# 10 WATER RESOURCES AND FLOOD RISK

## 10.1 INTRODUCTION

10.1.1. This draft Environmental Statement (ES) chapter presents a detailed assessment of potentially significant impacts to Water Resources and Flood Risk receptors for the Project described in Chapter 1. By way of a summary for the purposes of this ES Chapter, the Project comprises:

- 4.4km of overhead lines (OHL), including 72 wooden poles;
- 5.1km of underground cabling (UGC), including cable ducts and 22 joint bay boxes;
- Temporary working areas, for example construction compounds and a temporary dam to enable UGC installation.

10.1.2. This chapter will consider potentially significant effects from the construction and operation of the Project on the local water environment and flood risk receptors. The methodology for undertaking the Water Resources and Flood Risk assessment is detailed in Section 10.9.

10.1.3. As part of this draft ES Chapter, all receptors identified in the Study Area that were presented in the Scoping Report have been considered and are detailed in Section 10.6. These receptors include, but are not limited to, main rivers, ordinary watercourses, groundwater bodies and flood risk zones. Data sources are identified and referenced, where applicable.

10.1.4. This Chapter should be read in conjunction with:

- **Chapter 1**, **Section 1.1**: **Overview of the Project**;
- **Chapter 1, Section 1.5: Scope of the EIA Report;**
- **Chapter 2: EIA Approach**; and
- **Chapter 8: Ecology**.

10.1.5. This chapter will assess the potential for impacts to the flow of surface water and groundwater, in addition to the potential for impacts to the quality of such resources. A detailed assessment of impacts to terrestrial and aquatic ecology is considered in **Chapter 8: Ecology**. A standalone Water Framework Directive (WFD) Screening and Scoping assessment is being undertaken separately and will accompany the submission of the final EIA Report for the Development of National Significance (DNS) application.

## 10.2 LIMITATIONS OF THIS ASSESSMENT

10.2.1. The following limitations and assumptions have been identified for the assessment:

- This assessment has relied upon data and records provided by third parties, and therefore it has been assumed that this information is accurate and up to date at the time of reporting;
- The assessment has been undertaken using the available design information for the Project and the maximum likely extents of land required for its construction, operation and maintenance;
- No walkover survey inspections have been conducted specifically for the Water Environment and Flood Risk assessment; and
- Stakeholder engagement with key regulators such as the LLFAs and NRW is ongoing to further develop understanding of the key Water Environment and Flood Risk issues associated with the Project. These consultations will be used to further inform this ES Chapter.

10.2.2. These limitations will be reviewed based on the design presented as part of the Pre-Application Consultation (PAC) and, where required, updated or refined, for the final EIA Report. The final EIA Report will present the limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this assessment.

## 10.3 POLICY, LEGISLATION AND GUIDANCE

10.3.1. The policy, legislation and guidance that is relevant to this Water Environment and Flood Risk ES Chapter is outlined below:

- Policy:
  - Planning Policy Wales (Edition 12) (2024)[104];
  - Bridgend County Borough Council (CBC) Local Development Plan (2018 - 2033)[105];
  - Bridgend CBC Flood Risk Management Plan (2016)[106];
  - Neath Port Talbot CBC Local Development Plan (2011 – 2026)[107];
  - Neath Port Talbot CBC Flood Risk Management Plan (2015)[108];
  - Neath Port Talbot Flood Risk Management Strategy Plan (2024)[109];
- Legislation:
  - Flood and Water Management Act (2010)[110];
  - The Water Environment (Water Framework Directive) (England and Wales) Regulations (2017)[111]; and
  - The Environmental Permitting (England and Wales) Regulations (2016)[112].
- Guidance:
  - National Highways Design Manual for Roads and Bridges (DMRB) LA 113: Road Drainage and the Water Environment (Revision 1) (2020)[113];

[104] Welsh Government (2024). Planning Policy Wales (Edition 12) (February 2024).
[105] Bridgend County Borough (2024). Local Development Plan 2018 – 2033 (Adopted March 2024). Available at: https://www.bridgend.gov.uk/media/izcfgp1f/written-statement.pdf
[106] Capita (2016). Bridgend Flood Risk Management Plan: Local Flood Risk Investigation Areas (August 2016). Available at: https://www.bridgend.gov.uk/media/1yflynyb/bridgend-flood-risk-management-plan.pdf
[107] Neath Port Talbot County Borough Council (2016). Local Development Plan (2011 – 2026) (Adopted January 2016). Available at: https://media.npt.gov.uk/media/ca2fbumd/ldp_written_statement_jan16.pdf?v=20240823155047
[108] Neath Port Talbot County Borough Council (2015). Flood Risk Management Plan 2015 (2015). Available at: https://media.npt.gov.uk/media/xubbj4xn/floodriskmanagementplan15-1.pdf?v=20250117154447
[109] AtkinsRealis (2024). Neath Port Talbot Flood Risk Management Strategy Plan (October 2024). Available at: https://democracy.npt.gov.uk/documents/s103486/App%20B%20-%204%20-%20NPTLFRMSP%20SEA%20Report%20v3.0.pdf
[110] UK Government (2010). Flood and Water Management Act 2010.
[111] UK Government (2017). The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.
[112] UK Government (2016). The Environmental Permitting (England and Wales) Regulations 2016.
[113] Highways England (2020). Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment (Revision 1). Available at: https://www.standardsforhighways.co.uk/tses/attachments/d6388f5f-2694-4986-ac46-b17b62c21727?inline=true

- Construction Industry Research and Information Association (CIRIA) guidance documents;
- Planning Guidance Wales[114];
- Climate Change Allowances and Flood Consequence Assessments (2021)[115];
- Western Wales River Basin Management Plan 2021 – 2027 Summary (2022)[116];
- Technical Advice Note 15: Development and Flood Risk (TAN15) (2004)[117];
- Water Framework Directive Nationally Significant Infrastructure Project (NSIP) guidance[118];
- Guidance for Pollution Prevention (GPP);
- Bridgend CBC Strategic Flood Consequence Assessment (2020)[119];
- Bridgend CBC Preliminary Flood Risk Assessment Report (2009 (2017 Addendum))[120];
- South West Wales – Stage 1 Strategic Flood Consequence Assessment (2022)[121];

10.3.2. The Technical Advice Note 15: Development and Flood Risk (TAN15) (2004) will be followed to inform the assessment of flood risk. The current version of this document, issued in 2004, was most recently updated in 2021 but the formal adoption of this updated document has not yet been actioned due to further consultation requirements. The Development Advice Map (DAM) relates to the 2004 TAN15 and the Flood Map for Planning (FMfP) relates to the proposed updates to TAN15. Both the DAM and FMfP have been used to inform the flood risk content for this ES. There is a possibility that the updated version of TAN15 will be adopted as the ES progresses to submission. The need to update this ES will be discussed and agreed with the relevant authorities.

## 10.4 CONSULTATION

### SCOPING OPINION

10.4.1. The scope of the assessment has been informed by the Scoping Opinion provided by PEDW (**Appendix 2B**), following the submission of the EIA Scoping Report. A summary of the Scoping

[114] Welsh Government (2025). Planning Policy and Guidance for Professionals. Available at: https://www.gov.wales/planning-policy-and-guidance-for-professionals [Accessed: March 2025].
[115] Welsh Government (2021). Climate Change Allowances and Flood Consequence Assessments (2021). Available at: https://www.gov.wales/climate-change-allowances-and-flood-consequence-assessments [Accessed: March 2025].
[116] Natural Resources Wales (2022). Western Wales River Basin Management Plan 2021 – 2027 Summary (July 2022). Available at: https://nrwcmsv13-a3hwekacajb3frbw.a02.azurefd.net/695227/western-wales-rbmp-2021_2027-summary.pdf
[117] Welsh Government (2004). Technical Advice Note 15: Development and Flood Risk (July 2004). Available at: https://www.gov.wales/sites/default/files/publications/2018-09/tan15-development-flood-risk.pdf.
[118] Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive (last updated November 2024). Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-the-water-framework-directive [Accessed: March 2025].
[119] JBA Consulting (2020). Strategic Flood Consequence Assessment: Bridgend County Borough Council (October 2020). Available at: https://www.bridgend.gov.uk/media/xx1n3muo/sd62-bridgend-strategic-flood-consequences-assessment-2020.pdf
[120] Bridgend County Borough Council (2017). Flood Risk Regulations 2009: Bridgend County Brough Council Preliminary Flood Risk Assessment Report (November 2017). Available at: https://www.bridgend.gov.uk/media/1thbqatz/preliminary-flood-risk-assessment-report.pdf.
[121] JBA Consulting (2022). South West Wales – Stage 1 Strategic Flood Consequence Assessment (November 2022). Available at: https://media.npt.gov.uk/media/xnwlvwb0/doc-11-strategic-flood-consequences-assessment.pdf.

Opinion together with a response against each point of relevance to the Water Environment and Flood Risk assessment chapter is provided in **Table 10-1** below.

**Table 10-1 – Scoping Opinion responses**

| Consultee | Scoping Opinion point raised | Response |
|---|---|---|
| Natural Resources Wales – 3.1: Water Resources | The report appears to identify watercourses that could potentially be impacted by the project yet proposes that no Water Framework Directive (WFD) assessment is required. Due to the number of watercourses that the project crosses, the risk of potential impact to the aquatic environment could be high. We would recommend that a WFD assessment is carried out. Any works should not lead to a deterioration in that waterbody or prevent that waterbody from meeting a good status/potential. | The need for a WFD assessment is noted. The ES will still outline potentially significant impacts to WFD waterbodies, but a more detailed standalone WFD screening and scoping will be undertaken. |
| | We advise the ES identify pollution sensitive receptors and their risks, for example ditches and small tributaries that lead to rivers such as Nant y Ffyllon, Nant Crynwydd, Nant Sychbant, Nant Lluest-Wen and other receiving watercourses. The following GPP 1 provides an understanding to your environmental responsibilities:<br>guidance-for-pollution-prevention-1-2022-update.pdf | A number of watercourses and associated tributaries were identified in the Scoping Chapter and shown on the surface water constraints maps. The potential impacts to these watercourses will be assessed in the Water Environment and Flood Risk ES Chapter. |
| | When undertaking works near water reference should be made to GPP 5 guidance for pollution prevention, which can be found here:<br>gpp-5-works-and-maintenance-in-or-near-water.pdf | GPP 5 will be taken into consideration when recommending measures for the Construction Environmental Management Plan (CEMP). This ES will assess the potential for watercourse pollution as a result of the proposed works, and proportionate mitigation measures will be recommended in accordance with the GPP. |
| | Any water that comes into contact with wet concrete must be treated as contaminated and must not be allowed to discharge into any watercourse. Specific attention should be paid to section 3 of the above guidance. | As above, GPP 5 will be taken into consideration when recommending measures for the CEMP. This ES will assess the potential for watercourse pollution as a result of the proposed works, and proportionate mitigation measures will be recommended in accordance with the GPP. |

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| | The agreed method of working and installation of cabling must be compiled with at all times to avoid discolouration/sedimentation or pollution of the watercourse. It is important that no large sections of trenches are left open when dug for cabling. These trenches connect to watercourses, and during rainfall events, can cause a pollution. All avenues and methods of laying cable should be explored. We note and encourage the use of a Cable Plough. The most significant advantage of the Cable Plough is its low impact on the environment. Whilst traditional methods of pipe and cable installation require a sizable trench to be dug and then refilled, the Cable Plough's efficient way of cutting a narrow slit into the soil causes only minimum disturbance to the land.<br><br>Should any discolouration/sedimentation or pollution of the watercourse occur, work must stop immediately, and Natural resources Wales notified on 0300 065 3000 to review work practices before work commences. All fuel, oil and chemicals used on Site must be stored away in a locked store which is bunded to 110% capacity of the total volume stored.<br><br>Silt mitigation measures should be implemented throughout the work site where appropriate. A variety of measures should be employed in conjunction as they work more effectively in combination. However, the placement of silt nets downstream is not a license for increased silt production. All efforts should still be made to prevent any silt being produced by the works.<br><br>Metal pins/rods should not be used to support silt fencing or sedi-mats as they do not provide sufficient support, resulting in the products sagging or collapsing. Wooden stakes should be used in accordance with the manufacturer's installation recommendations.<br><br>The early establishment of buffer strips during surface restoration work can filter runoff and reduce soil erosion – such measures are particularly important on steep slopes and bare soil vulnerable to runoff.<br><br>Due to the nature of the site being a hillside valley it is vital that silt mitigation, management and measures are in place during the construction phase. This should include details of impacts during heavy rainfall. | NRW's preference for Cable Plough as the means of UGC installation is acknowledged. However, the preferred method of installing UGC is proposed to be open cut method.<br><br>The additional points raised, including on discolouration and sediment control, buffer strips, silt mitigation and installation of pollution control products within a watercourse is noted and will be included in recommendations for the CEMP that is submitted alongside the ES. |

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| | Wherever possible clean or uncontaminated water should be intercepted and diverted around the working area. This should help minimise the volume of dirty water generated and therefore requiring treatment (if reasonably practicable).<br><br>Water quality leaving the working area will need to be regularly monitored to avoid a pollution incident. It may be necessary to: adjust, replace, or augment the pollution control products deployed and/or adapt the work method further, as work recommences and progresses. As with all pollution mitigation measures, these will need to be reviewed by yourselves regularly through the works and if found not to be sufficient, other options should be considered.<br><br>The installation of pollution control products within a watercourse should be the last stage of mitigation measures; the principles of the pollution control hierarchy should always be followed:<br><br>1. Contain at source<br>2. Contain close to source.<br>3. Contain on the surface.<br>4. Contain in the drainage system.<br>5. Contain on the watercourse.<br><br>Based on the risk of potential harm to the aquatic environment we would advise an overarching CEMP alongside site specific CEMPS is submitted where river crossings are used and/or underground cabling is to be installed. The risk of silt mobilisation and run off is high therefore the CEMPs should include detailed information regarding robust mitigation measures to be deployed at each relevant location. This can be controlled by condition. | |
| Natural Resources Wales – 3.2: Groundwater | <u>Decommissioning</u><br><br>Section 6.5.8 states that its likely underground cables will be left in-situ once the scheme is decommissioned. We note that buried cables over the decades of operating time, and then left in-situ could degrade and release hazardous chemicals into the environment and pollute groundwater. This risk is a function of the type of chemicals that are used to manufacture the cabling, the quality assurance/quality control of that | The cables within the UGC corridor will not be oil filled. Leaving the cables in-situ following decommissioning is therefore not considered to pose risk of pollution should the integrity of the cables be compromised. |

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| | manufacturing process and the environment within which the cabling will function. The groundwater quality may vary over time such as changes in pH, and this may affect the integrity of cabling that is buried within shallow groundwater.<br><br>It is possible that the insulating properties of sections of the buried cabling reduce, and this may require the cabling to be removed and replaced. We advise this is considered within the ES. If it cannot be evidenced that cabling left in perpetuity in the ground will not release harmful chemicals into the environment then remnant cabling should be removed. | |
| Natural Resources Wales – 3.2: Flood Risk | We note that the proposed development, including cable run above and below ground is within an area of flood plain or needs to cross a main river. We note that a high level assessment of flood risk and flood consequences will be undertaken and not a standalone Flood Consequences Assessment which we note is responsible. We advise further consultation with the relevant lead local authority on surface water flooding. | We note that the proposed approach to assessing flood risk is acceptable. Welsh Water, Bridgend CBC and Neath Port Talbot CBC have been consulted separately; details of these consultations can be found in Table 10-2. |

## MATTERS SCOPED OUT

10.4.2. Following receipt of the Scoping Opinion, the following Water Resources and Flood Risk matters have been scoped out of assessment in this ES Chapter:

- Impact to surface water features and groundwater resources associated with the removal of cables in decommissioning as underground cables will be left in-situ – **Decommissioning Phase**;
- Pollution risk to surface water features and groundwater resources associated with leaving UGC in-situ following decommissioning as cables will not be oil filled – **Decommissioning Phase**;
- Pollution risk to surface water features and groundwater resources during the operational phase – **Operational Phase**;
- Impact to watercourses crossed by the Project during the operational phase – **Operational Phase**; and
- Impact to groundwater levels and flows during the operational phase – **Operational Phase**.

10.4.3. In addition, the potential for impacts relating to the disturbance of contaminated soils was scoped out of assessment as discussed in the Land Quality chapter of the Scoping Report.

## CONSULTATION RESPONSES

10.4.4. A consultation email was sent out to consultees offering a description of the Project and outlined the elements that were scoped in for further assessment. Engagement was requested with the authorities to understand aspects that the authority believes should be addressed relating to surface

waters, groundwater and flood risk (through construction and/or operation, in addition to permit requirements and knowledge of existing drainage issues).

10.4.5. A summary of consultation that has been undertaken to date is summarised in **Table 10-2** below.

**Table 10-2 – Summary of consultation**

| Body/organisation | Consultation date | Consultation outcome |
|---|---|---|
| Dwr Cymru Welsh Water (DCWW) | 30 January 2025 | Response received from Design and Build team in Developer Services regarding contact details for further engagement and potential clashes with existing assets in the vicinity of a service reservoir. Detailed design requested for the Project in the Nantyffyllon to Y Parc area.<br><br>The CEMP will recommend that further consultation with DCWW is undertaken to avoid potential clashes during the installation of the Project. |
| Bridgend CBC Land Drainage | 12 February 2025 | A copy of the Flood Defence Consent form for works on Ordinary Watercourses was sent, along with information regarding the application determination process. Working consents would generally be required for any works within 7m of any watercourse and both working and permanent consents for works which cross watercourses.<br><br>The Land Drainage team promoted early engagement to discuss proposals, working methods, etc. to ensure that any application made has sufficient detail to allow registration and consideration.<br><br>Bridgend CBC hold information on culverted watercourses. At the time of writing, no detailed design of the scheme had been made available. This information has since been made available.<br><br>The CEMP will recommend further consultation with Bridgend CBC to discuss consenting requirements, working methods and potential issues associated with culvert condition within areas of proposed construction of the Project. |
| NRW Flood Risk Analysis | 21 February 2025 | A list of available fluvial flood models was provided by the Data Distribution team:<br><br>▪ Maesteg_5_V1.0_2012<br>▪ Maesteg_5_V1.1_2022 (climate change runs only)<br>▪ Margam_FMC_5_V1.0_2023<br>▪ Pyle_5_V1.0_2012<br>▪ Pyle_5_V1.2_2022 (climate change runs only)<br><br>The need to request these models to inform the assessment of flood risk will be considered. |

## 10.5 DATA GATHERING METHODOLOGY

10.5.1. The Water Environment and Flood Risk baseline has been developed on the basis of a desk-based assessment of existing data. The understanding obtained from the baseline data was supplemented by subsequent consultation with relevant water and flood risk stakeholders.

10.5.2. The primary sources of information used to inform this assessment of potential impacts to water environment and flood risk receptors are:

- British Geological Survey (BGS) Geoindex[122];
- NRW Water Watch Wales Mapping[123];
- NRW Flood Map for Planning (FMfP)[124];
- NRW Development Advice Map (DAM)[125];
- NRW Geographic Information about the Natural Environment[126];
- Data Map Wales[127];
- Ordnance Survey (OS) Mapping;
- Welsh Water Sewerage Plans.;
- Bridgend CBC Strategic Flood Consequence Assessment (2020)[128];
- Bridgend CBC Preliminary Flood Risk Assessment Report (2009 (2017 Addendum))[129]; and
- South West Wales – Stage 1 Strategic Flood Consequence Assessment (2022)[130].

[122] BGS GeoIndex (onshore). Available at: GeoIndex (onshore) - British Geological Survey [Accessed: October 2024]. Contains British Geological Survey materials © UKRI [2024].
[123] Water Watch Wales Map Gallery (Natural Resource Wales). Available at: Water Watch Wales [Accessed: October 2024]. © Copyright Natural Resources Wales 2022.
[124] 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.
[125] 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.
[126] NRW Geographic Information about the Natural Environment. Available at: Natural Resources Wales / Browse map of data about the natural environment. [Accessed: October 2024]. 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.
[127] Data Map Wales. Available at: Home | DataMapWales
[128] JBA Consulting (2020). Strategic Flood Consequence Assessment: Bridgend County Borough Council (October 2020). Available at: https://www.bridgend.gov.uk/media/xx1n3muo/sd62-bridgend-strategic-flood-consequences-assessment-2020.pdf
[129] Bridgend County Borough Council (2017). Flood Risk Regulations 2009: Bridgend County Brough Council Preliminary Flood Risk Assessment Report (November 2017). Available at: https://www.bridgend.gov.uk/media/1thbqatz/preliminary-flood-risk-assessment-report.pdf.
[130] JBA Consulting (2022). South West Wales – Stage 1 Strategic Flood Consequence Assessment (November 2022). Available at: https://media.npt.gov.uk/media/xnwlvwb0/doc-11-strategic-flood-consequences-assessment.pdf.

## 10.6 OVERALL BASELINE

### EXISTING BASELINE

#### Surface Water Features

10.6.1. Surface water features in the Study Area are illustrated in **Figure 10.1**.

10.6.2. A review of OS mapping indicates 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 and a number of named rivers. The Project passes through the following key waterbody catchments:

- Afon Afan
- Afon Llynfi
- Ffrwd Wyllt
- Afon Cynffig (Kenfig)

10.6.3. All waterbodies are located in the Western Wales River Basin District. The key watercourses within these catchments are discussed below.

**Afon Afan**

10.6.4. The northern extent of the Project that comprises OHL is located within the catchment of the Afon Afan. The Blaen Nant, Nant yr Hwyaid,Nany Cynon and Nant Tryfal Ordinary Watercourses are located in close proximity / are crossed by the alignment of the OHL, flowing north to discharge to the Afon Afan approximately 1.5km north of the Project. The Afon Afan is a WFD designated waterbody (conf with Corrwg to confluence with Pelenna (GB110058026130)). The waterbody is not classified as a heavily modified river and is of Moderate overall status, which includes Moderate Ecological status and High Chemical status, as assessed during the WFD River Waterbody Catchment Cycle 3 Assessment (2019), which builds on the Cycle 1 and Cycle 2 findings.

**Afon Llynfi**

10.6.5. The Afon Llynfi is not crossed by the Project but located approximately 250m to the east of the UGC, separated by the village of Nantyffyllon. The watercourse is a Main River and WFD designated waterbody (headwaters to Lletty Brongu Sewage Treatment Works (STW) (GB110058026331)). The Afon Llynfi is the main waterbody into which the majority of other watercourses within the Study Area discharge. The Nant y Cerdin located approximately 800m east of the Project (boundary between UGC and OGL sections) forms part of the WFD classification for the Afon Llynfi, . The waterbody is not classified as a heavily modified river and is of Moderate overall status, which includes Moderate Ecological status and High Chemical status, as assessed during the WFD River Waterbody Catchment Cycle 3 Assessment (2019).

10.6.6. A small Ordinary Watercourse referred to Nant y Ffyllon flows immediately adjacent to the UGC section of the Project for a length of approximately 300m in the Pen-y-lan area of Nantyffyllon. The watercourse is crossed by the Project within the existing highway corridor of Garnwen Road. The watercourse continues to flow east to discharge to the Afon Llynfi.

10.6.7. The UGC section of the Project crosses the Nant y Crynwydd Ordinary Watercourse west of Maesteg. The watercourse appears to be located in culvert at this location and the crossing of the

Project is within the existing highway corridor of Heol ty Gwyn. The watercourse continues to flow east to discharge to the Afon Llynfi.

10.6.8. The UGC section of the Project crosses the Nant Sychbant Ordinary Watercourse at its confluence with the Nant Cwmcerwyn to the west of Y Parc. The crossing at this location is proposed to be open cut. The combined watercourse continues to flow east to confluence with the Nant y Cerdin discussed above.

10.6.9. The UGC section of the Project crosses several other unnamed Ordinary Watercourses in the catchment of the Afon Llynfi; with the exception of the Nant Sychbant it is understood that other watercourse crossings will be made within the alignment of the existing highway network.

10.6.10. The OHL section of the Project crosses the Nant Lluest-wen Ordinary Watercourse that flows east to discharge to the Nant y Cerdin, that is turn confluences with the Afon Llynfi as discussed above and forms part of the WFD waterbody designation.

10.6.11. The OHL section of the Project crosses the upper reaches of the Nant y Castell Ordinary Watercourse that flows east to ultimately discharge to the Afon Llynfi. The downstream extent of this watercourse is a WFD designated waterbody (Llynfi - Lletty Brongu STW to conf with Ogmore (GB110058026332)). The waterbody is not classified as a heavily modified river and is of Moderate overall status, which includes Moderate Ecological status and High Chemical status, as assessed during the WFD River Waterbody Catchment Cycle 3 Assessment (2019).

**Ffrwd Wyllt**

10.6.12. The Nant Cwmfarteg Ordinary Watercourse is located immediately west of the UGC section of the Project to the west of Maesteg. The Project is within the existing highway corridor at this location. The Nant Cwmfarteg flows west to confluence with the Ffrwd Wyllt approximately 3km west of the Project near the village of Bryn; the watercourse continues to flow west and downstream of this confluence the Ffrwd Wyllt is designated as a Main River. The Nant Cwmfarteg and Ffrwd Wyllt form a WFD designated waterbody (headwaters to tidal limit (GB110058026100)). The waterbody is classified as a heavily modified river with Moderate overall status, which includes Moderate Ecological status and High Chemical status, as assessed during the WFD River Waterbody Catchment Cycle 3 Assessment (2019).

**Afon Cynffig (Kenfig)**

10.6.13. The Afon Cynffig is an Ordinary Watercourse west of the OHL section of the Project in the Study Area (Main River downstream of its confluence with Nant Lowerth-Gogh approximately 4km south of the Project) and WFD designated waterbody (Kenfig - headwaters to tidal (GB110058026170)). A tributary of the Afon Cynffig, the Nant Craigyraber, is located to the southeast of the Project in the Study Area, and forms part of the same WFD waterbody designation as the Afon Cynffig. The waterbody is of Moderate overall status, including Moderate Ecological status and High Chemical status, as assessed during the WFD River Waterbody Catchment Cycle 3 Assessment (2019).

**Designated Sites**

10.6.14. Review of Data Map Wales 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 below.

**Existing Drainage**

10.6.15. Plans received from Welsh Water show that Maesteg, Y Parc and Nantyffyllon are served mostly by conventional piped sewerage. This comprises a mix of surface water gravity-fed sewers and some sections of pumped network that outfall into the Afon Llyfi and a foul network that is piped to nearby water treatment works.

10.6.16. A review of OS Mapping indicates that there are a number of culverted watercourses that are considered likely to convey flow from the watercourses discussed in the Surface Water Features section above under Nantyffyllon and Maesteg to outfall to the Afon Llynfi. The condition of these culverted watercourses is currently unknown, but Bridgend CBC have confirmed they hold information on the condition of the culverts within the Study Area. Further discussion with Bridgend CBC to establish the condition of any culverts affected by the Project will be recommended in the CEMP.

**Surface Water Abstractions**

10.6.17. Abstraction license data will be requested through consultation with NRW, Neath Port Talbot CBC and Bridgend CBC LLFAs and will be used to inform the assessment as the ES progresses as an indication of waterbody sensitivity.

**Groundwater**

10.6.18. **Figure 10.2**, **10.3** and **10.4** offer visualisation of the bedrock and superficial geology compositions and groundwater vulnerability across the 5km Study Area.

10.6.19. The entirety of the alignment of the Project passes through Secondary (Undifferentiated) Superficial Aquifers and Secondary A Bedrock Aquifer.

10.6.20. To the south of Neath Road, the Project comes within approximately 30m of a Secondary A Superficial Aquifer.

10.6.21. Within the 5km Study Area, there is a mix of Secondary A, Secondary (Undifferentiated) and Unproductive Superficial Aquifers. 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.

10.6.22. The 5km Study Area comprises mostly Secondary A Bedrock Aquifer 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.

10.6.23. A summary of BGS Geology Viewer online mapping providing geological information of the superficial and bedrock geology within the Study Area is provided in **Table 10-3** below.

**Table 10-3 - 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. |

10.6.24. Data Map Wales 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).

10.6.25. Abstraction license data will be requested through consultation with NRW, Neath Port Talbot CBC and Bridgend CBC LLFAs and will be used to inform the assessment as the ES progresses as an indication of waterbody sensitivity.

10.6.26. Section 8.5: Land Quality in the Scoping Report (**Appendix 2A**) concluded that it is predicted that there will be no significant adverse effects associated with land contamination once the following is considered: legal requirements (CDM, the Health and Safety at Work Act and the Waste Regulations); the commitment to implementation of good and standard construction practices; the commitment to development of an unexpected contamination protocol; and commitment to complete a Phase 1 Desk Study to support the planning application, which will then inform further investigation if this is needed.

**Risk of Fluvial/Tidal Flooding**

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

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

10.6.28. 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.

10.6.29. 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.

10.6.30. The fluvial and tidal (including coastal and from the sea) flood zones for each set of 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.

**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;
- **Flood Zone C1**: Served by significant infrastructure, including flood defences; and

- **Flood Zone C2**: Without significant flood defence infrastructure.

10.6.31. Extracts from the FMfP and DAM are shown in **Figure 10.5** and **Figure 10.6**.

10.6.32. The vast majority of the Project 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.

10.6.33. The UGC section of the Project crosses narrow areas of Flood Zone 2 and 3 (FMfP) (that include uplift for climate change) and Flood Zone C2 (DAM) 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.

10.6.34. The UGC section of the Project also crosses the DAM Flood Zone C2 adjacent to Nantyffyllon. 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.

**Risk of Surface Water/Small Watercourse Flooding**

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

10.6.36. NRW defines surface water/small watercourse flood zones as follows:

- **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.

10.6.37. Areas at risk of surface water flooding are shown in **Figure 10.7**.

10.6.38. 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 through the Study Area. A number of these watercourses are indicated to drain into the Afon Llynfi.

10.6.39. The Project lies to the west of urban areas such as Nantyffyllon, 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.

10.6.40. **Figure 10.7** illustrates interactions the Project has with the higher risk areas.

**Risk of Reservoir Flooding**

10.6.41. 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.

10.6.42. 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.

10.6.43. 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[131].

**Risk of Groundwater Flooding**

10.6.44. 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.

10.6.45. 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. The number of springs within the Study Area indicate that groundwater could be close to the ground's surface.

10.6.46. The Phase 1 Ground Investigation Desk Study will provide further information of expected depth to the groundwater table and therefore offer further details on the risk pose to below ground construction works.

10.6.47. **Figure 10.2**, **10.3** and **10.4** offer a spatial representation of the different geological compositions and vulnerability in the Study Area that could suggest increased groundwater flood risk.

[131] Flooding from Reservoirs (Natural Resources Wales). Available at: Natural Resources Wales / Flooding from reservoirs [Accessed: October 2024].

## 10.7 SCOPE OF THE ASSESSMENT

10.7.1. This section details the construction and operation effects that have been deemed to be potentially significant and are to be considered in further detail in this assessment. The list brings forward the effects identified in the Water Resources and Flood Risk chapter of the Scoping Report and also incorporates additional points raised by statutory consultees in the Scoping Opinion:

**Construction Phase**

- Pollution risk to waterbodies/aquifers from HGVs/construction plant or construction processes, including compromising the quality of WFD waterbodies;
- Temporary impact to the quality, flow dynamics, hydromorphological properties and hydraulic capacity of watercourses crossed by the Project;
- Temporary impact to groundwater levels and flows associated with dewatering of below ground excavations; and
- 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.

**Decommissioning Phase**

- Pollution risk to waterbodies/aquifers from HGVs/construction plant associated with works required for decommissioning activities;

**Operational Phase**

- Flood risk to third parties associated with the crossing of watercourses and location of poles required for the OHL section of the Project located in flood zones.

## 10.8 EMBEDDED MEASURES

10.8.1. This section offers a summary of the measures recommended to be embedded into the construction and detailed design of the Project. The measures suggested are deemed to be proportionate and necessary to mitigate against the potentially significant impacts that are detailed in Section 10.10 and Section 10.11.

### CONSTRUCTION MITIGATION MEASURES

10.8.2. An CEMP is to be submitted alongside this draft EIA Report. The CEMP will contain principles to be carried forward in order to mitigate potentially significant impacts to surface water and groundwater receptors within the study area. The CEMP will refer to a number of industry standard best-practice guidance documents, which will include the following:

- GPP 1: Understanding Your Environmental Responsibilities;
- GPP 5: Works and Maintenance in or Near Water;
- GPP 21: Pollution Incident Response Planning; and
- GPP 22: Dealing with Spills.

10.8.3. The following is a list of mitigation measures recommended for inclusion in the CEMP:

- Existing access tracks will be used to transport construction materials to and from the compound;

- The method of works will consider the potential for impacts to Water Environment and Flood Risk receptors, particularly where works are undertaken within 10m of a surface water feature;
- Buffer strips and silt mitigation should be installed where works are within 10m of a surface water feature;
- Where possible, topographical gradients should be kept as shallow as possible in order to minimise the risk of watercourse contamination from silt runoff;
- Surface water runoff should be captured at source and disposed of in accordance with best-practice guidance and allocated permits;
- The refuelling of construction and maintenance vehicles should be undertaken in a controlled area with measures in place to prevent spillages from contaminating surface water and groundwater resources, such as drip trays and bunds, if necessary;
- Regular visual inspection of watercourses in close proximity of current works should be undertaken to monitor changes to discolouration and identify increased sediment loading;
- Those conducting the works should have an understanding of the hydraulic connectivity of the site, including the watercourses and urban drainage networks, to ensure work can be undertaken in such a way that minimises pollution to sensitive water features;
- A permit may be required for the abstraction and discharge of water should dewatering of excavations be required during installation of the Project. Consultation with NRW is recommended once groundwater levels are better understood following ground investigation; and
- Any discharge of groundwater to receiving watercourses should be passed through appropriate treatment for sediment removal prior to discharge. Water should not be discharged during periods of high flow in receiving watercourses to reduce the risk of downstream flood risk.

10.8.4. The principles recommended within the CEMP submitted alongside the ES should be used by the appointed contractor to inform location-specific method statements. At minimum it is recommended that location-specific method statements are prepared for the open cut installation of the UGC adjacent to the Nant y Ffyllon in the Pen-y-lan area of Nantyffyllon; and for the open cut crossing of the Nant Sychbant.

10.8.5. Method statements should be developed in consultation with the LLFA.

10.8.6. The open cut installation of UGC adjacent to the Nant y Ffyllon must ensure tight control of site boundaries to manage the risk of increased sediment loading within the watercourse. Groundworks should also be located a minimum of 10m from the top of bank of the watercourse to reduce risk to bank stability and allow for natural geomorphological processes.

10.8.7. The open cut crossing of the Nant Sychbant must ensure hydraulic connectivity is maintained throughout the duration of the works and that flows are effectively managed (including measures and capacity to manage flood flow events), that appropriate pollution measures are in place, and that the watercourse is reinstated to its pre-development state immediately following completion of the works. The details of installation should be agreed with the LLFA but are likely to require cables be located a minimum of 1.5m below the bed of the watercourse and for a distance of 5m beyond each bank, Consideration must also be given to localised scour at the outfall of any proposed over pumping/diversion and risk of increased sedimentation within the channel. Localised silt management measures may be required within the channel. NRW has indicated it holds several

hydraulic models that may be of use to inform the detailed design of the construction working method statement.

10.8.8. Consultation with the LLFA is required to understand consenting requirements for works within 7m of Ordinary Watercourses. Consultation is also recommended to understand any potential issues with culvert condition within areas of proposed construction of the Project.

10.8.9. Further consultation with DCWW is recommended to avoid potential clashes with sewerage infrastructure during the installation of the Project.

### OPERATION MITIGATION MEASURES

10.8.10. Proportionate measures for protection of flood risk receptors through the operational phase of the scheme are as follows:

- The location of poles will be considered through detailed design to ensure they are located a minimum of 10m from the top of bank of all watercourses and outside high-risk flood zones, while understanding there are a number of engineering design requirements that will also need to be satisfied through detail design.

### DECOMMISSIONING MITIGATION MEASURES

10.8.11. Potential for adverse impacts during decommissioning are expected to be limited as all UGC will be left in-situ. Impacts associated with the removal of above ground infrastructure are likely to be similar to those identified in the construction phase. The general mitigation measures discussed for the construction stage are therefore recommended for the decommissioning phase.

## 10.9 ASSESSMENT METHODOLOGY

10.9.1. The assessment of potential impacts to water resources and flood risk from the Project has been undertaken in accordance with the legislation. Policy and guidance summarised in Section 10.3.

10.9.2. The overarching approach to completion of the Water Resources and Flood Risk assessment is as follows:

- Consultation with relevant bodies to confirm the guiding principles of the assessment and hydrology issues to be considered;
- Consultation with NRW, 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

10.9.3. The identification of potentially significant impacts on Water Resources and Flood Risk receptors within the Study Area broadly follows 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 out within the DMRB guidance provide a good basis for assessing effects of developments on the water environment and flood risk.

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

- Estimating the importance of the hydrology receptor (**Table 10-4**);
- Estimating the magnitude of the impact (**Table 10-5**); and
- Assessing the significance of the effect on the hydrology receptor (**Table 10-6**).

10.9.5. The significance of the effect resulting from the Project has been 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 have been evaluated assuming that identified mitigation measures are fully implemented.

10.9.6. The Water Resources and Flood Risk assessment is 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 (NRW), Environment Agency (EA), 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 10-4 - Criteria for estimating the importance of Water Resources and Flood Risk 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.<br>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.<br>Regionally important public water supplies.<br>Groundwater locally supports GWDTE.<br>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 and rarity | Aquatic environment | Watercourse having a WFD classification shown in a RBMP and Q95 <1.0m3/s. |

| | | | |
|---|---|---|---|
| | 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.<br>Principal aquifer providing locally important resource or supporting a river ecosystem.<br>Groundwater supports GWDTE.<br>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.<br>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.<br>Aquifer providing water for agricultural or industrial use with limited connection to surface water.<br>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.<br>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 | Aquatic environment | Receptor water body: relevant WFD elements* at poor status/potential. |

| | | | |
|---|---|---|---|
| | quality at a local scale, with a high potential for substitution | | Minor water features such as ditches, not classified as a WFD river water body.<br>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.<br>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 10-5 - Criteria for estimating the potential magnitude of an impact on a Water Resources and Flood Risk 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).<br>Loss or extensive change to a fishery.<br>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;<br>▪ Loss of, or extensive change to, an aquifer.<br>▪ Loss of regionally important water supply.<br>▪ Potential high risk of pollution to groundwater from routine runoff.<br>▪ Loss of, or extensive change to GWDTE or baseflow contribution to protected surface water bodies.<br>▪ Reduction in water body WFD classification.<br>▪ 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.<br>Increase in peak flood level (> 100mm). |

| | | | |
|---|---|---|---|
| Medium | Affects the integrity of the attribute, or loss of part of an attribute. | 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.<br>(including downgrading of individual WFD supporting elements or ability to achieve future WFD objectives).<br>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:<br>▪ Partial loss or change to an aquifer.<br>▪ Degradation of regionally important public water supply or loss of significant commercial/ industrial/ agricultural supplies.<br>▪ Potential medium risk of pollution to groundwater from routine runoff.<br>▪ Partial loss of the integrity of GWDTE.<br>▪ Contribution to reduction in water body WFD classification.<br>▪ 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<br>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;.<br>▪ Potential low risk of pollution to groundwater from routine runoff.<br>▪ 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<br>Increase in peak flood level (> 10mm). |
| Negligible | Results in little change to feature, | Aquatic environment | Limited measurable deterioration in river flow regime, morphology or water quality and limited |

| | | | |
|---|---|---|---|
| | with insufficient magnitude to affect its use/integrity | | 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.<br>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. |

10.9.7. **Table 10-6** 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'.

10.9.8. 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.

10.9.9. Effects can either be positive or negative.

**Table 10-6 – Level of Effect**

| | | Magnitude of Impact | | | | |
|---|---|---|---|---|---|---|
| | | **High** | **Medium** | **Minor** | **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) |

## 10.10 ASSESSMENT OF EFFECTS

### CONSTRUCTION PHASE

10.10.1. **Table 10-7** below summarises the potentially significant impacts to surface water, groundwater and flood risk receptors resulting from the Project through the construction phase of works.

**Table 10-7 – Construction phase assessment of likely significant impacts**

| Receptor | Importance of Receptor | Effect | Magnitude of Potential Impact | Significance of Impact |
|---|---|---|---|---|
| **Surface Water Receptors** | | | | |
| Afon Llynfi | High | Pollution risk from increased sediment | There is potential for sediment to enter the Afon Llynfi due to the increased HGV traffic in urban and rural areas through the 9 month construction phase. This is particularly true along the primary and secondary routes through Maesteg and Nantyffyllon, where HGVs would be at their closest to the watercourse, coming as close as 150m to the watercourse in Nantyffyllon. Due to the hilly topography and many of the watercourses within the Study Area ultimately outfalling into the Afon Llynfi, there is potential for sediment from open cut installation, installation of OHL poles and HGVs to enter tributaries and other rivers and eventually enter the Afon Llynfi as a result of hydraulic connectivity of the watercourse network.<br><br>Embedded mitigation measures will be in place to manage the construction phase impacts. The majority of works are within existing highway corridors or located more than 10m form watercourses. Existing drainage systems serving built up urban areas will also provide protection from additional silt dispersal associated with HGV movements. Minor amounts of silt could enter via hydraulic connectivity of associated tributaries. Therefore, the magnitude has been deemed to be **Negligible** as the works are deemed to results in little change to the Afon Llynfi with insufficient magnitude to affect its use/integrity. | Slight (**Not Significant**) |

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| Afon Llynfi | High | Increased pollution risks from spillage of fuels or other harmful substances | HGVs are proposed to travel to the construction compound via the primary construction route along A4063, starting from the south, with the construction compound being located over 1.5km to the west of the Afon Llynfi. At the time of writing, it is assumed that re-fuelling will take place at SRN to the south and also at the proposed construction compound located at Foel Trawsnant. Additionally, the refuelling of HGVs will be undertaken in controlled conditions as outlined in Section 10.8 including drip trays and bunds. Appointed contractors will also be aware of the hydraulic connectivity of the watercourses in the Study Area and the potential for impacts to sensitive water environment receptors. It is expected that adequate safeguarding measures will be in place.<br><br>Based on the scheme information available at the time writing, spillages resulting from OHL or UGC works are considered to be unlikely  There is potential for some residual spillages from HGVs but nothing that would be expected to lead to a significant impact on the Afon Llynfi.<br><br>Therefore, the magnitude of impacts to the Afon Llynfi from spillages are expected to be **Negligible** as the works are deemed to result in little change to the Afon Llynfi with insufficient magnitude to affect its use/integrity.. | Slight (**Not Significant**) |
| Afon Cynffig (Kenfig) | High | Pollution risk from increased sediment and increased pollution risks from spillage of fuels or other harmful substances | The magnitude of the impact to the Afon Cynffig is deemed to result in **No Change**. Although the watercourse is within the Study Area, its distance from the OHL section of the Project indicates that no significant impacts are expected. | Neutral (**Not Significant**) |
| Ffrwd Wyllt | High | Pollution risk from increased sediment | Although the headwaters for this watercourse are within the Study Area, the distance of the watercourse from the | Neutral (**Not Significant**) |

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| | | and increased pollution risks from spillage of fuels or other harmful substances | Project suggests no significant impacts are expected and the magnitude has subsequently been deemed to result in **No Change**. | |
| Afon Afan | High | Pollution risk from increased sediment and increased pollution risks from spillage of fuels or other harmful substances | Although the headwaters for this watercourse are within the Study Area, the distance of the watercourse from the Project suggests no significant impacts are expected and the magnitude has subsequently been deemed to result in **No Change**. | Neutral (**Not Significant**) |
| Nant y Ffyllon | Medium | Pollution risk from potentially contaminated sediment | There is a section of proposed open cut works, approximately 300m in length, to install the UGC that runs parallel to the Nant y Ffyllon to the west of Nantyffyllon. The inclusion of recommended mitigation will reduce the risk of increased sediment loading but the proximity of the works suggests some increase could occur.<br>Due to the close proximity of the works to the watercourse a **Minor** magnitude of impact is considered appropriate. | Slight (**Not Significant** |
| Nant y Ffyllon | Medium | Increased pollution risks from spillage of fuels or other harmful substances | The proximity of open cut installation of the UGC adjacent to this watercourse increases the risk of a pollution incident affecting the watercourse, however, adherence to good site practice should be sufficient to manage potential risk.<br>The magnitude of impacts to the Nant y Ffyllon from spillages are expected to be **Negligible** with the implementation of good site practices. | Neutral (**Not Significant**) |
| Nant Sychbant | Medium | Pollution risk from increased sediment | The Project will cross the Nant Sychbant via an open cut method. Construction information at the time of assessment suggests a temporary dam will be installed to | Slight (**Not Significant** |

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| | | | facilitate construction of the trench with hydraulic connectivity maintained throughout the duration of the works. The CEMP recommends that the method statement for the works is developed in consultation with the LLFA.<br><br>The inclusion of recommended mitigation will reduce the risk of increased sediment loading but the proximity of the works suggests some increase could occur.<br><br>Due to the close proximity of the works to the watercourse a **Minor** magnitude of impact is considered appropriate. | |
| Nant Sychbant | Medium | Increased pollution risks from spillage of fuels or other harmful substances. | The proximity of open cut installation of the UGC within this watercourse increases the risk of a pollution incident affecting the watercourse, however adherence to good site practice should be sufficient to manage potential risk. The use of the temporary dam will also assist in containment of potential pollution incidents.<br><br>The magnitude of impacts to Nant Sychbant from spillages are expected to be **Negligible** with the implementation of good site practices. | Neutral (**Not Significant**) |
| Nant Sychbant | Medium | Temporary impact to the quality, flow dynamics, hydromorphological properties and hydraulic capacity. | Hydraulic connectivity of the watercourse will be maintained throughout the duration of the open cut installation of the UGC. The CEMP recommends that the method statement for the works is developed in consultation with the LLFA. There will however be a temporary change to the flow dynamics and hydromorphological properties during the construction phase. It is expected that the watercourse will return to baseline conditions within a year of construction as the works are localised and do not require realignment of the channel. | Moderate (**Potentially Significant**) |

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| | | | The magnitude of potential impact has been assessed to be Medium as the works will affect the integrity of the watercourse, however this is a short term temporary impact. | |
| Ordinary watercourses that are crossed by the UGC sections of the Project or located within the wider Study Area | Low to Medium | Pollution risk from increased sediment and increased pollution risks from spillage of fuels or other harmful substances | With the exception of the Nant y Ffyllon and Nant Sychbant discussed above, the proposed crossing of other watercourses will be within existing highway infrastructure through Nantyffyllon and to the west of Maesteg and, as such, impacts are not expected to be significant with the inclusion of good site practice measures.<br>The magnitude of impacts from sediment loading and spillages are expected to be **Negligible** as the works are deemed to result in little change to the watercourses with insufficient magnitude to affect their use/integrity | Neutral (**Not Significant**) |
| Ordinary watercourses that are crossed by the OHL sections of the Project or located within the wider Study Area | Low to Medium | Pollution risk from increased sediment and increased pollution risks from spillage of fuels or other harmful substances | The greatest risks are likely to be associated with the installation of OHL poles, the location of primary and secondary access tracks used by HGVs and the construction compound within the Study Area. Whilst there is potential for sediment and spillages to enter the watercourses, mitigation recommended in the CEMP and the location of poles more than 10m from watercourses.<br>The magnitude of impacts from sediment loading and spillages are expected to be **Negligible** as the works are deemed to result in little change to the watercourses with insufficient magnitude to affect their use/integrity | Neutral (**Not Significant**) |
| **Groundwater Receptors** | | | | |
| Secondary Undifferentiated and Secondary A | Medium | Impacts to groundwater quantity and water quality | The depth to groundwater is uncertain although the presence of springs within the study area indicates that groundwater levels may be high. Localised dewatering | Neutral (**Not Significant**) |

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| Superficial Aquifers and Secondary A and B Bedrock Aquifers, including licensed and unlicensed Groundwater Abstractions | | | during installation of the UGC sections of the Project may be required although the majority of UGC will be located within existing highway infrastructure. Foundations required for OHL poles are expected to be between 2-3m below ground level. The location of groundwater abstractions is currently unknown and will be investigated, although any impacts are expected to be short term, localised and minimal, with no long-term impacts to natural groundwater levels or groundwater springs.<br><br>Potential pollution risk from spillages are considered significant with the inclusion of recommended mitigation and good site practice.<br><br>The magnitude of impact is expected to be **Negligible** as the works are deemed to result in little change to groundwater resources with insufficient magnitude to affect their use/integrity | |
| **Flood Risk Receptors** | | | | |
| Flood risk receptors including critical infrastructure and urban areas | Low to Very High | 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 | Review of desk-based sources of flood risk data indicates the Project is located outside of the mapped fluvial/tidal flood extents with the exception of the Nant Sychbant. Similarly all installation of the UGC sections of the Project are within the alignment of existing highway infrastructure with the exception of the Nant Sychbant and Nant y Ffyllon.<br><br>Poles required to support the OHL sections of the Project will be located more than 10m from watercourses (where practicable subject to detailed design), with works within 7m recommended to be discussed with the LLFA. At the time of preparing this assessment it is understood that no new access tracks will be required that will cross identified watercourses or overland flow routes. The proposed | Crossing of Nant Sychbant: Large **(Significant)**<br><br>Remainder of Project: Slight (**Not Significant**) |

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| | | | construction compound is also not located within an area of flood risk. The installation of OHL sections of the Project and proposed construction compound is therefore not expected to interact with mapped flood extents.<br><br>The construction of the open cut installation of UGC adjacent to the Nant y Ffyllon is recommended to remain a minimum of 10m from the top of bank of the watercourse.<br><br>The open cut crossing of the Nant Sychbant will require installation of a temporary dam. Hydraulic connectivity will be maintained and it is recommended that the capacity takes into account management of flood flow events. Should the capacity of the diversion be exceeded, flood waters would likely pose risk to the local road adjacent to the proposed works. It is recommended that appropriate traffic management measures are discussed with the LLFA as part of the consenting process, for example the inclusion of appropriate signage to warn drivers of the risk or temporary closure of the road with the exception of local access.<br><br>The magnitude of potential impact to high sensitivity receptors (such as critical infrastructure and urban areas) is considered to be **Negligible** as the works are not considered to increase flood risk during construction.<br><br>The magnitude of potential impact to the minor road adjacent to the Nant Sychbant is considered to be **High** given the potential for localised and temporary increase in flood risk. This could be reduced once further details of the proposed construction method are known and mitigation agreed with the LLFA. | |

## OPERATION PHASE

10.10.2. **Table 10-8** below summarises the potentially significant impacts to surface water, groundwater and flood risk receptors resulting from the Project through the operational phase of works.

**Table 10-8 – Operation phase assessment of likely significant impacts**

| Receptor | Importance of Receptor | Effect | Magnitude of Potential Impact | Significance of Impact |
|---|---|---|---|---|
| **Flood Risk Receptors** | | | | |
| Flood risk receptors including critical infrastructure and urban areas | Low to Very High | Increase in flood risk associated with watercourse crossings and location of permanent infrastructure in areas identified to be at fluvial and surface water flood risk | Review of desk-based sources of flood risk data indicates the Project is located outside of the mapped fluvial/tidal flood extents with the exception of the Nant Sychbant. Similarly all installation of the UGC sections of the Project are within the alignment of existing highway infrastructure with the exception of the Nant Sychbant and Nant y Ffyllon.<br><br>Poles required to support the OHL sections of the Project will be located more than 10m from watercourses (where practicable subject to detailed design), with works within 7m recommended to be discussed with the LLFA. The installation of OHL sections of the Project is therefore not expected to interact with mapped flood extents.<br><br>The construction of the open cut installation of UGC adjacent to the Nant y Ffyllon is recommended to remain a minimum of 10m from the top of bank of the watercourse and will result in no change to existing ground level when reinstated.<br><br>The open cut crossing of the Nant Sychbant will require installation of a temporary dam. On completion of the works the watercourse will be reinstated as existing with no change to channel capacity. | Slight (**Not Significant**) |

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| | | | The magnitude of potential impact to all flood risk receptors is considered to be **Negligible.** | |

### DECOMMISSIONING PHASE

10.10.3. Underground cables will be left in-situ at the end of the operational phase of the Project. Above ground infrastructure will be removed. Potential impacts to surface water and groundwater resources are expected to be limited to risks of increased sediment loading and increased with of pollution from HGVs/construction plant or construction processes.

10.10.4. As discussed in the assessment of construction impacts, good site practice including control of site boundaries will limit the risk of pollution. The magnitude of impacts from sediment loading and spillages are therefore expected to be **Negligible** as the works are deemed to result in little change to the watercourses with insufficient magnitude to affect their use/integrity. The significant of impact is therefore assessed to be **Neutral (Insignificant)** for all surface water features and groundwater resources.

## 10.11 ASSESSMENT OF CUMULATIVE EFFECTS

10.11.1. A cumulative effect is an effect whereby a water environment or flood risk receptor within the Study Area of the Project is expected to experience simultaneous significant impacts from multiple schemes over the 9 month construction period or the duration of the operational phase.

10.11.2. There are a number of relevant developments located within the Study Area. A summary of these proposals is provided in **Table 10-9** below, as well as a spatial representation being shown in **Figure 2.1**.

**Table 10-9 – Summary of potentially significant developments within the Study Area of the Project**

| Planning Authority Area | Ref. | Summary of Development | Planning Decision | Distance from Project | Potential for Cumulative Impacts |
|---|---|---|---|---|---|
| Neath Port Talbot Council | P2022/0517<br>P2022/0344 | Wind Farm associated with Project - consisting of 11 turbines with a maximum tip height of 145m | Approved | The Project enters the Site from the southeast. | **Low** potential – Not significant.<br>A spatial crossover in development footprints is acknowledged and has been considered for cumulative impacts. The construction compound is proposed to be located at the north of the Project where lots of HGV movement, re-fuelling / re-stocking and storage are proposed to be undertaken.<br>The significance of potential impacts will depend on the scope of activity in the southeast of the Wind Farm development. Embedded mitigation measures are expected to sufficiently mitigate anticipated impacts to the water environment and flood risk receptors, and therefore the potential for cumulative impacts is considered to be **Low**. |
| Bridgend County Borough Council | P/23/621/APN | Prior notification for a new building to store hay and farm machinery. | Approved | <0.1km (bounds the proposed pathway to the east. | **Low** potential – Not significant.<br>The location of the new farm storage building is located along one of the proposed secondary construction access tracks. Therefore, an increase in HGV traffic is expected in the event of overlapping construction periods. However, a review of online mapping suggests that the nearest watercourses are >300m from the proposed storage building. |
| Bridgend County | P/23/473/RLX<br>P2020/1002 | DNS (DNS/3213662) | Approved | 5.10km west | **Negligible** due to proximity from the Project. |

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| Borough Council | P2020/0569 | for seven wind turbines. Four turbines are up to a maximum tip height of 149.9m, and three turbines are up to a maximum tip height of 130m. | | | |
| Neath Port Talbot Council | P2022/0694<br>P2022/0537 | Installation of Solar Farm, with a capacity of 3.80MW, on a former colliery soil heap between the B284 and A48 northwest of Pyle | Approved | 4.7km southwest | **Negligible** due to proximity from the Project. |
| Neath Port Talbot Council | P2024/0820<br>P2022/0776<br>P2018/0493 | Mixed-use Residential Development, comprising of 600 apartments and 100-bed hotel. | Approved | 1.8km south | **Negligible** due to proximity from the Project. |
| Neath Port Talbot Council | P2024/0029<br>P2021/0057<br>P2023/0444 | DNS (P/23/319/DNS) for a Wind Farm consisting of 18 turbines with a maximum height | Awaiting decision with comments given on objections. | Approximately 0.9km west - also bounds directly to the west further up the proposed pathway. | **Low** potential – Not significant.<br>Although the Wind Farm DNS application is approximately 300m away, a comparison of proposed construction compound and access track locations suggest the potential for cumulative impacts is **Low**. It is deemed to be a |

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| | | ranging between up to 206m, up to 203m, and up to 250m to blade tip. | | | sufficient distance away from construction phase infrastructure and the proposed OHL section pole locations. |
| Bridgend County Borough Council | P/12/877/BCB | Create Wildlife & Sustainable Urban Drainage Scheme Ponds to Enhance the Ecological Potential of The Welfare Park. | Approved | Approximately 0.3km east. | **Low** to **Medium** potential – Potentially significant.<br>The new ponds are located adjacent to a perpendicular turning on the primary construction access route and also a section of the UGC. All of these works are being undertaken in the immediate vicinity of the Nant y Crynwydd and what appears to be a culvert.<br>Embedded mitigation measures are expected to sufficiently mitigate potential impacts along the primary construction access track and through the laying of the underground cabling. It is acknowledged, however, that there could be potential for cumulative impacts based on close proximity of works and that the works are to be undertaken close to the Nant y Crynwydd which then outfalls into the Afon Llynfi approximately 100m upstream. |
| Bridgend County Borough Council | P/16/291/FUL | Creation Of Community Wood- Land on Reclaimed Colliery & Washery & Tip Site, Inc Tree Planting Create Infrastructure. | Approved | Approximately 4km northwest. | **Negligible** due to proximity from the Project. |
| Neath Port Talbot Council | P2023/0638 | DNS (DNS/3255801) | Approved | 3.42km | **Negligible** due to proximity from the Project. |

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| | | for 6 wind turbines, with a maximum tip height of 200m, a solar photovoltaic array, battery storage facilities, together with associated and ancillary development include a control building, electricity transformers and anemometry mast, grid connection, access works, temporary construction compound and associated works. | | | |
| Bridgend County Borough Council & Neath and Port Talbot | P/16/128/FUL<br>P/22/795/DOC | Alternative restoration & aftercare scheme inc. pumping, earthworks, soil relocation, rights of way. | Awaiting decision | 3.62km south | **Negligible** due to proximity from the Project. |

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| Bridgend County Borough Council | P/23/206/OBS | DNS (DNS CAS-01977-L5K6R7) for a Solar Farm and Energy storage - 79mw | N/A | 1.1km west | |
| Neath Port Talbot Council | P2023/0498 | DNS (DNS CAS-02430-B1L0D2) for a proposed 50 MW ground mounted photovoltaic solar farm with associated equipment, infrastructure, grid connection and ancillary works. | Considered to be EIA. | 4.82km west | **Negligible** due to proximity from the Project. |
| Bridgend County Borough Council | P/19/915/RES | Residential Development of 405 units. | Conditional Consent (reserved matters) | 4.9km southeast | **Negligible** due to proximity from the Project. |

## 10.12 MITIGATION AND RESIDUAL EFFECTS

### MITIGATION MEASURES

10.12.1. This section outlines additional mitigation measures beyond those that are required to be embedded from the outset. It should be noted, however, that the identification of additional mitigation measures will be an ongoing process with the measures being proposed in the final EIA Report.

10.12.2. The measures proposed in this section are deemed to be proportionate based on the scheme information that has been made available to us at the time of writing. However, a number of consultations with statutory and non-statutory stakeholders are yet to be undertaken where additional constraints / potential impacts may be discovered. On this basis, the list of mitigation measures will be added to accordingly as the ES progresses.

**Construction Phase**

10.12.3. Suggested additional mitigation measures through the construction phase of the Project are listed below:

- Where necessary, use barriers to adequately capture sediment to allow for disposal in-line with CEMP and OWC requirements, including at the location of temporary dam use;
- Upstream and downstream water quality sampling to be undertaken to gauge potential adverse impacts to the quality of receiving waterbodies, in particular WFD waterbodies;
- Consideration of Phase 1 Ground Investigation data when it comes to incorporating mitigation measures into the contractor's method statement, for example providing adequate lining of underground infrastructure at locations where a shallow water table is discovered to mitigate against groundwater receptor contamination; and
- Have discussions with contractor undertaking works on the Welfare Park project (P/12/877/BCB) to discuss and sufficiently mitigate against the potential for cumulative impacts through the construction phases of both projects.

**Operational Phase**

10.12.4. At the time of writing, no additional mitigation measures have been identified for the operational phase of the Project. This will be subject to ongoing considerations as the ES develops and further consultations are undertaken.

### RESIDUAL IMPACTS

10.12.5. Following the implementation of embedded mitigation measures along with the additional mitigation measures outlined above, the potential for residual impacts is deemed to be **Neutral** – **Minor** and therefore are not deemed to be significant. On top of the mitigation measures outlined in this ES Chapter, there is scope for additional measures to be included within the CEMP and method statement.

## 10.13 CONCLUSIONS OF SIGNIFICANCE EVALUATION

10.13.1. The assessment of Water Environment and Flood Risk impacts within this draft ES Chapter identified the following potentially significant impacts through the construction phase of the Project:

- Pollution risk from potentially contaminated sediment to the Afon Llynfi;
- Increased pollution risks from spillage of fuels or other harmful substances to the Afon Llynfi;
- Increased pollution risk to the Nant y Ffyllon;
- Impacts from temporary dam works for UGC installation to the Nant Sychbant watercourse;
- Impacts to groundwater quantity and water quality to WFD groundwater bodies; and
- Cumulative impacts with the ecological enhancement scheme at the Welfare Park approximately 0.3km to the east of the Project.

10.13.2. Following the identification of these potentially significant impacts, additional mitigation measures beyond the embedded mitigation measures were proposed in Section 10.12. The additional measures are expected to sufficiently mitigate the potential Water Environment and Flood Risk risks.