overhead line.

8.5.15. The remainder of the Project (overhead line and underground cable routes) runs through Soilscape 13: freely draining acid loamy soils over rock, or Soilscape 19: slowly permeable wet very acid upland soils with a wet peaty surface. Most areas shown with soil type Soilscape 19, potential peaty soils, occur on the buried section of the cable route in areas which have been previously developed in the town of Maesteg, where the cable route follows an existing road, meaning that the naturally occurring soils are likely to have been removed or damaged.

8.5.16. The Peatlands of Wales map shows land where the potential for peat has been identified by the Welsh Government, with peat defined as having a thickness of more than 40cm of organic material

[70] Institute of Environmental Management & Assessment (IEMA) (2022) IEMA Guide: A New Perspective on Land and Soil in Environmental Impact Assessment. IEMA; March, UK.
[71] Institute of Civil Engineers (ICE) (2019). The Environmental Impact Assessment Handbook - A Practical Guide for Planners, Developers and Communities (3rd Edition). ICE Publishing; London, UK.
[72] Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. [online] Available at: https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites. Accessed November 2024.

within the upper 80cm of a soil profile. No peat is shown within the northern overhead line in the Project boundary or associated study area. In the south of the underground section, north of Sychbant Farm, two areas of peat are shown, one of which slightly overlaps the Project boundary (at 284304, 190373) and the other is within the study area but ~150m east of the Project boundary (at 284817, 190737). The area within the Project boundary occurs close to the existing track and it is likely that at the existing track any peat present will have been removed or damaged during the track construction. No peat is shown within the southern overhead line in the Project boundary or associated study area.

8.5.17. The Predictive Agricultural Land Classification (ALC) Map 2 shows that the ALC grades of land within the Project boundary and study area range from Grade 4 to Grade 5, and there are also areas classed as urban land, applicable to the underground cable section as it runs through the town of Maesteg, and non-agricultural land (e.g., as applied to areas of woodland). The existing tracks and highway would be classed as urban land however the ALC mapping is not a sufficient scale to show this detail. The ALC grading system, set out in MAFF (1988) Revised Guidelines & Criteria for Grading the Quality of Agricultural Land, provides a method used in England and Wales for assigning ALC grades 1, 2, 3a, 3b, 4 or 5 to agricultural land, with Grade 1 being the best land and Grade 5 being very poor-quality land, typically limited to use for permanent pasture or rough grazing. Best and most versatile (BMV) agricultural land is defined in Planning Policy Wales as Grades 1, 2 and 3a. This is excellent to good quality land which is able to best deliver food and non-food crops.

8.5.18. Soil sensitivity is also considered in relation to ecological designations. There are no internationally or nationally designated ecological sites within the Project boundary or the study area. There are three Wildlife sites/Sites of Importance for Nature Conservation (SINCs) within the Project Boundary, details of these are provided in **Chapter 4: Ecology**.

Geology

8.5.19. Information on DataMap Wales shows no Regionally Important Geodiversity Sites (RIGS), Geological Conservation Review (GCR) Sites, or geological Sites of Special Scientific Interest (SSSI) within the Project boundary or the study area.

8.5.20. Geological baseline information including descriptions of the superficial and bedrock geology within the Project boundary, and which also applies to the Land Quality study area, is presented in **Chapter 7: Coal Mining** and is not repeated in this section.

Minerals

8.5.21. The overhead line cable corridor from Foel Trawsnant southeast towards Nant-y-ffyllon is entirely within a Mineral Safeguarding Zone (Category 1 – Sandstone and Igneous Rock – ENT 12) according to the Bridgend Borough Council Local Development Plan, AD7 – Proposals Map. The proposed cable corridor then runs underground for approximately 370m to Kings Terrace, Nant-y-ffyllon, and this is also within the Mineral Safeguarding Zone. Aerial photography shows an existing track in the cable corridor at this underground section. The underground cable corridor then follows existing roads southwards to the B4282 where the corridor runs briefly west before turning southwards on an existing single-track road, then a private access track towards Sychbant Farm. From the B4282 the cable corridor (still underground at this point) is within a Mineral Safeguarding Zone (Category 1 – Sandstone and Igneous Rock – ENT 12). Along the track towards Sychbant

Farm the cable corridor runs through a second Mineral Safeguarding Zone (Category 2 – Sand and Gravel – ENT 12). Where the cable route continues as an overhead line south of Sychbant Farm it is also within a Mineral Safeguarding Zone (Category 1 – Sandstone and Igneous Rock – ENT 12).

8.5.22. A large proportion of Bridgend Borough is noted to fall within Mineral Safeguarding Zones for Category 1 – Sandstone and Igneous Rock – ENT 12.

Land Contamination

8.5.23. The proposed overhead line sections of the Project run mainly through agricultural land. The northern section of proposed overhead line and the proposed underground cable route, run through areas where historical mineral extraction (quarrying) and coal mining have taken place, including some shallow coal workings. Coal mining is detailed in **Chapter 7: Coal mining**. There is potential for localised contamination to be present in the form of made ground, and areas of historical waste disposal associated with former mineral extraction, including potential infilling of voids.

8.5.24. No historical landfills are shown within the Project boundary or study area, according to information on DataMap Wales[73].

8.5.25. Agricultural activities can result in land contamination (e.g., building demolition, waste disposal, leaks and spills from tanks or farm vehicles), although most agricultural areas within the Project boundary or Study Area would be expected to be free of significant contamination arising from agricultural land use.

8.5.26. Parts of the overhead line route and the entirety of the underground cable route both run along existing roads and tracks and there is potential for contaminants to be present in made ground where imported fill materials have been used for road construction.

8.5.27. A full review of potential sources of contamination will be undertaken for the Project. This will take the form of a Phase 1 Desk Study (aka Preliminary Risk Assessment) to support the planning application and inform any Phase 2 Ground Investigation (including quantitative risk assessment) if this is necessary, to assess risks to the environment, property or users of the land posed by contamination that may be present. This could be combined with investigations to obtain geotechnical information for detailed design, and potentially investigations to obtain information to support further coal mining risk assessment (see recommendations and mitigations in **Chapter 7: Coal Mining**).

[73] Natural Resources Wales (2024) Historic Landfill Sites. Available at: https://datamap.gov.wales/maps/new?layer=inspire-nrw:NRW_Historic_Landfill_Sites#/. [online]. Accessed 6 November 2024.

SUMMARY OF POTENTIAL EFFECTS NOT REQUIRING CONSIDERATION

Soil (including agricultural land)

8.5.28. The largest potential for effects on soils and agricultural land would occur during construction, since this is when most ground disturbance would occur. Very minimal ground disturbance would occur during operation, and during decommissioning it is anticipated that underground infrastructure would be left *in situ*.

8.5.29. Due to the potential for localised peat identified in the baseline review in parts of the overhead line sections of the Project, the Applicant will commission some targeted soil surveys to enable suitable soil handling measures to be included in the CEMP. It is likely that through micro-siting of poles, the overhead line sections of the Project can be located away from any peat. However, in the unlikely scenario that peat is found that meets the criteria described in **paragraph 8.5.16** and cannot be avoided, a Peat Management Plan will be produced to support the CEMP.

8.5.30. Potential effects on soils, including peat, are scoped out based on there being limited disturbance to soils associated with construction of the overhead line sections. Where the cable route runs below ground it will be constructed in areas that have been subject to previous development for tracks or road, and consequently the naturally occurring soils and/ or peat deposits are likely to have been removed or damaged. Targeted soil surveys should be undertaken in areas where peat could potentially be disturbed by the Project for the overhead lines, to provide information to support the avoidance of peat. This will also inform the specification of suitable soil management measures in the CEMP, and to inform a Peat Management Plan in the event that peat cannot be avoided. Where possible, micrositing of poles will be undertaken to avoid peat. The underground cable route construction work will be confined to the highways boundary for the length of underground cable. However, where this is not possible, soil in roadside verges or at temporary compound sites may need to be temporarily excavated or otherwise disturbed (e.g., by vehicle movements) during the construction phase. The Soils Management Plan forming part of the CEMP will include measures to protect soils and enable excavated soils to be restored in a way that allows the soil to return to its the baseline condition (or improved condition, such as to support biodiversity net gain). With these measures in place, the Project is unlikely to result in significant effects on soils or peat.

8.5.31. The ALC Map 2 shows no BMV land within the Project boundary or study area, significant effects on agricultural land are therefore unlikely and an Agricultural Land Classification (ALC) survey is therefore not proposed for the Project.

8.5.32. Soil management measures will be set out the CEMP to minimise damage to soils during construction (e.g., due to plant and vehicles causing soil compaction, or during excavation, temporary storage, or reinstatement of soils) and to enable any natural soils disturbed during the construction phase to be reinstated in a way that allows the land to return to its baseline condition.

8.5.33. As effects on soils and agricultural land during construction are scoped out, effects on soils and agricultural land during operation and decommissioning are also scoped out, based on the rationale in **paragraph 8.5.28**.

Geology

8.5.34. Effects on geological receptors including geological conservation sites are scoped out on the basis that there are no sites with geological conservation designations within the Project boundary or in the study area.

Minerals

8.5.35. Potential effects on mineral resources by sterilisation due to the Proposed Development are scoped out for aggregates (hard rock, sand and gravel). The cable corridor runs through safeguarded mineral resources; however, it does not encounter any existing quarries, or land where quarrying proposals have been identified (confirmed by a search of the Bridgend Borough Council Planning Register for quarry related proposals). Most of the route follows existing roads or tracks except for approximately 2.6km of overhead line in the south of the cable corridor. The Mineral Safeguarding Area for Category 1 – Sandstone and Igneous Rock – ENT 12 extends across most of the Bridgend Borough and considering the scale of the Project would therefore be unlikely to result in a significant effect relating to the safeguarding of mineral resources for future extraction.

Land contamination

8.5.36. The largest potential for effects on land contamination receptors would occur during construction, since this is when most ground disturbance would occur. Very minimal ground disturbance would occur during operation, and during decommissioning it is anticipated that underground infrastructure would be left in situ.

8.5.37. Risks to human health, environmental receptors, and property, including the built environment, will be managed through compliance with the risk-based approach set out in LCRM, as explained in **paragraphs 8.5.6** to **8.5.8**, and in accordance with measures in the CEMP, as explained in **paragraph 8.5.9**. On this basis there should be no potential for significant effects on land contamination receptors due to the Project. The findings of the Phase 1 Desk Study will be used to develop the CEMP for the Project.

Risks to Construction Workers

8.5.38. Construction work must comply with the law and construction workers will therefore be subject to The Construction (Design and Management) (CDM) Regulations 2015[74] and safe working practices as part of normal construction health and safety management under the Health and Safety at Work Act (1974)[75] and regulations made under the Act. These legal obligations include the requirement for risk assessments and method statements for all construction related activities and the use of appropriate working methods, training, and Personal Protective Equipment (PPE).

[74] UK Government (2015). The Construction (Design and Management) Regulations 2015 (online) Available at: https://www.legislation.gov.uk/uksi/2015/51/contents/made. [online] Accessed November 2024.
[75] UK Government (1974). Health and Safety at Work Act 1974 (online) Available at: https://www.legislation.gov.uk/ukpga/1974/37/contents. [online] Accessed November 2024.

8.5.39. In addition to these legal obligations, good and standard construction practices, which would be undertaken to meet existing legislative requirements under CDM and the Health and Safety at Work Act, would reduce ground conditions effects. These good and standard practices include measures to prevent pollution incidents that could result in harm to construction workers, the development of spill response procedures and ensuring storage of fuels for construction in suitable locations and in suitably bunded tanks.

CONCLUSION

8.5.40. Taking into account the need for compliance with legal requirements (CDM, the Health and Safety at Work Act and the Waste Regulations), the commitment to implementation of good and standard construction practices, and the commitment to development of an unexpected contamination protocol, coupled with the commitment to complete a Phase 1 Desk Study to support the planning application, which will then inform further investigation if this is needed, it is predicted that there will be no significant adverse effects on land contamination receptors as a result of developing the Project.

8.6 AIR QUALITY

INTRODUCTION

8.6.1. The following chapter sets out the justification for scoping out an Air Quality assessment for the Foel Trawsnant Connection.

BASELINE AIR QUALITY

8.6.2. The Project is not within an Air Quality Management Area (AQMA) and the latest monitoring undertaken by Bridgend Council demonstrates that air quality near the Site is within the UKs air quality standards for nitrogen dioxide (NO_2). The nearest AQMA to the Project is the Neath Port Talbot AQMA at Margam, designated for Particulate Matter and located over 5km to the west of the Site.

8.6.3. Passive NO_2 diffusion tube monitoring is undertaken by Bridgend Council and provides an indication of the baseline air quality conditions in the area.

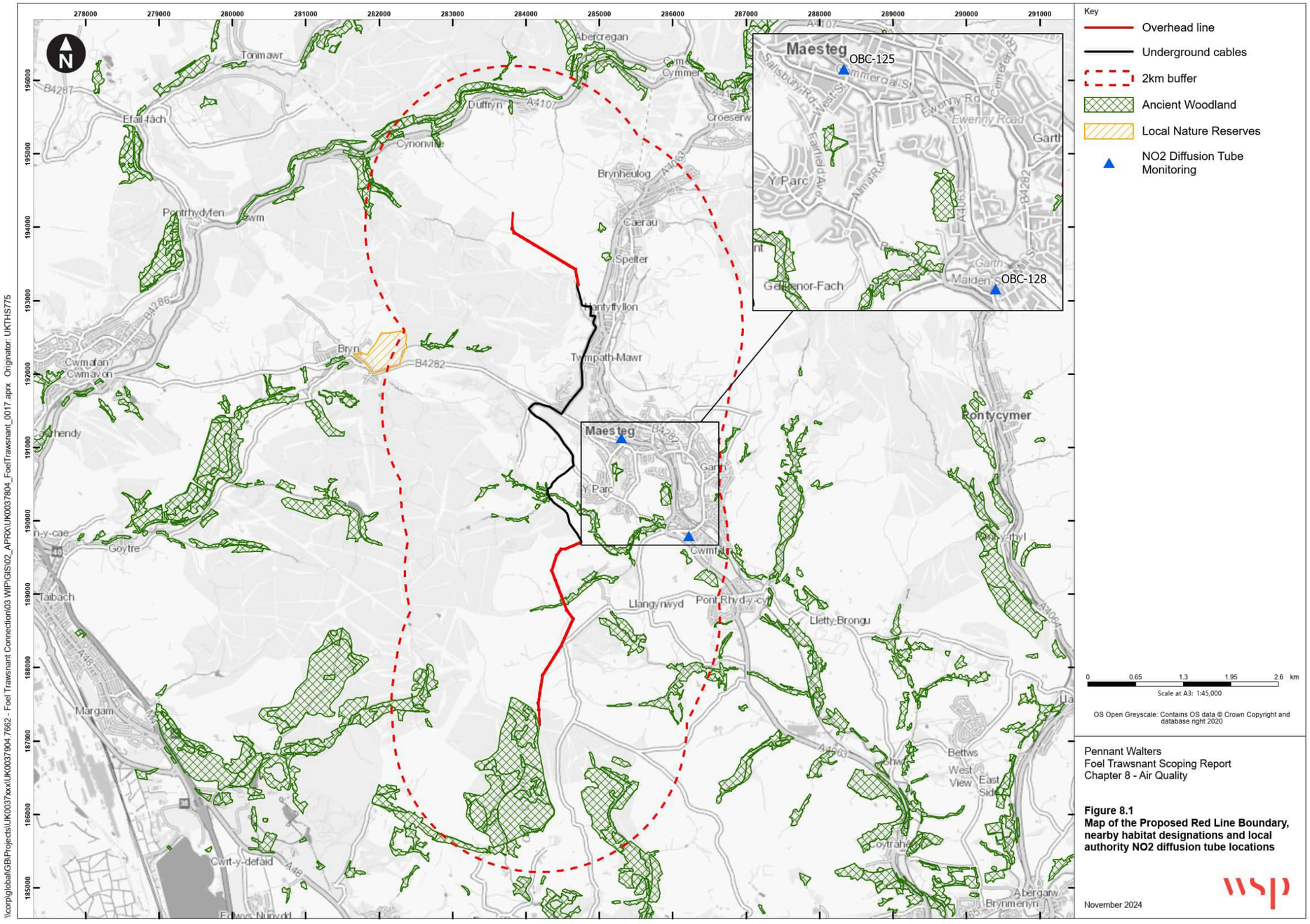
8.6.4. There are two local authority monitoring locations in Maesteg (OBC-125 and OBC-128). Both of these locations monitor concentrations of NO_2 well below the air quality objective (40 microgrammes per cubic metre (µg/m^3)). A summary of their recent monitoring results can be found in **Table 8-3** below.

Table 8-3 - NO_2 Monitoring Results as presented in the Bridgend Local Authority Annual Status Report 2023

Monitor ID	X	Y	Approximate Distance to Project (m)	Monitored NO_2 Concentrations (µg/m^3)			
				2019	2020	2021	2022
OBC-125	285299	191136	670	18.8	19.3	9.8	14.5
OBC-128	286218	189805	1500	0	11	16.8	8.8

8.6.5. There are no designated sites for nature conservation at international level within 2km of the Project (Ramsar, Special Protection Areas, Special Areas of Conservation). There is one Local Nature Reserve (LNR) within 2km of the Project and a number of ancient woodland sites that cross the proposed route as shown in **Figure 8-1**.

Figure 8-1 - Map of the Proposed Red Line Boundary, nearby habitat designations and local authority NO_2 diffusion tube locations



SUMMARY OF POTENTIAL EFFECTS NOT REQUIRING CONSIDERATION

8.6.6. During construction, dust generating activities will be undertaken on Site. Typical dust generating activities include; demolition, earthworks, construction and trackout. The impacts of these activities are summarised below:

- Demolition - there will be a little to no demolition within the red line boundary and so the impact will be negligible;
- Earthworks – significant earthworks will be undertaken only for the underground works under existing roads. There will be no significant earthworks taking place for the remaining overground works and so impacts will be negligible;
- Construction – construction of the connection is unlikely to generate large volumes of dust and so is negligible; and
- Trackout – due to the limited dust generation from the above activities, the trackout of dust from construction vehicles is likely to be negligible.

8.6.7. With the application of best practise construction methods, impacts arising from dust generation will be negligible.

8.6.8. During operation, there will be no continuous source of emissions. Emissions generated during operation will arise from the use of maintenance vehicles which will be infrequent and temporary. It is unlikely that there will be any significant air quality impact to residential receptors or ecological habitat sites.

8.6.9. The elements of air quality assessment that could be scoped out are summarised in **Table 8-4** below.

Table 8-4 - Elements of Air Quality Assessment Scoped Out

Element	Effects	Justification
Construction Dust Emissions.	Temporary localised change in air emissions during demolition and construction works causing a nuisance as a result of demolition and construction traffic and construction plant/equipment	There are no likely significant air quality impacts from dust during the construction of the Project. With no demolition or significant earthworks, and following best practise construction methods, there are likely to be no impacts from dust.
Operational Phase Impacts on residential properties.	Short- and long-term impacts to both existing and future residential dwellings in the vicinity of the Project.	There are no expected air quality impacts during the operation of the Project. There will be no continuous emission source from the Project. Maintenance vehicles visiting the site are unlikely to lead to any short- or long-term impacts to air quality.
Impacts to Sites designated for nature conservation	Potential exposure to increased pollution levels and deposition	There are no expected air quality impacts during the operation of Project. There will be no continuous emission source from the Project. Maintenance vehicles visiting the site

(including ancient woodland).		are unlikely to lead to any short- or long-term impacts to air quality.

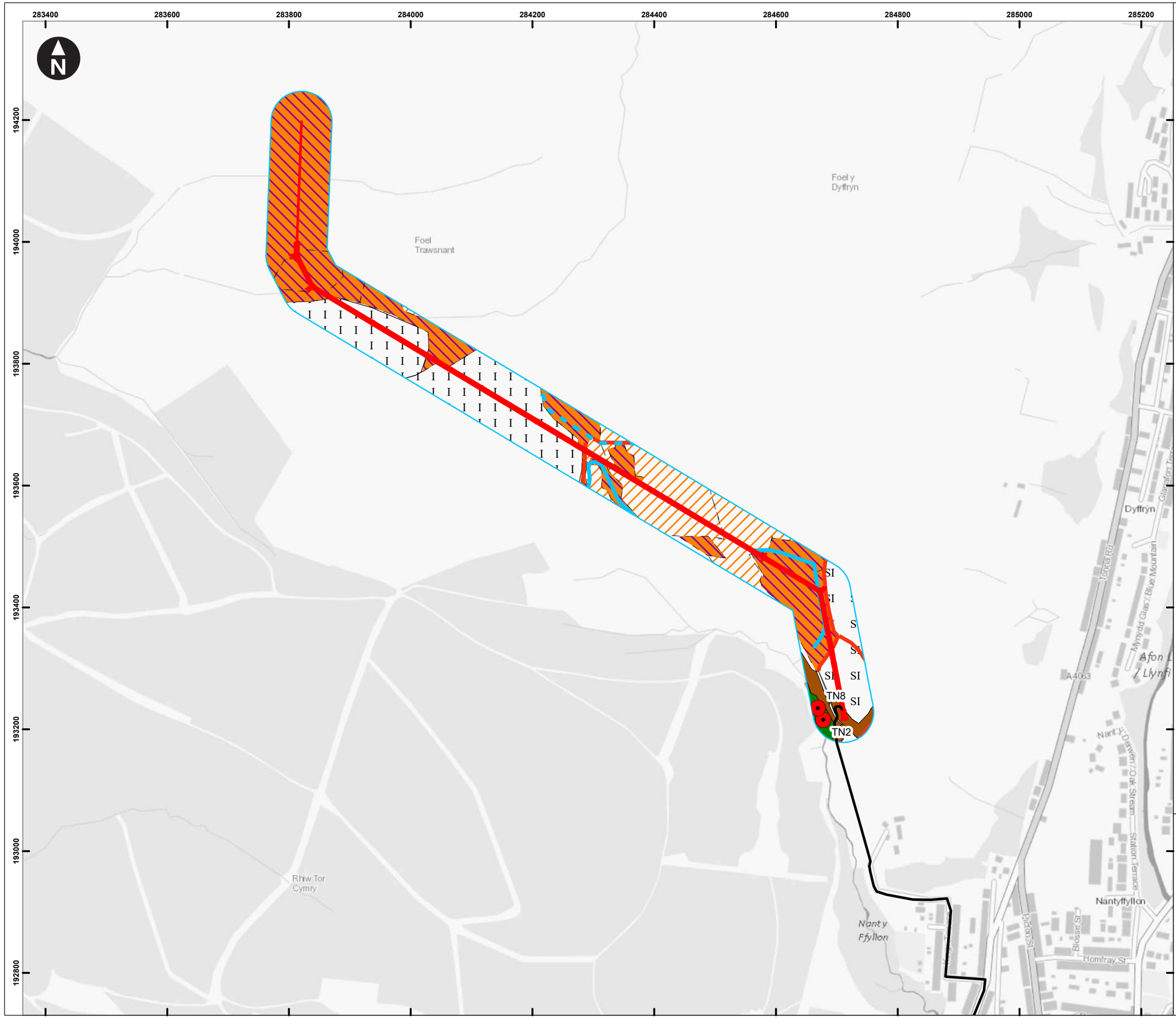
CONCLUSION

8.6.10. Due to the Project having only temporary emission to air during the construction phase it is not expected that there will be an impact to air quality to human or ecological receptors during construction.

8.6.11. Due to the Project having no emissions to air during operation it is not expected that there will be an impact to air quality to human or ecological receptors during operation.

Appendix A

PHASE 1 HABITAT RESULTS



Key

- Overhead line
- Underground cables
- Survey area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Scrub - scattered
- Acid grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Bracken - continuous
- Running water
- Wall
- Dry ditch
- Other habitat
- Target Note

Trees with Bat Roosting Suitability

- PRF

0 0.09 0.17 0.26 0.34 km

Scale at A3: 1:6,000

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Appendix A - Ecology

Appendix A
Phase 1 habitat results

November 2024

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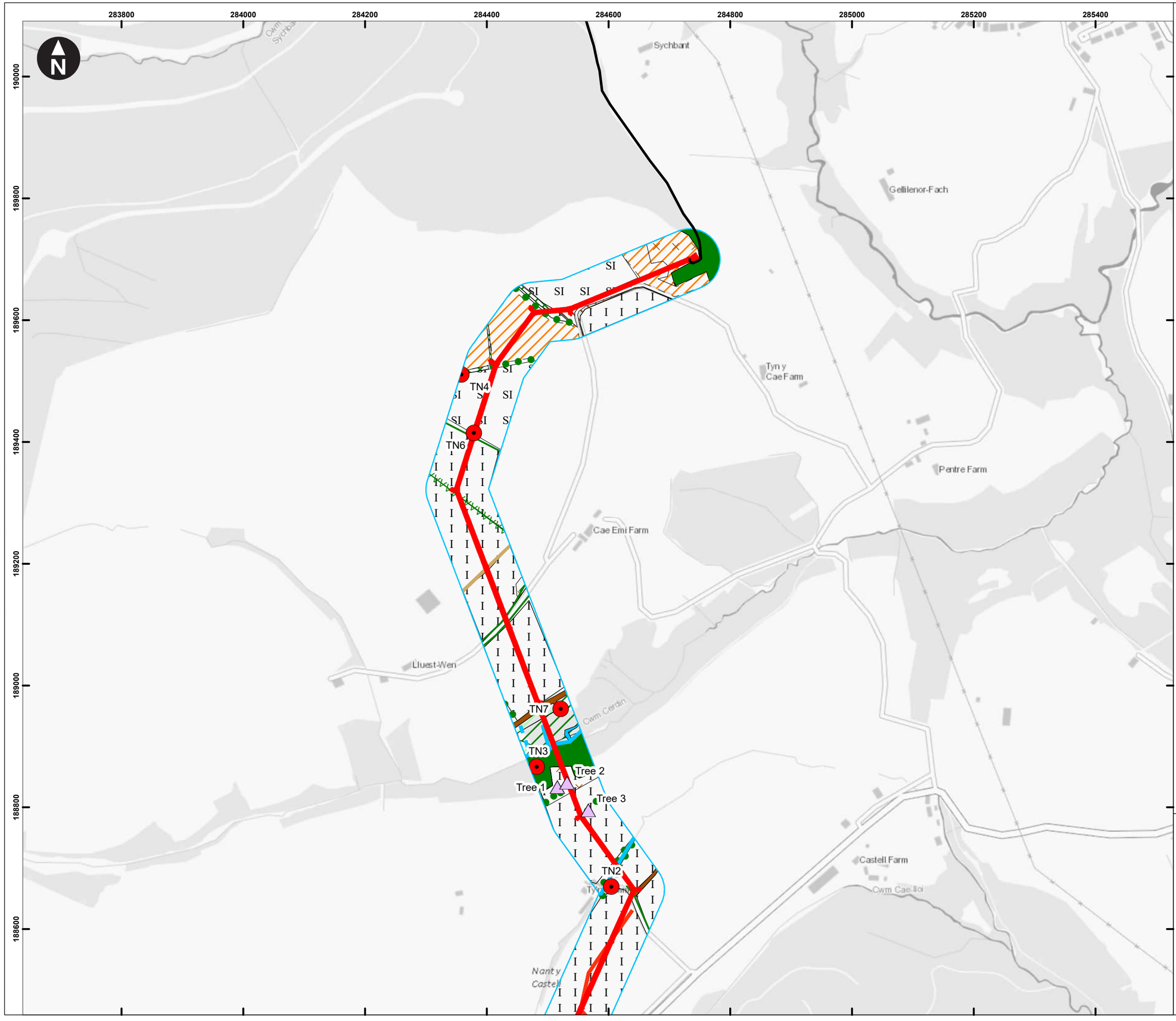

Key

- Overhead line
- Underground cables
- Survey area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Scrub - dense/continuous
- Acid grassland - semi-improved
- Improved grassland
- Poor semi-improved grassland
- Bracken - continuous
- Bracken - scattered
- Other tall herb and fern - ruderal
- Running water
- Broadleaved Parkland/ scattered trees
- Other tall herb and fern - ruderal
- Running water
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Wall
- Dry ditch
- Mixed woodland - semi-natural
- Broad-Leaved Parkland/ scattered trees
- Other habitat
- Target Note

Trees with Bat Roosting Suitability

- PRF

0 0.09 0.17 0.26 0.34 km

Scale at A3: 1:6,000

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Appendix A - Ecology

Appendix A
Phase 1 habitat results

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Key

- Overhead line
- Underground cables
- Survey area

Phase 1 Habitat Classification

- Broadleaved woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Bracken - continuous
- Bracken - scattered
- Hard standing
- Broadleaved Parkland/ scattered trees
- Standing water
- Running water
- Intact hedge - species-poor
- Wall
- Dry ditch
- Broad-Leaved Parkland/ scattered trees
- Other habitat
- Target Note

Trees with Bat Roosting Suitability

- PRF

0 0.09 0.17 0.26 0.34 km

Scale at A3: 1:6,000

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Appendix A - Ecology

Appendix A
Phase 1 habitat results

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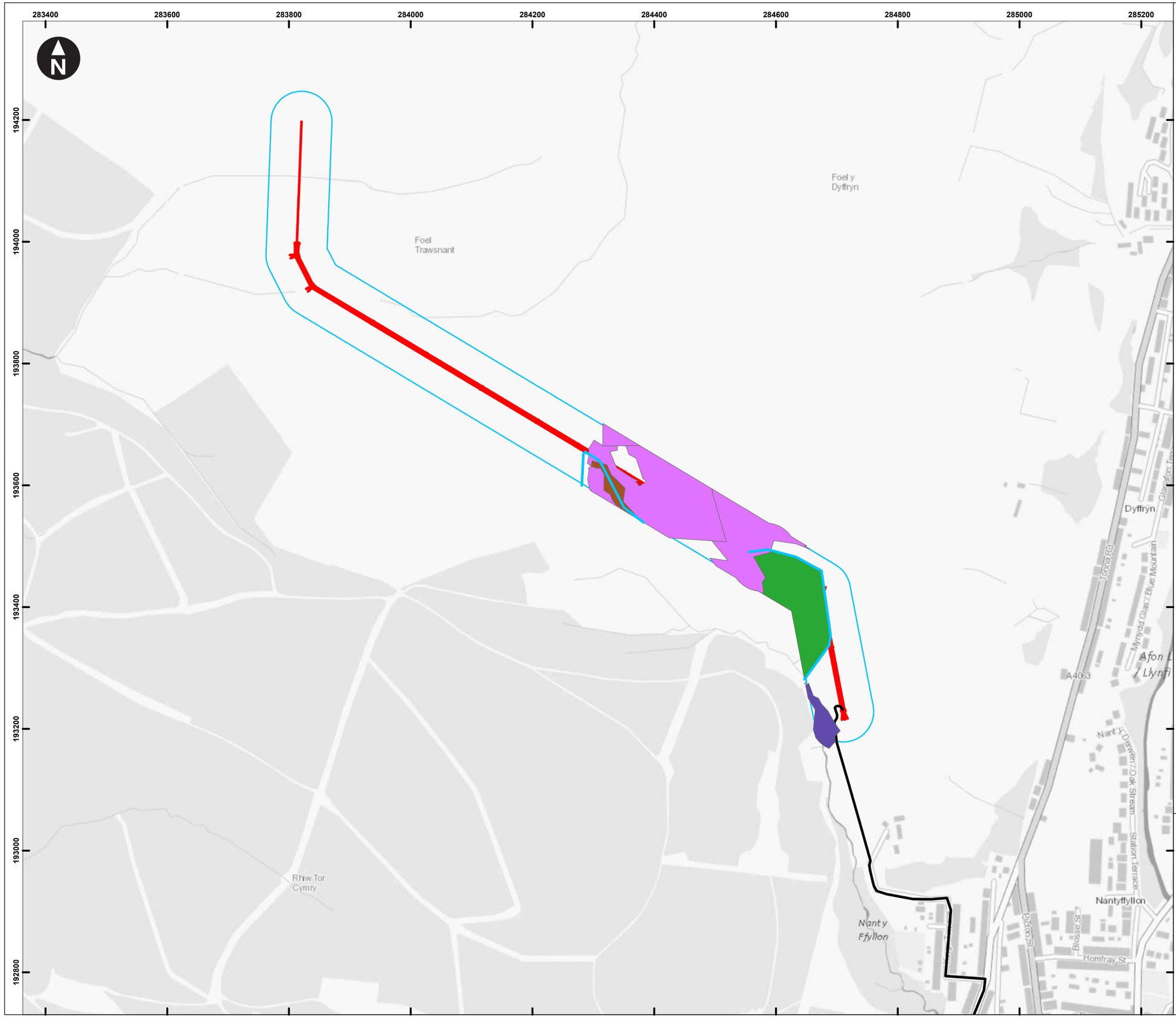
Appendix B

PRIORITY HABITATS AND ANCIENT WOODLAND



Key

- Overhead line
- Underground cables
- Survey Area

Priority Habitats

- Wet Woodland
- Lowland dry acid grassland
- Lowland fen
- Lowland mixed deciduous woodland
- Purple moor-grass and rush pasture
- Upland Oakwoods
- Hedgerows
- Rivers
- Ancient Semi-Natural woodland

0 0.09 0.17 0.26 0.34 km

Scale at A3: 1:6,000

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Appendix B - Ecology

Appendix B
Priority habitats and Ancient Woodland

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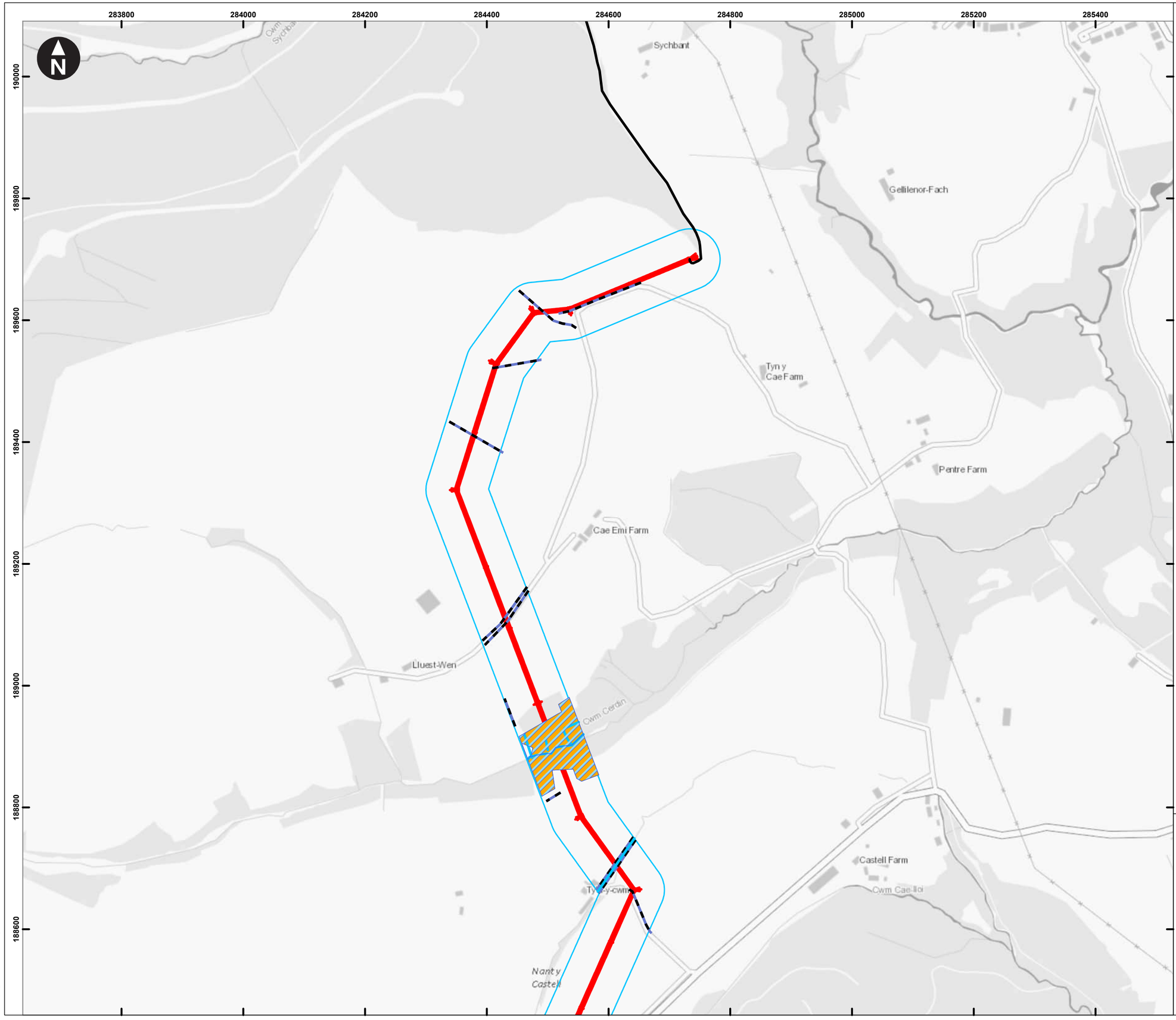

Key

- Overhead line
- Underground cables
- Survey Area

Priority Habitats

- Wet Woodland
- Lowland dry acid grassland
- Lowland fen
- Lowland mixed deciduous woodland
- Purple moor-grass and rush pasture
- Upland Oakwoods
- Hedgerows
- Rivers
- Ancient Semi-Natural woodland

0 0.09 0.17 0.26 0.34 km

Scale at A3: 1:6,000

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Appendix B - Ecology

Appendix B
Priority habitats and Ancient Woodland

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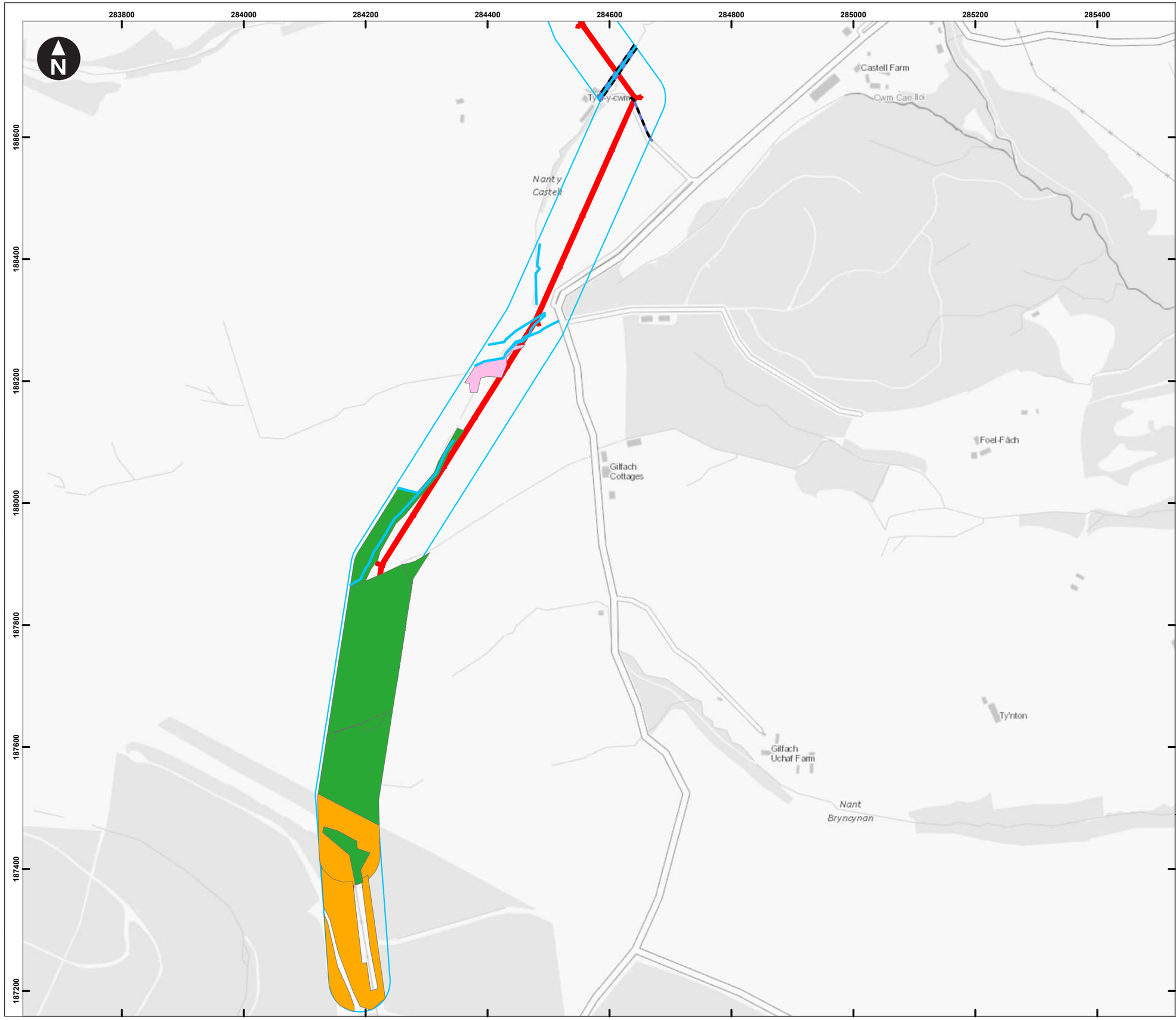

Key

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- Underground cables
- Survey Area

Priority Habitats

- Wet Woodland
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- Hedgerows
- Rivers
- Ancient Semi-Natural woodland

0 0.09 0.17 0.26 0.34 km

Scale at A3: 1:6,000

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Appendix B - Ecology

Appendix B
Priority habitats and Ancient Woodland

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Appendix C

MINING CONSTRAINTS PLAN

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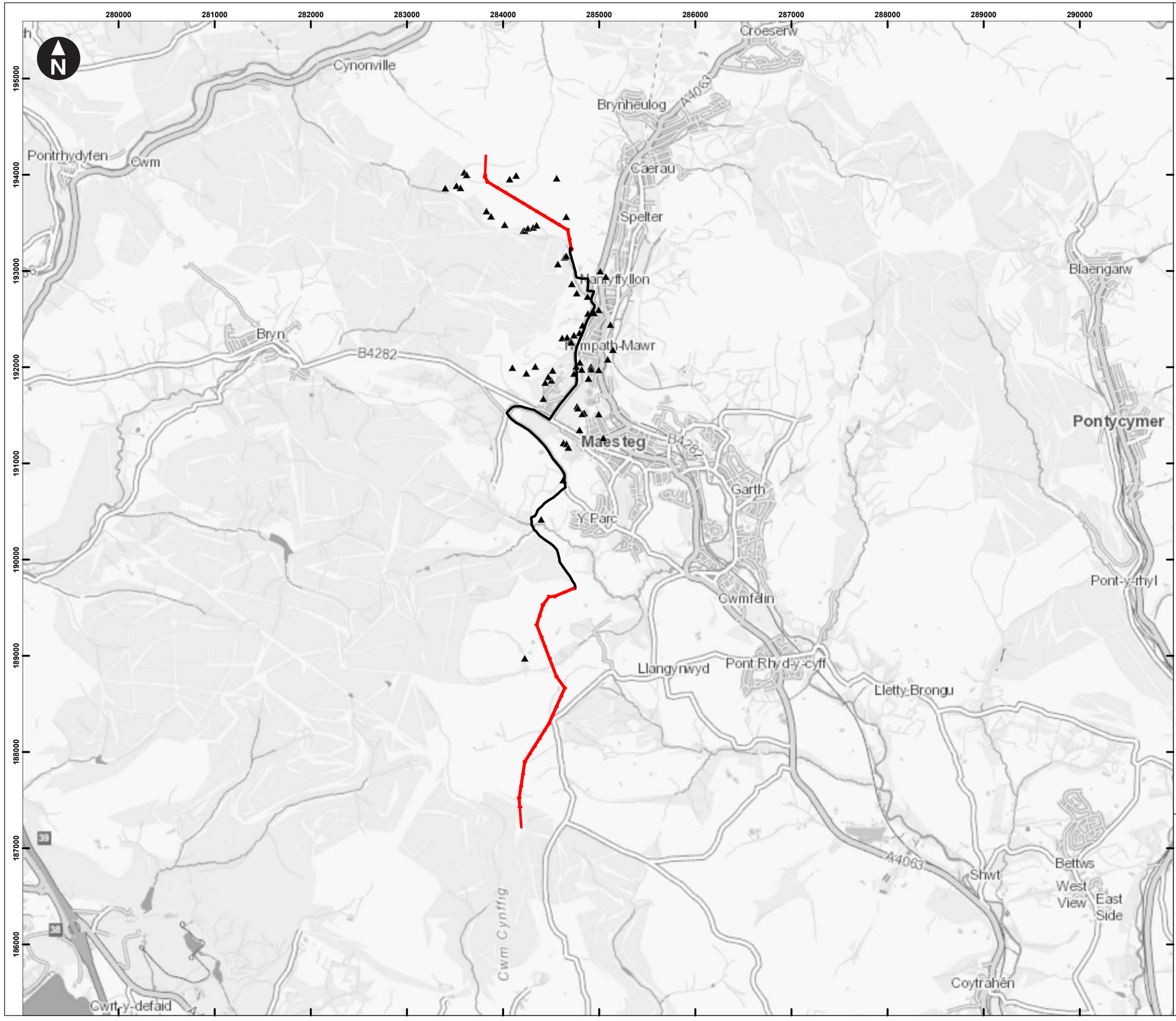

Key

- Overhead line
- Underground cables
- Approximate mine entries

0 0.55 1.1 1.65 2.2 km

Scale at A3: 1:38,000

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Appendix C - Mining

Appendix C
Mining constraints plan

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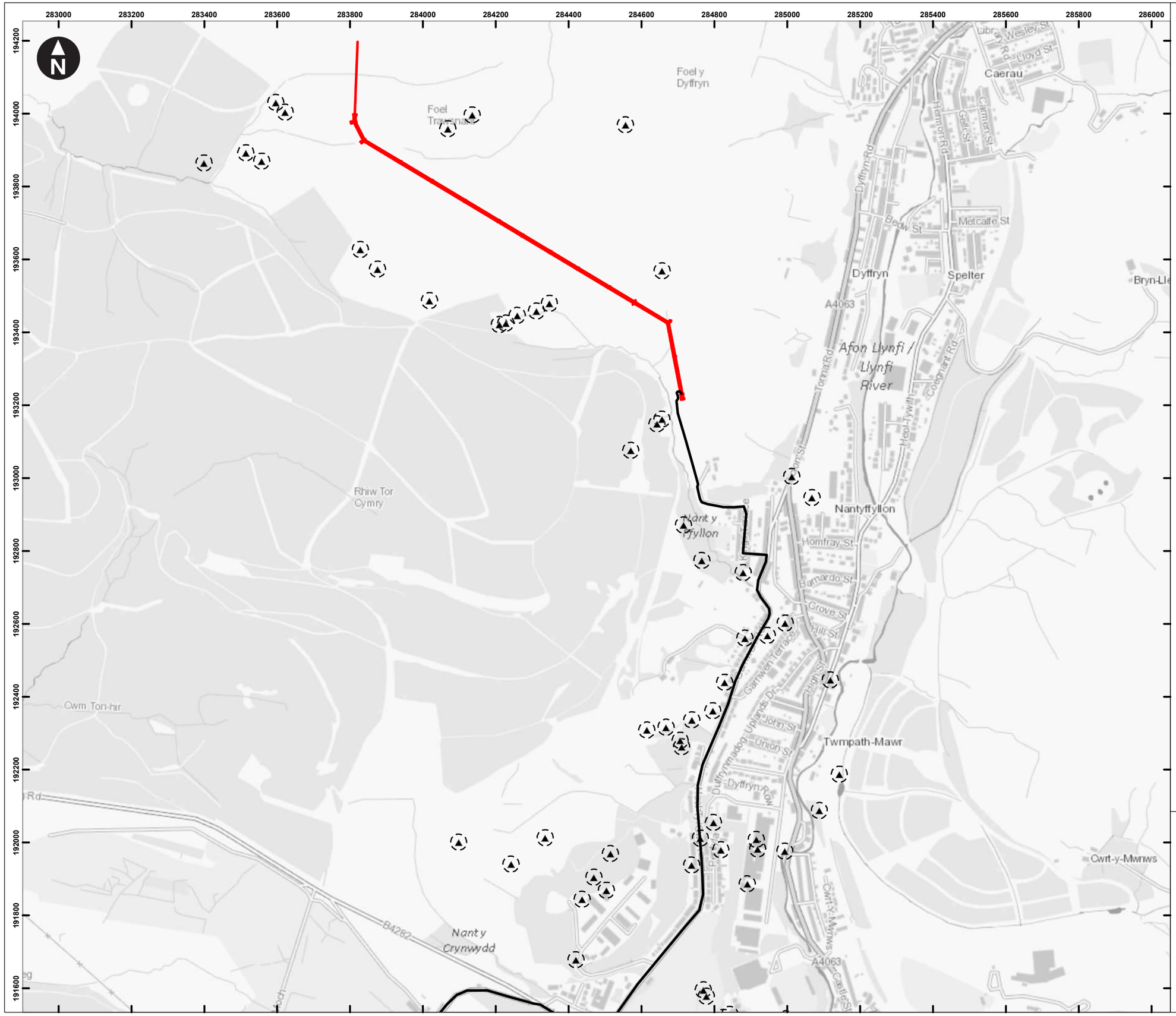

Key

- Overhead line
- Underground cables
- Approximate mine entries
- Mine entry Zone of Influence

0 0.1 0.2 0.3 0.4 km

Scale at A3: 1:10,000

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Mining constraints plan

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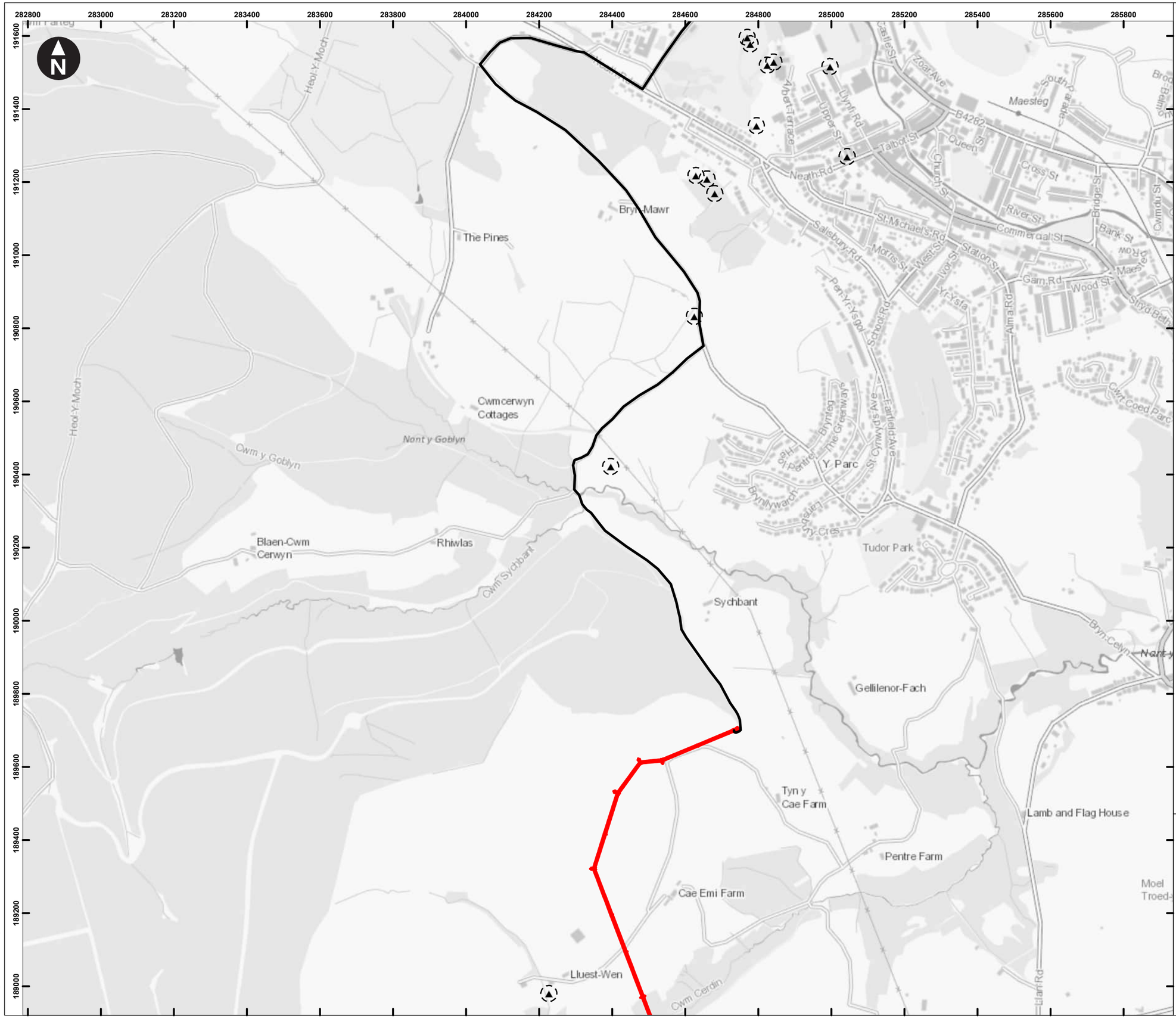

Key

- Overhead line
- Underground cables
- Approximate mine entries
- Mine entry Zone of Influence

0 0.1 0.2 0.3 0.4 km

Scale at A3: 1:10,000

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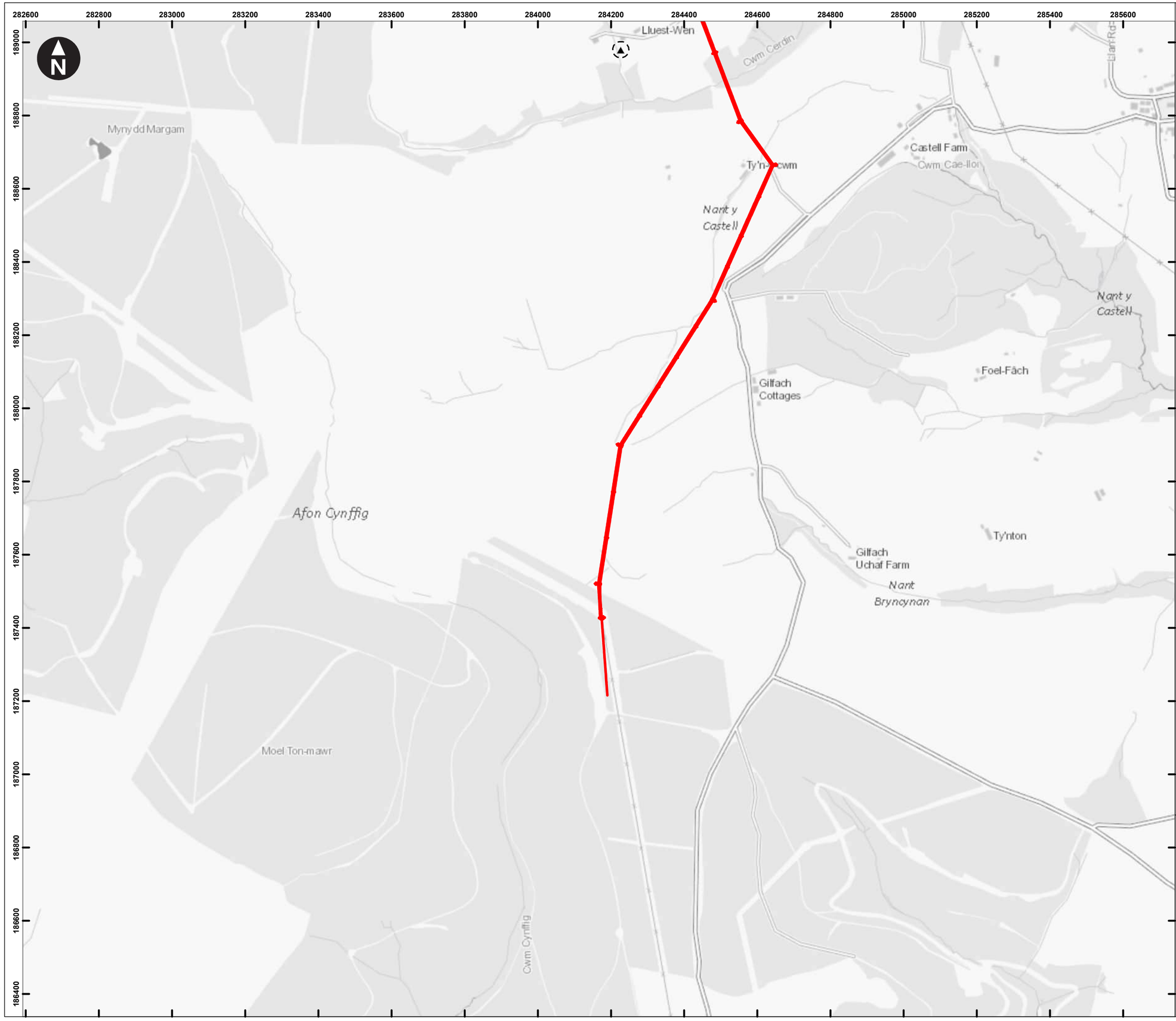

Key

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0 0.1 0.2 0.3 0.4 km

Scale at A3: 1:10,000

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