Tintern Wireworks Bridge

Habitats Regulations Assessment Stage 1 Screening and Stage 2 Appropriate Assessment

Gloucestershire County Council

January 2022

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This document has 62 pages including the cover.

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1.0	Draft for client comment	HW/EB	JL	AW	FN	10/12/2021
Rev 2.0	Draft for client comment	HW/SD	JL	AW	FN	17/01/2022

Client signoff

Client	Gloucestershire County Council
Project	Tintern Wireworks Bridge
Job number	5201042.006
Client signature/ date	

Contents

1. Introduction

1.1. Terms of Reference

Atkins Limited, member of the SNC Lavalin group, has been appointed by Gloucestershire County Council (GCC) to provide a Habitats Regulations Assessment (HRA) Stage 1 Screening and Stage 2 Appropriate Assessment (AA) report for proposed works to repair and refurbish Tintern Wireworks Bridge in Tintern, Gloucestershire.

Tintern Wireworks Bridge is located at Ordnance Survey National Grid Reference (OSNGR) SO 53012 00294 (hereafter referred to as 'the Scheme') and is shown on the General Arrangement Plan in **Appendix A**.

This assessment has been undertaken using the guidance provided in the Design Manual for Roads and Bridges (DMRB) LA 115 Habitats Regulation Assessment.

This document has been produced in order for the Competent Authority (Gloucestershire County Council) to assess whether the Scheme would be likely to result in any likely significant effect on any European Sites, as required by the Conservation of Habitats and Species Regulations 2017 (as amended), (hereafter referred to as 'the Habitats Regulations'). No planning permission is required for the Scheme and no Ecological Impact Assessment (EcIA) is being produced for the Scheme.

A European site or European offshore marine site is defined within Regulation 8 of the Habitats Regulations as:

- a Special Area of Conservation (SAC)[1];
- a Special Protection Area (SPA)[2]; and
- a European site so far as consisting of marine areas.
- National Planning Policy Framework (NPPF)[3],ODPM Circular 06/2005[4] Planning Policy Wales and Planning (Wales) Act 2015 state that listed or proposed Ramsar sites[5], potential Special Protection Areas (pSPA) and possible Special Areas of Conservation (cSAC), and sites identified, on which the Government has initiated public consultation on the scientific case for their designation, should also be considered European sites. Hereafter all of the above designated nature conservation sites are referred to as 'European sites'.
- Note that this document uses the original terms for features such as European Sites and refers to the legislation that was current when they were designated. However, it is recognised that the Conservation of Habitats and Species Regulations 2017 are now amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

1.2. Scheme Description

Tintern Wireworks Bridge, in Tintern, Gloucestershire carries an un-named public footpath, across the River Wye. The five-span bridge measures approximately 85 m in length and 4 m in width and is supported by stone abutments.The decking of the bridge comprises wooden planks and carries a public footpath.

The scheme aims to fully refurbish the bridge to full working capacity while retaining its historical Grade II listed status. On site repair methods and new design elements will be utilised to ensure forward going longevity in a sustainable manner. The works will include strengthening of abutments with pattress plate/ rod system, grit blasting and painting of the existing girders, installation of a new primary deck system including steel beams, deck panels and bearings, and the associated access to achieve this. Tintern Wireworks bridge will be fully refurbished on site to return the bridge to full working capacity. On site repair methods and new design elements will be utilised to ensure forward going longevity in a sustainable manner.

The estimated timescale of construction is up to 9 months with anticipated completion before Christmas 2022. It is likely that number of activities can be done concurrently.

The likely phasing is as follows:

1. Mobilisation and site set up (Approximately 2 weeks);

[1] Sites protected under the Conservation of Habitats and Species Regulations 2017 (as amended)
[2] Sites protected under the Conservation of Habitats and Species Regulations 2017 (as amended)
[3] https://www.gov.uk/guidance/national-planning-policy-framework
[4] attps://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf
[5] Sites protected under Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (the Ramsar Convention).

2. Enabling works (including excavation, backfill and installation of the pattress plate/rod system to the west abutment and wingwalls) (Approximately 4 weeks);
3. Installation of suspended temporary works platform and encapsulation (Approximately 4 weeks);
4. Removal of the existing deck, preparation of abutment/piers and install bearings (Approximately 4 weeks);
5. Installation of new steel beams for the new deck system (Approximately 4 weeks);
6. Grit blasting and re-painting of the steel work (Approximately 4 weeks);
7. Installation of a new timber panels (Approximately 4 weeks);
8. Masonry repairs and repointing can be undertaken concurrently with other activities (Approximately 4 weeks);
9. Demobilisation from site and close out (Approximately 4 weeks).

The Construction Programme is shown in **Appendix B**.

1.2.1. Details of proposed operations:

The proposed operations for Tintern Wireworks bridge entail the full refurbishment and strengthening of the bridge. This includes the following operations and associated works:

1. Mobilisation - Set up of site including welfare provision

Set up of the site compounds and welfare provisions will include a small office, associated welfare facilities (i.e., canteen, lavatories, clean down unit), a small lay down area for material (suitable fenced off to prevent unauthorised access) and parking for the workforce.

The welfare facilities are proposed to be placed in the Wireworks car park off of Forge Road, and the areas to the ingress/ egress points of the bridge. The compounds will be placed on existing hard surfaces, set back at least 10 m from the River Wye, posing minimal impact to the River Wye/ Afon Gwy SAC and Site of Special Scientific Interest (SSSI).

For reference locations of the site compounds, refer to General Arrangement Plan **Appendix A**.

2. Enabling works - Excavation of West abutment for strengthening operations

Excavation of the West abutment (Monmouthshire side of the bridge) will be undertaken utilising careful methods of digging via hand digging and a small excavator in areas where possible. The works will be confined between the existing wing walls and abutment as seen in Figures 1 and 2. As such, the material will be removed within a very controlled environment to a licensed disposal facility with minimal risk of any debris egressing the surrounding environment.

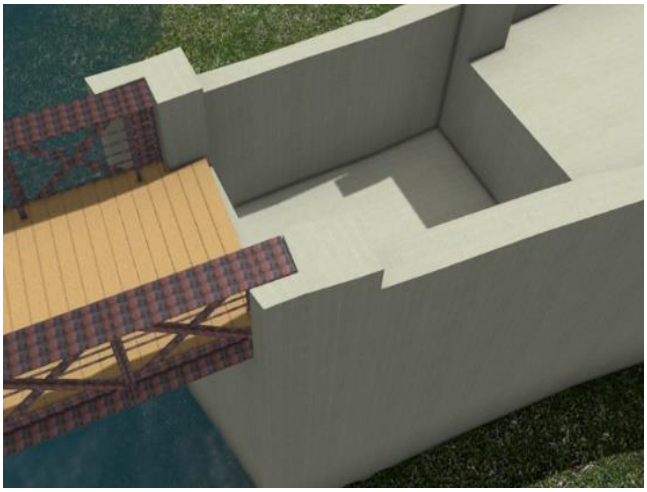

Figure 1 – Indicative visualisation of excavation for strengthening (left); and Figure 2 - plan outlining proposed excavation location (right).

Vehicles, removing the material from site will be managed using standard industry practices such as sheeting lorries to prevent egress of materials to the local environment as shown in Figure 3.

Figure 3 – Example of sheeting on lorries for removal of excavation material.

3. Enabling works - Backfill of West abutment with designed backfill materials

Back fill material for the abutment is proposed to be mass concrete which will enable the work to be undertaken simply and effectively while giving a long whole life solution for the future. This will be delivered using offsite cement mixer lorries (see examples in Figure 4) which will discharge carefully and directly into the excavation. The excavation is confined within the wingwalls and abutment wall and will be checked to ensure that it is secure, and that material cannot breach any nearby watercourse or adjacent land.

Figure 4 – Example of cement mixer lorries expected to be used.

4. Installation of pattress plate/rod system through the wingwalls and abutment

Installation of pattress plate/ rod system in this location is proposed to take place from either side of the west wingwalls and abutment fixed in place and then the concrete backfilled.

It is expected that access to the pattress plates (see Figure 5) will be by rope access or via temporary works platform if required. This would be placed on either side of the wing walls and abutment (both north and south of the west end of the structure) to facilitate access and or drilling for the pattress plate system to be placed (see Figure 6).

Any material exposed will be contained, bagged and removed from site to licenced waste disposal.

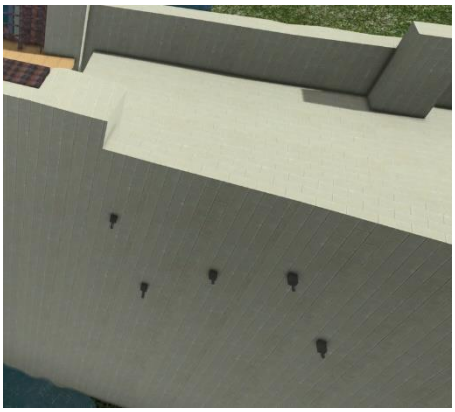


Figure 5 – Proposed visualisation of the pattress plate system (left- plates are not shown); and Figure 6 - examples of proposed method of works (right)

5. Installation of access arrangements for the bridge to the full width, including a suspended temporary works platform

Access to the deck will be via a full access solution so that the whole deck can be accessed from below thereby allowing a full encapsulation of work areas protecting the local environment from the necessary operations.

Using a suspended access system is proposed to ensure that no access is required from the watercourse or on adjacent land.

All efforts to localise the access arrangements to ensure materials are kept within the confines of the bridge plan area will be taken.

6. Encapsulation of the bridge from the access deck to enable grit blasting and painting of the deck to prevent any material entering the River Wye

As works are to be carried out over water, especially in the case of such a sensitive area, the environment will be protected through full encapsulation of the structure during blasting and painting operations.

Encapsulation is an operation that is standard practise within the industry and examples of its use can be seen in Figure 7 and 8. To note, in the case of the proposed works on Tintern Wireworks Bridge, the temporary works are not proposed to enter the watercourse.

Figure 7 – Examples of encapsulation of a bridge over a watercourse

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Figure 8 – Examples of encapsulation of a bridge over a watercourse.

7. Removal of existing timber bridge deck

The existing timber deck will be removed from the bridge, ensuring all movements will be in the confines of the structure and removed off site.

8. Grit blasting of existing steel work

All operations of this nature will be encapsulated as detailed in point 6 above.

A Respiratory protective equipment (RPE) check sheet will be completed on a weekly basis and the work front encapsulation will also be checked before each start of shift to ensure nothing emanates from the working area.

All personnel will suitably decontaminate and clean in units provided for that purpose. Grit blasting works are proposed to commence in September 2022.

9. Re-painting of existing steelwork

In the same way that blasting of steel work is controlled, painting will also be controlled to ensure that no paint material will be ejected from the working area into the local environment.

Again, this will be controlled by ensuring that all relevant working areas are fully encapsulated as shown in the pictures above.

10. Installation of new bridge bearings to support the longitudinal beams

This operation is within the confines of the bridge and will be undertaken from the suspended temporary access platform. The bearings are not significant in terms of weight or potential to contaminate and are therefore, minimal in terms of measures needed to control their installation. It is proposed that localised cutting of the piers/ abutment to accommodate the beams as per detailed design sketches.

There remains some level of work required to fix the bearings to the piers and the abutments, but this will be contained by the access decking in place. The piers may require alteration works including some level of stone repair and removal and replacement. This will be carried out on site using appropriate means. Any dust emanating from this operation will be controlled at source and within the confines of the access deck arrangements.

11. Installation of the new longitudinal beams

The beams are suggested to be installed via a conventional launching method or temporary system proposed by the appointed contractor. Both methods will utilise the encapsulation system to ensure no material enters the surrounding environment, and importantly the SAC and SSSI.

12. Delivery by lorry of steel bridge beams including unloading

Due to the nature of the longitudinal beams, they will need to be delivered to site. This will be by a lorry.

Vehicles are only expected to be located at the approach of the structure (from the west), therefore mitigating against any impact to the local environment or SAC and SSSI.

13. Welding of bridge beams to form continuous steel bridge beams

There will be a requirement for welding on site to connect the longitudinal beams sections together.

This will be undertaken within the confines of the access deck/ encapsulation, mitigating against any impact to the SAC and SSSI.

14. Installation of permanent deck plates and timber decking

Once again, the installation of the deck plates will be carried out within the confines of the access platform and will not present an issue for the local environment or SAC and SSSI. Hot works are not anticipated with bolted connections being used. Any timber will be pre-treated (i.e., off site).

15. Tidy and snag site works and demobilise site offices

Once the refurbishment works are complete the site will be demobilised, and any area worked on returned to its original form including making good any disturbed soil and or surface where materials or cabins have sat.

All waste materials will be returned to the contractor's premises, recycled, or disposed of to a licenced waste unit.

The proposed works are currently programmed for Spring to Winter 2022, taking place during daylight hours only.

Photographs of Tintern Wireworks Bridge and immediate surrounds are provided in **Appendix C**.

1.3. Scope of the Assessment

The requirement for HRA is described within Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (otherwise known as the Habitats Directive), which is transposed into English and Welsh law through the Habitats Regulations.

In accordance with Regulation 63(1) of the Habitats Regulations, *a competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives*.

In accordance with Regulation 64(1) of the Habitats Regulations, *if the competent authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest (which, may be of a social or economic nature), it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site or the European offshore marine site (as the case may be)*.

Based on the requirements of Article 6(3) and 6(4) of the Habitats Directive, the European Commission (2001)[6] describes four distinct stages to the HRA process. The stages of the HRA process are as follows:

- **Stage 1 – Screening**: To test whether a plan or project either alone or in combination with other plans and projects is likely to have a significant effect on a European Site;
- **Stage 2 – Appropriate assessment**: To determine whether, in view of a European Site's conservation objectives, the plan (either alone or in combination with other projects and plans) would have an adverse effect (or risk of this) on the integrity of the site with respect to the site structure, function and conservation objectives. If adverse impacts are anticipated, potential mitigation measures to alleviate impacts should be proposed and assessed;
- **Stage 3 – Assessment of alternative solutions**: Where a plan is assessed as having an adverse impact (or risk of this) on the integrity of a European Site, there should be an examination of alternatives (e.g. alternative locations and designs of development); and
- **Stage 4 – Assessment where no alternative solutions remain and where adverse impacts remain:** In exceptional circumstance (e.g. where there are imperative reasons of overriding public interest), compensatory measures to be put in place to offset negative impacts.

On the basis of the above, this document presents the findings of Stage 1 (Screening) and Stage 2 (Appropriate Assessment) to support the Competent Authority making an AA of the Scheme.

[6] European Commission. (2001) *Assessment of plans and projects significantly affecting Natura2000 sites: methodology guidance on the provision of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC. Luxembourg: Office for Official Publications of the European Communities.*

2. HRA Methodology

2.1. HRA Stage 1 Screening Methodology

The Habitats Regulations do not specify a methodology for assessment. The methods and approach used for this Screening have therefore been conducted having regard to the online publication 'The Habitats Regulations Assessment Handbook'[7], which brings together relevant law, policy, methodology, technical advice and good practice into one comprehensive updatable source.

In addition, the Highway's Agency Design Manual for Roads and Bridges (DMRB) LA 115, Habitats Regulations Assessments, (January 2020)[8] was used, as it provides comprehensive guidance on potential zones of influence when identifying sites that might be subject to impacts from road schemes. The search areas included within LA 115 are considered appropriate for this Scheme.

The approach followed for this HRA Screening can be summarised as follows:

- Identify the geographical scope for the assessment, along with the rationale for this decision;
- Identify European sites within and around the Scheme, including the qualifying features/ reason for designation, and the citation, Natura 2000 Standard Data Form, conservation objectives and supplementary advice on conservation objectives were obtained for each European site from the Natural England website[9], the Natural Resources Wales[10] website and the Joint Nature Conservation Committee (JNCC) website[11]. Condition assessment information for the underpinning Sites of Special Scientific Interest (SSSI) was obtained from the Natural England and Natural Resources Wales websites to provide important contextual information;
- Identify the nature of potential impacts arising from the project during construction and operation;
- Assess whether the project is likely to have a significant effect on conservation objectives of each European site alone and/ or in combination with other plans or projects. This involves an assessment of the likelihood of a significant effect arising from each of the impacts, in respect of each of the interest features of the European Site; and,
- For those sites where no effects are likely, report that no Likely Significant Effect (LSE) exist. If effects are judged likely or uncertainty exists, the precautionary principle must be followed, and an AA must be undertaken.

2.2. Determination of European Sites included in the HRA

With regards to determining the European Sites to include in the HRA Screening assessment, in accordance with DMRB LA 115, Screening has been completed where the Scheme:

- Is within 2 km of a European Site or functionally linked land[12];
- Is within 30 km of a SAC where bats are a qualifying feature;
- Crosses or lies adjacent to, upstream, or downstream of, a watercourse which is designated as a European Site; or
- Has a potential hydrological or hydrogeological linkage to a European Site containing a groundwater dependent terrestrial ecosystem (GWDTE).

The Multi-Agency Geographic Information for the Countryside (MAGIC) database[13] was reviewed on 1st October 2021 to establish the location of any European Sites meeting the criteria outlined above.

[7] Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook, DTA Publications Limited www.dtapublications.co.uk
[8] Design Manual for Roads and Bridges (2020). LA 115 Habitats Regulations assessment (formerly HD 44/09), Revision 1. https://www.standardsforhighways.co.uk/dmrb/search/e2fdab58-d293-4af7-b737-b55e08e045ae
[9] https://www.gov.uk/government/organisations/natural-england
[10] https://www.naturalresources.wales
[11] https://jncc.gov.uk/
[12] This is an area of land or sea outside of the boundary of a European Site that may be important in supporting the populations for which the site has been designated or classified.
[13] https://magic.defra.gov.uk/

2.3. Obtaining Information on Other Projects and Plans

In accordance with the Habitats Regulations, there is a need to consider the potential for LSE of the project or plan 'in combination' with other projects and plans. This is undertaken during screening and considers the effects of the subject project or plan in combination with other plans or projects and the significance of those cumulative effects.

Gloucestershire County Council, the district planning portals[14] and statutory bodies listed below were reviewed for information of any projects that may have been assessed for potential impacts upon the European sites identified within this assessment and, therefore, may have an in-combination effect with the Scheme.

Local Authorities

- Gloucestershire County Council;
- Forest of Dean District Council;
- Herefordshire Council; and
- Monmouthshire County Council.

Other Statutory Bodies

- Planning Inspectorate[15].

This review is considered to be sufficient to inform the in-combination assessment for the HRA of the Scheme, taking account of the localised nature of the works.

2.4. Assessing the Likely Significant Effects 'Alone' and In-combination'

Following the gathering of information on the scheme and European site an assessment has been undertaken to predict the LSE of the scheme on the European sites 'alone'. In order to inform this process, all parts of the scheme were assessed to see whether they could result in LSE on the European sites.

The potential for LSE of the scheme 'in-combination' with other projects and plans for each European site has also been considered in this HRA.

LSEs are assessed by reference to the conservation objectives of the qualifying features (interest features) of the European site. Any project or plan that causes the cited interest features of a site to fall into unfavourable condition can be considered to have an LSE on the site. Stage 1 of the HRA process does not assess effects on the integrity of European sites, this forms Stage 2 of the HRA process.

Projects or plans can adversely affect a site by:

- Causing delays in progress towards achieving the conservation objectives of the site;
- Interrupting progress towards achieving the conservation objectives of the site;
- Disrupting those factors that help to maintain the favourable conditions of the site; and,
- Interfering with the balance, distribution and density of key species that are the indicators of the favourable condition of the site.

Supplementary Advice[16] from Natural England describes the measures necessary to achieve the conservation objectives for a European site, comprising a range of ecological attributes that are most likely to contribute to the overall integrity of a European site. Based on Supplementary Advice on Conservation Objectives (SACOs), potential effects on the conservation objectives for a European site can include, but are not limited to, the following:

- Habitat loss and fragmentation – includes direct loss of habitats under the footprint of temporary or permanent works. Indirect effects through the loss of functionally linked habitats i.e., habitats that support species outside of the European site boundary;
- Species disturbance (visual, noise, vibration) – this refers to disturbance by construction, operation or decommissioning works on species that may cause behavioural effects, e.g., avoidance, change in foraging behaviour. Construction plant and machinery, earthworks, light pollution and presence of staff/ workers are all considered;

[14] https://www.gloucestershire.gov.uk/planning-and-environment/planning-applications/search-and-track-planning-applications/
[15] https://infrastructure.planninginspectorate.gov.uk/
[16] Natural England. (2015) *Conservation objectives for land-based protected sites in England: how to use the site advice* [online]. Available from <https://www.gov.uk/guidance/conservation-objectives-for-land-based-protected-sites-in-england-how-to-use-the-site-advice> (accessed November 2019).

- Changes to water quality – considers effects on species (and their prey) as a result of contamination, changes in pH, increased nutrient loads, salinity, turbidity, alterations in the thermal regime, discharges or changes in sedimentation levels;
- Changes to air quality – evaluates the risk of discharges to air, including fugitive dust and combustion emissions;
- Changes to surface and groundwater hydrology – changes to the flow, supply, availability and drainage of water, increased risks associated with flooding;
- Introduction of Invasive Non-Native Species (INNS) – the risk of introducing or spreading INNS throughout construction works;
- Recreation – direct and indirect impacts on species and habitats as a result of increased recreational use, including increased visitor numbers, dog walkers, vehicle or watercraft use and associated issues such as dog fouling, litter and anti-social behaviour (littering, vandalism and fires).

HRA is an iterative process, where necessary, suggestions can be made of how to amend the project to avoid LSE on a European site; this approach has been adopted as part of this assessment.

The precautionary principle (as enshrined in the Habitats Regulations) has been taken into account during this HRA. The precautionary principle is used when an HRA cannot objectively demonstrate that there will be no LSE on the European sites. If this occurs the subsequent stages of HRA must be completed for a project or plan.

2.5. Stage 2: Appropriate Assessment

For European sites where LSE is predicted, or it cannot be concluded that there is no LSE, an Appropriate Assessment (AA) must be undertaken. The purpose of the AA is to establish whether there are elements of the project which could have an adverse effect on the integrity of the European sites. The integrity of a European site is defined as

> "*the coherence of the site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/ or the populations of the species for which the site is, or will be, designated*"[17].

European Commission guidance on the provisions of Article 6, emphasises that site integrity involves its ecological functions and that the assessment of adverse effect should focus on and be limited to the site's conservation objectives[18].

Should any other projects or plans be identified as having a potential in-combination effects at Stage 1, these will also need to be considered at Stage 2 with respect to adverse effects on European site integrity. Where necessary, mitigation measures can be put forward to address these adverse effects. The consideration of other projects and plans ends at Stage 1 if no LSE from in-combination effects is identified.

2.6. Consultation

Under Regulation 63(3) of the Habitats Regulations, the appropriate nature conservation bodies, in this case Natural Resources Wales and Natural England, must be consulted when a competent authority undertakes an Appropriate Assessment. Therefore, Gloucestershire County Council (the Competent Authority) are obliged to make their assessment available to Natural Resources Wales and Natural England for comment, with any representation incorporated into the final assessment.

[17] Natural England (2019) MPA Conservation Advice Glossary of Terms. Available here: https://designatedsites.naturalengland.org.uk/pdfs/MPA_CAGlossary_March2019.pdf
[18] European Commission (2018) Managing Natura 2000 Sites. The Provision of Article 6 of the 'Habitats' Directive 92/43/EEC.

3. The European Sites

The initial search, as per the methodology outlined in Section 2, identified six European sites (see **Appendix D** for locations of those within 2 km of the Scheme), which are described in more detail below:

- River Wye/ Afon Gwy SAC located immediately within the Scheme (bridge spans the river);
- Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC located approximately 350 m northeast of the Scheme;
- Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC located approximately 2.2 km northeast from the Scheme;
- Severn Estuary/ Môr Hafren SAC located 5.5 km from the Scheme, but approximately 15 km downstream;
- Severn Estuary/ Môr Hafren SPA located 5.5 km from the Scheme, but approximately 15 km downstream; and
- Severn Estuary/ Môr Hafren Ramsar site located 5.5 km from the Scheme, but approximately 15 km downstream.

Hydrological or hydrogeological linkages between the River Wye and River Severn were identified. No Hydrological or hydrogeological linkages to any other European Site (or any Europeans sites which may have functionally linked land) were identified.

Information pertaining to each site is summarised in Tables 3-1 to 3-6 below:

Table 3-1 Information about the River Wye/ Afon Gwy SAC

Site Designation Status	River Wye/ Afon Gwy SAC
Location of European Site	The River Wye/ Afon Gwy SAC runs through East Wales, Gloucestershire, Wiltshire and Bristol/ Bath area, Herefordshire, Worcestershire and Warwickshire, West Wales and The Valleys and is composed of 32 separate Sites of Special Scientific Interest (SSSIs), 29 of which are in Wales and three which border England and Wales. The SAC is located within the Scheme, with the river running beneath the bridge.
Brief Description of the European Site	The SAC covers a total area of approximately 2148 ha and represents a large, linear ecosystem which acts as an important wildlife corridor, an essential migration route, and a key breeding area for many nationally and internationally important species. The river is of special interest for three main aquatic plant community types - rivers on sandstone, mudstone and hard limestone, clay rivers and lowland rivers with minimal gradient, as well as for certain flowering plants and bryophytes. The invertebrate fauna is of special interest for species associated with riffles, river shingles and saltmarsh, river deadwood and bankside vegetation. The fish fauna includes species which are all of European importance and are listed on Annex II of the EU Habitats & Species Directive. The site is also of international importance for its Atlantic stream crayfish *(Austropotamobius pallipes)*, common otter *(Lutra lutra)* and beds of water crowfoot (*Ranunculus* spp.).
Qualifying features	Annex I habitats present which are listed a primary qualifying feature of the SAC: • H3260 - Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation. Annex I habitats present that are listed as a qualifying feature of the site (but not the primary reason for its designation): • H7140 Transition mires and quaking bogs. Annex II species present which are listed a primary qualifying feature of the SAC: • S1092 White-clawed (or Atlantic stream) crayfish;

	• S1095 Sea lamprey (*Petromyzon marinus);* • S1096 Brook lamprey (*Lampetra planeri);* • S1099 River lamprey (*Lampetra fluviatilis);* • S1103 Twaite shad (*Alosa fallax);* • S1106 Atlantic salmon (*Salmo salar);* • S1163 Bullhead (*Cottus gobio);* and • S1355 Otter (*Lutra lutra*). Annex II species present that are listed as a qualifying feature of the site (but not the primary reason for its designation): • S1102 Allis shad (*Alosa alosa*).
Vulnerabilities of the European Site[19]	The site is vulnerable to the following: • Pollution to groundwater (point sources and diffuse sources); • Human induced changes in hydraulic conditions; • Other ecosystem modifications; • Invasive non-native species; and • Forest and Plantation management and use.
Conservation Objectives of the European Site[2021]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site. The conservation objectives should be read in conjunction with the accompanying Supplementary Advice document[22], which provides more detailed advice and information to enable to application and achievement of the Objectives set out above.

Table 3-2 Information about the Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC

Site Designation Status	Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC
Location of European Site	The Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC is located within Gloucestershire, Wiltshire and Bristol/ Bath area, Herefordshire, Worcestershire and Warwickshire, West Wales and The Valleys and is composed of 16 separate SSSIs, eight in Wales, seven in England and one cross border SSSI. The SAC is located approximately 350 m to the northeast of the Scheme at its closest point.
Brief Description of the European Site	The SAC covers a total area of approximately 913 ha and lies on the southern Carboniferous limestone and contains abundant and near-continuous semi-natural woodland along the river gorge reflecting a wide range of ecological

[19] Natura 2000 Standard Data Form (2015) River Wye SAC. Available here: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012642.pdf
[20] Natural England (2018) European Site Conservation Objectives for River Wye SAC. Available here: http://publications.naturalengland.org.uk/publication/6096799802589184
[21] https://naturalresources.wales/media/682835/river-wye-sac-core-management-plan-approved.pdf
[22] Natural England (2019) River Wye/ Afon Gwy Special Area of Conservation (SAC) Site Code: UK0012642. Available here: http://publications.naturalengland.org.uk/publication/6096799802589184

	variation associated with slope, aspect and landform. Uncommon trees and herbs are found here, and the complex of sites also supports an important population of lesser horseshoe bats (*Rhinolophus hipposideros)* which roost and hibernate in natural caves and former iron mines within the woods.
Qualifying features	Annex I habitats present which are listed a primary qualifying feature of the SAC: • H9130 Asperulo-Fagetum beech forests; • H9180 Tilio-Acerion forests of slopes, screes and ravines *Priority feature; • H91J0 Taxus baccata woods of the British Isles *Priority feature. Annex II species present as a qualifying feature, but not a primary reason for site selection: • S1303 Lesser horseshoe bat.
Vulnerabilities of the European Site[23]	The site is vulnerable to the following: • Other ecosystem modifications; • Invasive non-native species; • Changes in biotic conditions; • Problematic native species; and • Forest and plantation management and use.
Conservation Objectives of the European Site[24] [25]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site. The conservation objectives should be read in conjunction with the accompanying Supplementary Advice document[26], which provides more detailed advice and information to enable to application and achievement of the Objectives set out above.

Table 3-3 Information about the Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC

Site Designation Status	**Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC**
Location of European Site	The SAC is located within Monmouthshire and Gloucestershire and is composed of 13 component SSSIs, four in Wales and nine in England. The SAC is located approximately 2.2 km to the northeast of the Scheme at its closest point.

[23] Natura 2000 Standard Data Form (2015) Wye Valley Woodlands. Available here: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012727.pdf
[24] Natural England (2018) European Site Conservation Objectives for Wye Valley Woodlands. Available here: http://publications.naturalengland.org.uk/publication/6331090281168896
[25] https://naturalresources.wales/media/674402/Wye%20Valley%20Woods%20core%20plan%2015%20Nov%2007%20English.pdf
[26] Natural England (2019) European Site Conservation Objectives: supplementary advice on conserving and restoring site features Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy Special Area of Conservation (SAC) Site code: UK0012727. Available here: http://publications.naturalengland.org.uk/publication/6331090281168896

Brief Description of the European Site	The SAC covers a total area of approximately 144.82 ha and comprises a complex of sites which contains by far the greatest concentration of lesser horseshoe bats in the UK. In addition, the site also supports large numbers of greater horseshoe bats (*Rhinolophus ferrumequinum)*. The entire site supports an exceptional breeding population of both species as the majority of sites within the complex are maternity roosts. The site also includes several disused mines which are used as hibernation roosts.
Qualifying features	Annex II species present which are listed a primary qualifying feature of the SAC: • S1303 Lesser horseshoe bat; • S1304 Greater horseshoe bat.
Vulnerabilities of the European Site[27]	The site is vulnerable to the following: • Other ecosystem modifications; • Outdoor sports and leisure activities, recreational activities; and • Human induced changes in hydraulic conditions.
Conservation Objectives of the European Site[28] [29]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site. The conservation objectives should be read in conjunction with the accompanying Supplementary Advice document[30], which provides more detailed advice and information to enable to application and achievement of the Objectives set out above.

Table 3-4 Information about the Severn Estuary/ Môr Hafren SAC

Site Designation Status	Severn Estuary/ Môr Hafren SAC
Location of European Site	The SAC site is located within Dorset, Somerset, East Wales, Gloucestershire, Wiltshire and Bristol/ Bath area and is composed of three component SSSIs. The SAC is located 5.5 km to the southeast of the Scheme at its closest point but approximately 15 km downstream, linked by way of the River Wye/ Afon Gwy SAC.
Brief Description of the European Site	The SAC covers a total area of approximately 73,714 ha and comprises a complex of sites encompassing tidal rivers, estuaries, mud flats, sand flats, lagoons (including saltwork basins), salt marshes, salt pastures, and salt steppes.

[27] Natura 2000 Standard Data Form (2015) Wye Valley Woodlands & Forest of Dean Bat Sites SAC. Available here: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0014794.pdf.
[28] Natural England (2018) European Site Conservation Objectives for Wye Valley Woodlands & Forest of Dean Bat Sites. Available here: http://publications.naturalengland.org.uk/publication/4907653293670400.
[29] https://naturalresources.wales/media/674312/Wye%20Valley%20Bats%20Core%20Plan%20TRK%2031%20Oct%2007%20_A_.pdf
[30] Natural England (2019) Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena Special Area of Conservation (SAC) Site code: UK0014794. Available here: http://publications.naturalengland.org.uk/publication/4907653293670400

Qualifying features	Annex I habitats present which are listed as a primary qualifying feature of the site: • H1130 Estuaries; • H1140 Mudflats and sandflats not covered by seawater at low tide; and • H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*). Annex I habitats present that are listed as a qualifying feature of the site (but not the primary reason for its designation): • H1110 Sandbanks which are slightly covered by sea water all the time; • H1170 Reefs. Annex II species present which are listed a primary qualifying feature of the site: • S1095 Sea lamprey; • S1099 River lamprey; and • S1103 Twaite shad.
Vulnerabilities of the European Site[31]	The site is vulnerable to the following: • Other urbanisation, industrial and similar activities; • Changes in abiotic conditions; • Human induced changes in hydraulic conditions; • Outdoor sports and leisure activities, recreational activities; and • Modification of cultivation practices.
Conservation Objectives of the European Site[32] [33]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site.

Table 3-5 Information about the Severn Estuary/ Môr Hafren SPA

Site Designation Status	Severn Estuary/ Môr Hafren SPA
Location of European Site	The SPA is located adjacent to Dorset, Somerset, East Wales, Gloucestershire, Wiltshire and Bristol/ Bath area. The SPA is located 5.5 km to the southeast of the Scheme at its closest point but approximately 15 km downstream, linked by way of the River Wye/ Afon Gwy SAC.
Brief Description of the European Site	The SPA covers a total area of approximately 24,487.91 ha and regularly supports internationally important numbers of six species of wintering bird populations, as described below. The SPA additionally supports nationally important populations of a further ten species of wintering bird, four species of bird during passage periods and a nationally important breeding population of a migratory bird species (lesser black backed gull *Larus fuscus*).

[31] Natura 2000 Standard Data Form (2015) Severn Estuary SAC. Found here: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0013030.pdf
[32]Natural England (2019) European Site Conservation Objectives for Severn Estuary/Môr Hafren Special Area of Conservation
33 https://naturalresources.wales/media/673887/severn-estuary-sac-spa-and-ramsar-reg-33-advice-from-ne-and-ccw-june-09.pdf

Qualifying features	ARTICLE 4.1 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: • *Cygnus columbianus bewickii* (Western Siberia/North-eastern & North-western Europe) 3.9% of the GB population 5-year peak mean 1991/92-1995/96. ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: • *Anas strepera* (North-western Europe) 0.9% of the population 5-year peak mean 1991/92-1995/96; • *Anser albifrons albifrons* (North-western Siberia/North-eastern & North-western Europe) 0.4% of the population 5-year peak mean 1991/92-1995/96; • *Calidris alpina alpina* (Northern Siberia/Europe/Western Africa) 3.3% of the population 5-year peak mean 1991/92-1995/96; • *Tadorna tadorna* (North-western Europe) 1.1% of the population 5-year peak mean 1991/92-1995/96; • *Tringa totanus* (Eastern Atlantic - wintering) 1.3% of the population 5-year peak mean 1991/92-1995/96. ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: • 84,317 waterfowl (5-year peak mean 1991/92-1995/96) Including: *Cygnus columbianus bewickii, Tadorna tadorna, Anas strepera, Calidris alpina alpina, Tringa tetanus.*
Vulnerabilities of the European Site[34]	The site is vulnerable to the following: • Outdoor sports and leisure activities, recreational activities; • Other urbanisation, industrial and similar activities; • Modification of cultivation practices; • Changes in abiotic conditions; and • Human induced changes in hydraulic conditions.
Conservation Objectives of the European Site[35][36]	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds directive, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site.

[34] Natura 2000 Standard Data Form (2015) Severn Estuary SPA. Found here: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9015022.pdf
[35] European Site Conservation Objectives for Severn Estuary Special Protection Area Site Code: UK9015022 Found here: http://publications.naturalengland.org.uk/publication/3184206?category=3212324
[36] https://naturalresources.wales/media/673887/severn-estuary-sac-spa-and-ramsar-reg-33-advice-from-ne-and-ccw-june-09.pdf

Table 3-6 Information about the Severn Estuary/ Môr Hafren Ramsar site

Site Designation Status	Severn Estuary/ Môr Hafren Ramsar site
Location of European Site	The Ramsar site is located adjacent to Dorset, Somerset, East Wales, Gloucestershire, Wiltshire and Bristol/ Bath area, 5.5 km to the southeast of the Scheme at its closest point but approximately 15 km downstream, linked by way of the River Wye/ Afon Gwy SAC.
Brief Description of the European Site[37]	The Ramsar covers a total area of approximately 24,701 ha and consists of an extensive intertidal zone comprising intertidal mudflats, sand banks, saltmarsh, shingle, and rocky platforms. The site is of particular importance for staging nationally important numbers of several species of waterbirds, and internationally important numbers of wintering water birds. This site is important for several species of fish migrating between sea and river via the estuary. Small patches of a nationally rare plant grass poly (*Lythrum hyssopifolia)* are found in the grassland zone.
Important features	**Ramsar criterion 1** Due to immense tidal range (second largest in world), this affects both the physical environment and biological communities. Habitats Directive Annex I features present include: • H1110 Sandbanks which are slightly covered by sea water all the time; • H1130 Estuaries; • H1140 Mudflats and sandflats not covered by seawater at low tide; and • H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*). **Ramsar criterion 3** Due to unusual estuarine communities, reduced diversity and high productivity. **Ramsar criterion 4** This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon (*Salmo salar*), sea trout (*S. trutta*), sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis)*, Allis shad (*Alosa alosa*), Twaite shad (*A. fallax*), and European eel (*Anguilla anguilla*). It is also of particular importance for migratory birds during spring and autumn. **Ramsar criterion 5** Assemblages of international importance: Species with peak counts in winter: 70919 waterfowl (5-year peak mean 1998/99-2002/2003). **Ramsar criterion 6** – species/ populations occurring at levels of international importance. **Qualifying Species/populations (as identified at designation):** *Species with peak counts in winter:* • Tundra swan (*Cygnus columbianus bewickii*), NW Europe 229 individuals, representing an average of 2.8% of the GB population (5-year peak mean 1998/9-2002/3); • Greater white-fronted goose (*Anser albifrons albifrons),* NW Europe 2076 individuals, representing an average of 35.8% of the GB population (5-year peak mean for 1996/7-2000/01); • Common shelduck (*Tadorna tadorna*), NW Europe 3223 individuals, representing an average of 1% of the population (5-year peak mean 1998/9-2002/3); • Gadwall (*Anas strepera Strepera*), NW Europe 241 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3);

[37] Severn Estuary Ramsar Information Sheet. Found here: https://rsis.ramsar.org/ris/67.

	• Dunlin (*Calidris alpina alpine*), W Siberia/W Europe 25082 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3); • Common redshank (*Tringa totanus tetanus)*, 2616 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3). **Species/populations identified subsequent to designation for possible future consideration under criterion 6:** *Species regularly supported during the breeding season:* • Lesser black-backed gull (*Larus fuscus graellsii*), W Europe/Mediterranean/W Africa 4167 apparently occupied nests, representing an average of 2.8% of the breeding population (Seabird 2000 Census). *Species with peak counts in spring/autumn:* • Ringed plover (*Charadrius hiaticula*), Europe/Northwest Africa 740 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3). *Species with peak counts in winter:* • Eurasian teal (*Anas crecca*), NW Europe 4456 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3); • Northern pintail (Anas acuta), NW Europe 756 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3). **Ramsar criterion 8** The fish assemblage of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon (*Salmo salar*), sea trout (*S. trutta*), sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*), allis shad (*Alosa alosa*), twaite shad (*A. fallax*), and eel (*Anguilla anguilla*) use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad (*Alosa alosa*) and twaite shad (*A. fallax*) which feed on mysid shrimps in the salt wedge.
Vulnerabilities of the European Site[38]	The site is under threat from the following: • Dredging; • Erosion; • Recreational/ tourism disturbance (unspecified).
Conservation Objectives of the European Site	N/A Conservation objectives of the Severn Estuary/ Môr Hafren SAC and SPA listed above in Tables 3.4 and 3.5 above will be applied.

[38] JNCC (1995) Information Sheet on Ramsar Wetlands (RIS) . Found here: https://jncc.gov.uk/jncc-assets/RIS/UK11081.pdf

4. Pre-Screening

A total of six sites were identified within the zone of influence outlined in the scope, comprising:

- River Wye/ Afon Gwy SAC located immediately adjacent to the Scheme;
- Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC located approximately 350 m northeast of the Scheme;
- Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC located approximately 2.2 km northeast from the Scheme;
- Severn Estuary/ Môr Hafren SAC located 5.5 km from the Scheme, but approximately 15 km downstream;
- Severn Estuary/ Môr Hafren SPA located 5.5 km from the Scheme, but approximately 15 km downstream; and
- Severn Estuary/ Môr Hafren Ramsar site located 5.5 km from the Scheme, but approximately 15 km downstream.

The repair/ repainting works at Tintern Wireworks Bridge are small scale, highly localised and temporary in nature. The Scheme is not directly connected with or necessary to site management for nature conservation of the River Wye/ Afon Gwy SAC, Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC or Severn Estuary/ Môr Hafren SAC/ SPA/ Ramsar site. Due to the nature of the works, only construction of the Scheme has been considered in the assessment, as following the repairs and refurbishment, there will be no change to the existing operational use of the bridge and no discernible environmental impacts are anticipated. Furthermore, as the Scheme will remain extant for the foreseeable future, decommissioning is also not considered in this assessment. The bridge has been assessed as not providing suitable roosting opportunities for the qualifying bat species of Wye Valley Woodlands SAC and Wye Valley and Forest of Dean Bat Sites (Lesser Horseshoe bat) and so no direct impacts upon individual bats from the SAC are anticipated. No use of artificial lighting is proposed for the Scheme and so there is no potential for the Scheme to result in fragmentation of River Wye SAC which may be used as a foraging/ commuting corridor by bats from the Wye Valley and Forest of Dean Bat Sites and Wye Valley Woodlands.

The Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC and Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC are located approximately 350 m to the northeast and 2.2 km to the northeast of the Scheme, respectively. It is considered that there are no impact pathways by which the Scheme could have an effect on the Annex I habitats or Annex II species of these two SACs. Given the location and small-scale nature of the works at Tintern Wireworks Bridge, it is considered reasonably unlikely that there would be any impacts beyond the immediate work environs. No habitat linkages or functionally linked land (e.g.,
foraging sites outside the SAC boundary) could potentially be affected by the Scheme as there will be no loss or disturbance of any natural habitat. On this basis, Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC and Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC have been screened out from further assessment. In accordance with LA 115 Habitats Regulations assessment[39], a Findings of No Significant Effects Report Matrix has been completed for the designated sites that have been screened out from further assessment. The matrix can be seen in **Appendix E**.

The Severn Estuary/ Môr Hafren SAC, Severn Estuary/ Môr Hafren SPA and Severn Estuary/ Môr Hafren Ramsar site are located approximately 5.5 km from the Scheme at their nearest point, but approximately 15 km downstream. The only pathway for potential impacts would be via a pollution event from the proposed works, which lie just within the extents of the Severn Estuary tidal range, within the River Wye. Given the small-scale and highly localised nature of the repair works, the distance from the Scheme, plus the very large dilution rates that would be achieved in the River Wye/ Afon Gwy, it is considered that the impact pathway is sufficiently weakened as to make it highly unlikely that there could be any discernible effects on the Severn Estuary/ Môr Hafren SAC, SPA and Ramsar site. Therefore, these sites have been screened out from further assessment.

A screening assessment of LSEs has been undertaken for the River Wye/ Afon Gwy SAC and is presented in Section 5 below. In accordance with LA 115 Habitats Regulations assessment, a Findings of Significant Effects Report Matrix has been completed for River Wye/ Afon Gwy SAC. The matrix can be seen in **Appendix E**.

[39] https://www.standardsforhighways.co.uk/prod/attachments/e2fdab58-d293-4af7-b737-b55e08e045ae?inline=true

5. Stage 1 – Screening

5.1. Likely Significant Effects - Alone

The assessment of LSE for the River Wye/ Afon Gwy SAC is presented in Table 5-1 below.

Table 5-1 Summary of Likely Significant Effects of the Scheme on the River Wye/ Afon Gwy SAC

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Potential for LSE?	Justification
Annex I habitats present that are listed as a primary qualifying feature of the SAC					
H3260: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	Construction	Changes to water quality – risk of localised pollution due to mobilised sediments/ run-off (i.e., run-off from steel blasting and repainting) and/ or other spillages (i.e. from plant machinery and vehicles).	Yes	The Scheme is located on Tintern Wireworks Bridge which lies within the SAC boundary. Detailed description of the works can be viewed in Section 1.2 *Scheme Description*. Given the location of the works within the SAC, it is possible that any spillages during repairs/repainting could enter the River Wye/ Afon Gwy, therefore, without mitigation the Scheme could result in a change to water quality within the SAC. Consequently, an LSE on this Qualifying Feature of the SAC cannot be ruled out.
			Changes to air quality - risk of localised air pollution from mobilised dust and vehicle emissions	Yes	The Scheme is located at Tintern Wireworks Bridge which lies within the SAC boundary. Changes to air quality due to work vehicle emissions are considered unlikely relative to the baseline, given the bridge provides access for some local properties. The bridge is not anticipated to receive high levels of vehicle use during construction. However, repair works include grit-blasting of steel and removal of paint which is likely to generate low levels of dust and potential localised deposition on the water surface/ vegetation leading to smothering and contamination. Therefore, without mitigation the Scheme could result in a change to air quality within the SAC. Consequently, an LSE on this Qualifying Feature of the SAC cannot be ruled out.

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Potential for LSE?	Justification
Annex I habitats present that are listed as a qualifying feature of the site (but not the primary reason for its designation)					
H7140: Transition mires and quaking bogs	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	Construction	Changes to water quality – risk of localised pollution due to mobilised sediments/ run-off (i.e. run-off from steel blasting and repainting) and/ or other spillages (i.e. from plant machinery and vehicles).	No	Although there is a risk of surface water pollution entering the River Wye/ Afon Gwy, the transition mires and quaking bogs feature are confined to the upper reaches of the River Wye/ Afon Gwy SAC, over 80 km to the northwest and upstream of the Scheme. Therefore, there is no pathway by which this Qualifying Feature of the SAC could be affected.
			Changes to air quality - risk of localised air pollution from mobilised dust and vehicle emissions	No	Although there is a risk of air-borne contaminants affecting the River Wye/ Afon Gwy, the transition mires and quaking bogs feature are confined to the upper reaches of the River Wye/ Afon Gwy SAC, over 80 km to the northwest and upstream of the Scheme. Therefore, there is no pathway by which this Qualifying Feature of the SAC could be affected.
Annex II species present which are listed as a primary qualifying feature of the SAC					
S1092 White-clawed (or Atlantic stream) crayfish	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural	Construction	Changes to water quality – risk of localised pollution due to mobilised sediments/ run-off (i.e., run-off from steel blasting and repainting) and/ or other spillages (i.e. from plant machinery and vehicles).	Yes	See justification for H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation above.

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Potential for LSE?	Justification
	habitats and habitats of qualifying species; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site.		Changes to air quality - risk of localised air pollution from mobilised dust and vehicle emissions	Yes	See justification for H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation above.
			Species disturbance	No	No works to in-channel benthic habitats such as temporary or permanent in-channel structures or dewatering will be taking place, nor is construction equipment (rollers, piling etc) to be utilised that would generate acoustic disturbance relative to the baseline. Disturbance (noise and vibration) to the local environment occurs regularly from pedestrian usage of the bridge and riparian use by boats. As the repair works, are of a short-term duration and confined to daylight hours, it is highly unlikely that any disturbance caused by the Scheme would have a significant effect on white-clawed crayfish. The Scheme is therefore not considered to have an LSE with respect to species disturbance on this Qualifying Feature of the SAC.
Qualifying fish species: • **S1095 Sea lamprey** • **S1096 Brook lamprey** • **S1099 River lamprey**	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats	Construction	Changes to water quality – risk of localised pollution due to mobilised sediments/ run-off (i.e., run-off from grit blasting and repainting) and/ or other spillages (i.e. from plant machinery and vehicles).	Yes	See justification for H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation above. In addition, the mobilisation of pollutants from the working area may result in smothering of fish spawning habitat, in particular for Twaite and Allis shad that are known to spawn at/above the tidal limit.

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Potential for LSE?	Justification
• **S1103 Twaite shad** • **S1106 Atlantic salmon** • **S1163 Bullhead** • **S1102 Allis shad**	and habitats of qualifying species; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site.		Changes to air quality - risk of localised air pollution from mobilised dust and vehicle emissions	Yes	See justification for H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation above.
			Risks to the designating features of the SAC include temporary visual, vibration and acoustic disturbance to fish species associated with grit blasting and repainting.	No	Grit blasting, the activity with the greatest likelihood of causing noise disturbance to fish species inhabiting the Scheme's watercourse, will not be undertaken during the most sensitive life-stage periods for interest feature fish, which includes migration and spawning periods. Use/storage of plant machinery near, adjacent to or over the River Wye may result in low level visual/acoustic disturbance to the qualifying features of the SAC. The Scheme would not result in disturbance of fish species that would affect recruitment success. Consequently, no LSEs on the qualifying features of the SAC would result from the Scheme.
S1355 Otter	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species;	Construction	Changes to water quality – risk of localised pollution due to mobilised sediments/ run-off (i.e., run-off from steel blasting and repainting) and/ or other spillages (i.e. from plant machinery and vehicles).	Yes	See justification for H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation above.
			Changes to air quality - risk of localised air pollution from mobilised	Yes	See justification for H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation above.

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Potential for LSE?	Justification
	• The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site.		dust and vehicle emissions		
			Species disturbance	Yes	The Scheme is located on Tintern Wireworks Bridge which lies within the SAC boundary. Repair works will be confined to the bridge, with access being limited to the use of temporary works platform (such as scaffold or similar). A site walkover completed on 15th October 2021 and reported in a Preliminary Ecological Report[40] identified suitable habitat for otter commuting and foraging within proximity of the Scheme, along with the potential for otter holts to be present; a detailed survey for otter could not be undertaken at the time due to the banks of the River Wye not being safe to access. Otter may be disturbed during construction due to the presence of people and vehicles/ plant in proximity to watercourses within the SAC and noise and vibration from the cleaning, repair and repainting works. However, the environment is already subject to regular disturbance from pedestrian usage of the bridge and riparian use by boats. No night-time works are being undertaken as it is not possible to safely access the bridge or carry out the required task at night. As no otter survey has been undertaken, it is not known if there are any otter holts (daytime resting places) within the vicinity of the works, in which otters (if occupying such places) could be disturbed by the works. Therefore, daytime disturbance impacts to otter within proximity to the Scheme is currently

[40] Atkins (2020) Brockweir Ecological Constraints A3 Final. Found here: P:\GBEMC\GTG\AF0014_0218\!!BRISTOL JOBS\2019\GCC Hwys Small Jobs\Maint_repair jobs\68 Brockweir Bridge\6.0 Reports\6.1 Drafts\PEA

Qualifying feature	Conservation objectives	Phase of project that may cause effect	Potential impact	Potential for LSE?	Justification
					unknown. Without further information/ mitigation the Scheme could result in disturbance of otter. Consequently, an LSE on this Qualifying Feature of the SAC cannot be ruled out.

5.2. Likely Significant Effects – In-combination

Gloucestershire County Council and district planning portals[41] were reviewed for information of any projects that may have been assessed for potential impacts upon the European sites identified within this assessment and, therefore, may have an in-combination effect with the Scheme.

An internet search of the following organisations has also been undertaken for details of other projects and plans subject to HRA:

Local Authorities

- Gloucestershire County Council;
- Forest of Dean District Council;
- Herefordshire Council; and
- Monmouthshire County Council.

Other Statutory Bodies

- Planning Inspectorate[42].

This review is considered to be sufficient to inform the in-combination assessment for the HRA of the Scheme, taking account of the localised nature of the works. The results are presented in Table 5-2 below.

Table 5-2 In-combination Effects Results

Document Title	Summary of HRA	In-combination effect?
Gloucestershire County Council Minerals Local Plan HRA, March 2018[43]	The likely effects on the River Wye/ Afon Gwy SAC of the plan were uncertain for some of the preferred options. Operational and excavation phases on Allocation 01 (Stowe Hill) could create erosive flows and affect water quality, with water quality potentially also	**Yes.** Both schemes have identified that there is the potential for water quality impacts upon the River Wye SAC. Therefore, without mitigation there is the potential for in-combination effects.

[41] https://www.gloucestershire.gov.uk/planning-and-environment/planning-applications/search-and-track-planning-applications/
[42] https://infrastructure.planninginspectorate.gov.uk/
[43] https://www.gloucestershire.gov.uk/media/2100958/sub-5-mlp-for-glos-hra-main-report-for-the-publication-mlp.pdf

Document Title	Summary of HRA	In-combination effect?
	affected by poor site restoration. No LSE was concluded provided simple additional measures were applied.	
Gloucestershire Local Transport Plan Review Habitats Regulations Assessment 2020[44]	The Local Transport Plan (LTP) was found to not have an LSE on the River Wye at either the construction or operational phase.	**No.** No in-combination effects anticipated as there is no pathway by which any proposals within the LTP could have an effect on the SAC. Therefore, no in-combination effect with the Scheme is possible
Gloucestershire County Council Waste Core Strategy HRA[45]	No proposed waste sites were recorded within 10 km of the River Wye/ Afon Gwy SAC and no potential adverse impacts were anticipated to the SAC as a result of implementation of the Waste Core Strategy.	**No.** No in-combination effects anticipated as there is no pathway by which any proposed waste sites within the strategy could have an effect on the SAC.
Gloucestershire County Council Local Transport Plan (LTP) HRA[46]	The HRA determined that a number of policies and schemes within the LTP could lead to LSE on the European sites considered, which includes the River Wye/ Afon Gwy SAC. Effects included habitat loss, species disturbance, changes to water quality, changes to surface and groundwater hydrology, changes to air quality the introduction of invasive non-native species and recreational pressure. Taking into account mitigation, scope for 'designing out' impacts and the robust wording of the Revised Draft LTP no adverse effect on integrity was concluded.	**Yes.** Both schemes have identified that there is the potential for water quality, air quality impacts and species disturbance upon the SAC. Therefore, without mitigation there is the there is potential for in-combination effects.
Habitats Regulations Assessment Report for: Dinedor Neighbourhood Area 2020 [47]	None of the Dinedor Neighbourhood Development Plan (NDP) objectives and policies (August 2017) were concluded to be likely to have a significant effect on the European sites. The River Wye runs along the north and north welsh boundaries of the parish and is in the hydrological catchment. The settlement boundary of Dinedor is not in close proximity to the river and unlikely to have a direct significant impact on the River	**No.** Dinedor Neighbourhood Plan has identified no LSE on the SAC. No in-combination effects anticipated as there is no pathway by which any objectives or policies within the NPD could have an effect on the SAC.

[44] https://www.gloucestershire.gov.uk/media/2105390/gloucestershire-ltp-hra-final-v50.pdf
[45] https://www.gloucestershire.gov.uk/media/14870/cd45-site-options-habitat-regulations-assessment-hra-report-october-2009.pdf
[46] https://www.gloucestershire.gov.uk/media/2093548/habitats-regulations-assessment-v203-draft-appendix-d.pdf
[47] https://www.herefordshire.gov.uk/downloads/file/21036/habitats-regulations-assessment-june-2020

Document Title	Summary of HRA	In-combination effect?
	Wye. It is therefore concluded that the Dinedor Neighbourhood Plan will not have a likely significant effect on the River Wye SAC. It is unlikely that the Dinedor Neighbourhood Plan will have any in-combination effects with any plans from neighbouring parish councils as the level of growth proposed is the same as that proposed for the Ledbury Housing Market Area in the Herefordshire Core Strategy.	
Habitats Regulations Assessment Report for: Linton Neighbourhood Area 2020 [48]	None of the submission draft Linton Neighbourhood Plan (March 2020) policies were concluded to be likely to have a significant effect on the River Wye.	**No.** Linton Neighbourhood Plan has identified no LSE on the SAC. No in-combination effects anticipated as there is no pathway by which any objectives or policies within the LPD could have an effect on the SAC.
Forest of Dean District Council Allocations Plan Habitat Regulations Assessment (Appropriate Assessment) Report, March 2015[49]	The HRA identified the River Wye/ Afon Gwy SAC as having potential to be affected by the Allocations Plan. Potential for in-combination effects were identified in relation to allocations in the Sedbury area on the River Wye/ Afon Gwy SAC. Potential impacts included air quality (traffic emissions, dust), water level and quality, habitat loss and fragmentation, and disturbance. All adverse effects were ruled out given the mitigation provided by the Core Strategy, policies in the Allocations Plan and additional recommendations made in the HRA.	**Yes.** Both schemes have identified that there is the potential for water quality, air quality and species disturbance impacts upon the SAC. Therefore, without mitigation there is the there is potential for in-combination effects.
Pre-Submission Publication of the Herefordshire Local Plan - Core Strategy Habitat Regulations Assessment Report,	Likely significant effects were identified on the River Wye/ Afon Gwy SAC as a consequence of the following policies: • Policy HD3: Hereford Movement; • Policy LO1: Development at Leominster; • Policy LO2: Leominster urban extension; • Policy RA1: Rural Housing Strategy; • Policy RA2: Herefordshire's Villages; and	**Yes.** Both schemes have identified that there is the potential for water and air quality impacts upon the SAC. Therefore, without mitigation there is the potential for in-combination effects.

[48] https://www.herefordshire.gov.uk/downloads/file/20828/habitats-regulations-assessment-march-2020
[49] https://www.fdean.gov.uk/media/hjkd5rg0/hra-of-allocations-plan-march-2015.pdf

Document Title	Summary of HRA	In-combination effect?
September 2014[50] and Herefordshire	• Policy RA6: Rural economy. Impacts include: physical loss/ damage; noise, vibration and light pollution; air pollution; recreation and urban impacts; interruption to hydrological regimes (changes in water quantity); and, water pollution. It was concluded at AA that there would be no adverse effect on integrity due to the measures set out in the Nutrient Management Plan, as well as the protection afforded in policies SS3 and SD4. The changes to the policies through the Main Modifications have not affected the conclusions of the September 2014 HRA and the mitigation remains unchanged.	
Local Plan Core Strategy: Main Modifications – Sustainability Appraisal and Habitat Regulations Assessment Addendum, April 2015[51]	The assessment concluded that none of the changes proposed to the policies through the Main Modifications would affect the conclusions set out in the September 2014 HRA Report.	**Yes.** Both schemes have identified that there is the potential for water and air quality impacts upon the SAC. Therefore, without mitigation there is the there is potential for in-combination effects.
Amey OW Ltd Hereford Relief Road Habitats Regulations Assessment Route Corridor Options Screening Report[52]	The HRA considered six possible route options for the Hereford Relief Road and identified the potential for LSE on the River Wye/ Afon Gwy SAC as a result of impacts to water quality and species disturbance from noise/ vibration. As the project was at an early stage at the time of reporting, sufficient uncertainty remained as to the potential for LSE on the River Wye/ Afon Gwy SAC and therefore it was not possible to produce a finding of 'No Significant Effects'.	**No.** Despite possible water quality and species disturbance impacts, the lack of option determination and timeframe for proposals coming forward means that the impacts are not reasonably foreseeable. It is highly likely that the Scheme will be completed prior to the construction of the relief road.

[50] https://www.herefordshire.gov.uk/downloads/file/1546/addendum-to-hra-for-herefordshire-local-plan-core-strategy-september-2014
[51] https://www.herefordshire.gov.uk/downloads/file/1547/local-plan-core-strategy-main-modifications-sustainability-appraisal-and-habitats-regulations-assessment-addendum-april-2015
[52] https://www.herefordshire.gov.uk/downloads/file/5275/hereford_relief_road_habitats_regulations_assessment_april_2011.pdf

Document Title	Summary of HRA	In-combination effect?
Monmouthshire County Council Deposit Local Development Plan Habitat Regulations Assessment (Appropriate Assessment) Report, June 2011[53]	The HRA screening determined that a number of policies and schemes within the LDP could lead to LSE on the European sites considered, which includes the River Wye/ Afon Gwy SAC. Potential impacts comprised atmospheric pollution, disturbance, water pollution and water abstraction. Policy safeguards were recommended, and further screening concluded that the Deposit LDP (including site allocations) would not have LSE alone on European sites, if the recommended policy safeguards are incorporated into the Plan. Potential significant in-combination effects were investigated in the AA but concluded the Deposit LDP contained suitable mitigation measures through policies that protect biodiversity and minimise the impacts of development on the wider environment.	**Yes.** Both schemes have identified that there is the potential for water quality, air quality and species disturbance impacts upon the SAC. Therefore, without mitigation there is the there is potential for in-combination effects.

[53] https://www.monmouthshire.gov.uk/app/uploads/2015/07/Habitat-Regulations-Report-June-2011.pdf

6. Stage 1 Screening - Conclusion

Following the Stage 1 – Screening, it is considered that the Scheme as it currently stands on its own has potential to have an LSE on the River Wye/ Afon Gwy SAC (see Table 5-1 above).

Due to the proximity of the works to the SAC, the potential for likely significant effects on the qualifying features of the SAC cannot be ruled out.

Without mitigation there is the potential for pollution as a result of mobilised sediments/ run-off (i.e., run-off from steel blasting and repainting), fuel/ oil spillage etc (i.e. from plant machinery and vehicles) and/ or mobilised dust and vehicle emissions during construction work for the Scheme to have a LSE on the following qualifying features:

- water courses of plain to montane levels;
- white-clawed crayfish;
- qualifying fish species: sea lamprey, brook lamprey, river lamprey, twaite shad, Atlantic salmon, bullhead, allis shad; and,
- otter.

Without mitigation there is the potential for disturbance impacts potentially affecting any otters using holts/ daytime resting places in the vicinity of the Scheme.

It is concluded that an LSE on the River Wye/ Afon Gwy SAC as a result of the Tintern Wireworks Bridge refurbishment works cannot be ruled out.

In-combination effects have been considered as part of this assessment (see Table 5-2 above) and it has been concluded that there is potential for an LSE in-combination with other plans and projects.

A Stage 2, AA will need to be undertaken for the Scheme both alone and in combination, as set out in Section 7 of this report.

7. Stage 2 Appropriate Assessment

7.1. Introduction

Potential for LSEs were identified at Stage 1 Screening for the River Wye/ Afon Gwy SAC. This site has therefore been subject to Appropriate Assessment (AA). The assessment has been adapted from the relevant sections of the AA template in Appendix C of LA115, noting that information relating to several sections of this template are provided elsewhere in this document and are therefore not repeated here.

Information about the Scheme is provided in section 1.2, and potential impacts to the River Wye/ Afon Gwy SAC are described in the Section 5. In accordance with LA 115 Habitats Regulations assessment, a Findings of Significant Effects Report Matrix has been completed for River Wye/ Afon Gwy SAC. The matrix can be seen in **Appendix E**.

The potential impacts of the Scheme on River Wye/ Afon Gwy SAC have been defined following the list in Section C6 of LA115 Appendix C:

Will the proposals -

- *Impact* directly or indirectly affects the European site - The impact will be confined to the area of the European Site adjacent to the Scheme (and downstream of it in the case of any pollution);
- Result in any loss of area of the European Site - there will be no loss of area to the European Site, all works are located outside the SAC boundary;
- Result in change in species population numbers of qualifying interests - there is a risk of change to population should pollution result in mortality or disturbance result in injury, mortality, or reduction in breeding success. Pollution and disturbance impacts are discussed further below;
- Result in disturbance to species within European Site - there is potential for localised disturbance as a result of construction works. Disturbance impacts are discussed further below;
- Cause effects of fragmentation caused by the project - there is no identified fragmentation;
- Result in irreversible impacts - the impacts are all short-term during construction and considered to be reversible once construction is complete;
- Have a long *or short duration - the impacts are short term, during construction only.*

The potential impacts of species disturbance and air/ water pollution are considered below.

7.2. Stage 2 Appropriate Assessment of the Project 'Alone'

Stage 2 AA is required, as it was not possible to rule out LSE that the Scheme could have on the River Wye/ Afon Gwy SAC. At Stage 2, the potential effects are examined in more detail to see if they could have an adverse impact on the integrity of the SAC. Where necessary, mitigation measures have been put forward to address any potential adverse effects on integrity. If it cannot be shown that there will be no adverse effects on the integrity of the SAC, then the aspects of the Scheme that could have an adverse effect will need to be avoided or amended, alternatively the Scheme progresses to the next stage of HRA assessment i.e., Stages 3 and 4.

7.2.1. Changes in Water Quality

The proposed construction phase of the scheme, without mitigation, could result in the discharge of pollutants from accidental spills during construction caused by repair works, specifically removal of extant paint, repairs to degraded steel and application of new paint to the bridge superstructure and piers, within close proximity to the River Wye/ Afon Gwy SAC.

This may affect the following qualifying features of the SAC:

- Water courses of plain to montane levels with the *Ranunculion fluitantis and Callitricho-Batrachion* vegetation;
- White-clawed (or Atlantic stream) crayfish;
- Sea lamprey;
- Brook lamprey;

- River lamprey;
- Twaite shad;
- Atlantic salmon;
- Bullhead;
- Allis shad; and,
- Otter.

7.2.1.1. Mitigation Measures

Potential construction effects will be minimised by following construction best practice and adherence to the Pollution Prevention Guidelines (PPGs)/ Guidance on Pollution Prevention (GPPs)[54] [55] and the Construction Industry Research and Information Association (CIRIA) C715 Environmental good practice on site handbook[56].

The main repair works will take place within a fully encapsulated scaffold which will be erected from the bridge top and suspended beneath and is designed specifically to contain any dust/ debris and prevent any contamination from engineering works to the local environment. All gaps around scaffold tubes will be sealed prior to grit blasting to ensure dust is not released. The works to the piers and main structure, via scaffolding platforms (or similar), will take place using Monoflex polythene sheeting and debris netting arranged to fill any voids between the platforms and the watercourse which will prevent any contamination to the river. On completion of the works, all sheeting will be carefully bagged up for safe disposal. This same process will be implemented for the re-painting of the piers following their cleaning. It is recommended that a spillage assessment is carried out in line with Sustainability & Environment Appraisal LA 113 Road drainage and the water environment Revision 1.

Site vehicles will be confined to the site compound area, approximately 30 m west of the SAC boundary, with an additional area for vehicles, materials and equipment and at Forge Road (Wireworks carpark), approximately 0.5 k m away from the structure. This will prevent pollution incidents of the river resulting from vehicle leaks.

With the risk of water pollution being minimal, the short section of SAC adjacent to the Scheme, and with the implementation of the mitigation measures outlined above, it is considered unlikely that changes in water quality would have any effect upon the integrity of the River Wye/ Afon Gwy SAC, including its qualifying features.

7.2.2. Changes in Air Quality

The proposed construction phase of the scheme, without mitigation, could result in the discharge of dust during construction caused by repair works within close proximity to the River Wye/ Afon Gwy SAC. This may affect the following qualifying features of the SAC:

- Water courses of plain to montane levels with the *Ranunculion fluitantis and Callitricho-Batrachion* vegetation;
- White-clawed (or Atlantic stream) crayfish;
- Sea lamprey;
- Brook lamprey;
- River lamprey;
- Twaite shad;
- Atlantic salmon;
- Bullhead;
- Allis shad; and,
- Otter.

[54] All of the pollution prevention guidelines (PPGs) are available from http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx. Note: the PPGs also make reference to environmental legal obligations, but that information is currently out of date and requires updating.

[55] https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/

[56] The CIRIA documents are a series of publications developed by the Construction Industry Research and Information Association. Each document is targeted at a particular type of business or activity and covers environmental good practice to minimise pollution.

7.2.2.1. Mitigation Measures

Potential construction effects will be minimised by following construction best practice and adherence to the Pollution Prevention Guidelines (PPGs)/ Guidance on Pollution Prevention (GPPs)[57] [58] and the Construction Industry Research and Information Association (CIRIA) C715 Environmental good practice on site handbook[59].

The main repair works will take place within a temporary works platform (such as scaffold or similar) which will be erected from the bridge top and suspended beneath and is designed specifically to contain and prevent any contamination from engineering works to the local environment. All gaps around scaffold tubes will be sealed prior to grit blasting to ensure dust is not released. The works to the piers and main structure, via scaffolding platforms (or similar), will take place using Monoflex polythene sheeting and debris netting arranged to fill any voids between the platforms and the watercourse which will prevent any contamination to the river. On completion of the works, all sheeting will be carefully bagged up for safe disposal. This same process will be implemented for the re-painting of the piers following their cleaning.

Site vehicles will be confined to the site compound area, approximately 30 m west of the SAC boundary, with an additional area for vehicles, materials and equipment and at Forge Road (Wireworks carpark), approximately 0.5 km away from the structure. This will prevent pollution incidents of the river resulting from vehicle leaks

With the risk of air pollution being minimal, the short section of SAC adjacent to the Scheme, and with the implementation of the mitigation measures outlined above, it is considered unlikely that changes in air quality would have any effect upon the integrity of the River Wye/ Afon Gwy SAC, including its qualifying features.

7.2.3. Species Disturbance

The proposed construction phase of the scheme, without mitigation, could result in disturbance to otter, which are a qualifying feature of the River Wye/ Afon Gwy SAC.

Disturbance caused by these works will be temporary and limited to the construction period. Once works are complete, there will be no residual impacts during the operational phase. Therefore, there is no potential for long term disturbance of otter to result from the works.

Grit blasting, the activity with the greatest likelihood of causing noise disturbance to fish species inhabiting the Scheme's watercourse, will not be undertaken during the most sensitive life-stage periods for interest feature fish. However, due to the range of fish species supported by the River Wye, and their variable life-histories/ strategies, it should be noted that it may not be possible to avoid all sensitive periods.

Given the range of fish species likely to be present in the River Wye adjacent to the Site, grit blasting will be avoided between March and July (inclusive).

This would avoid the key migratory and spawning period for Twaite/Allis, which shad tend to spawn between April and May and may move into the watercourse as early as March. Shad species spawn at/ above the tidal limit, however, in the River Wye they are known to migrate 100 km upstream to spawning sites. However, due to the likely suitability of habitat at the Site, a precautionary approach has been taken to assume that they spawn in proximity to the Scheme. By avoiding the key sensitive periods for Twaite/Allis shad, this also avoids other key spawning and/or migratory periods for other qualifying fish species of the SAC, including all lamprey species, Atlantic salmon and bullhead.

River and brook lamprey migratory/spawning period is March to April, inclusive, and are known to be well distributed throughout the catchment. Sea lamprey migrate to the River Wye between May and June. Spawning for all three lamprey species occurs further up the catchment, therefore, risks are purely associated with disturbance during migratory periods.

Avoiding grit blasting between March and June would also avoid the key spawning period for bullhead.

Avoiding grit blasting between March and July would also avoid the early migratory period for Atlantic salmon. Atlantic salmon tend to enter the system in early spring/summer, before migrating further up the system later in the year (typically September/ October) to their spawning habitats. As for lamprey species, risks are purely associated with disturbance to migration.

[57] All of the pollution prevention guidelines (PPGs) are available from http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx. Note: the PPGs also make reference to environmental legal obligations, but that information is currently out of date and requires updating.

[58] https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/

[59] The CIRIA documents are a series of publications developed by the Construction Industry Research and Information Association. Each document is targeted at a particular type of business or activity and covers environmental good practice to minimise pollution.

As grit blasting will be undertaken outside the key ecologically sensitive periods for fish species, in addition to the implementation of the mitigation measures outlined above alongside wrapping of the working area, it is considered that the risk of disturbance/harm to fish and other aquatic species is minimal.

7.2.3.1. Mitigation Measures

Prior to works commencing, an otter survey will be undertaken of at least 100 m upstream and downstream of the Scheme. If otter holts are found within this area, measures will be put in place to avoid adverse effects to otter which may include obtaining a licence from NRW or NE prior to works commencing. A Precautionary Method of Working (PMW) will also be produced and followed throughout the works.

No night-time working is required as part of the Scheme, removing disturbance impacts during key periods of otter activity.

With the implementation of the mitigation measures outlined above, it is considered that the risk of disturbance to otters will be minimal and the Scheme is unlikely to have any effect upon the integrity of the River Wye/ Afon Gwy SAC in regard to otter.

7.3. In-combination Effects

The Stage 1 Screening Assessment identified six HRAs that could have a potential for in-combination effects with the scheme as a result of pollution via changes in water quality and air quality and species disturbance.

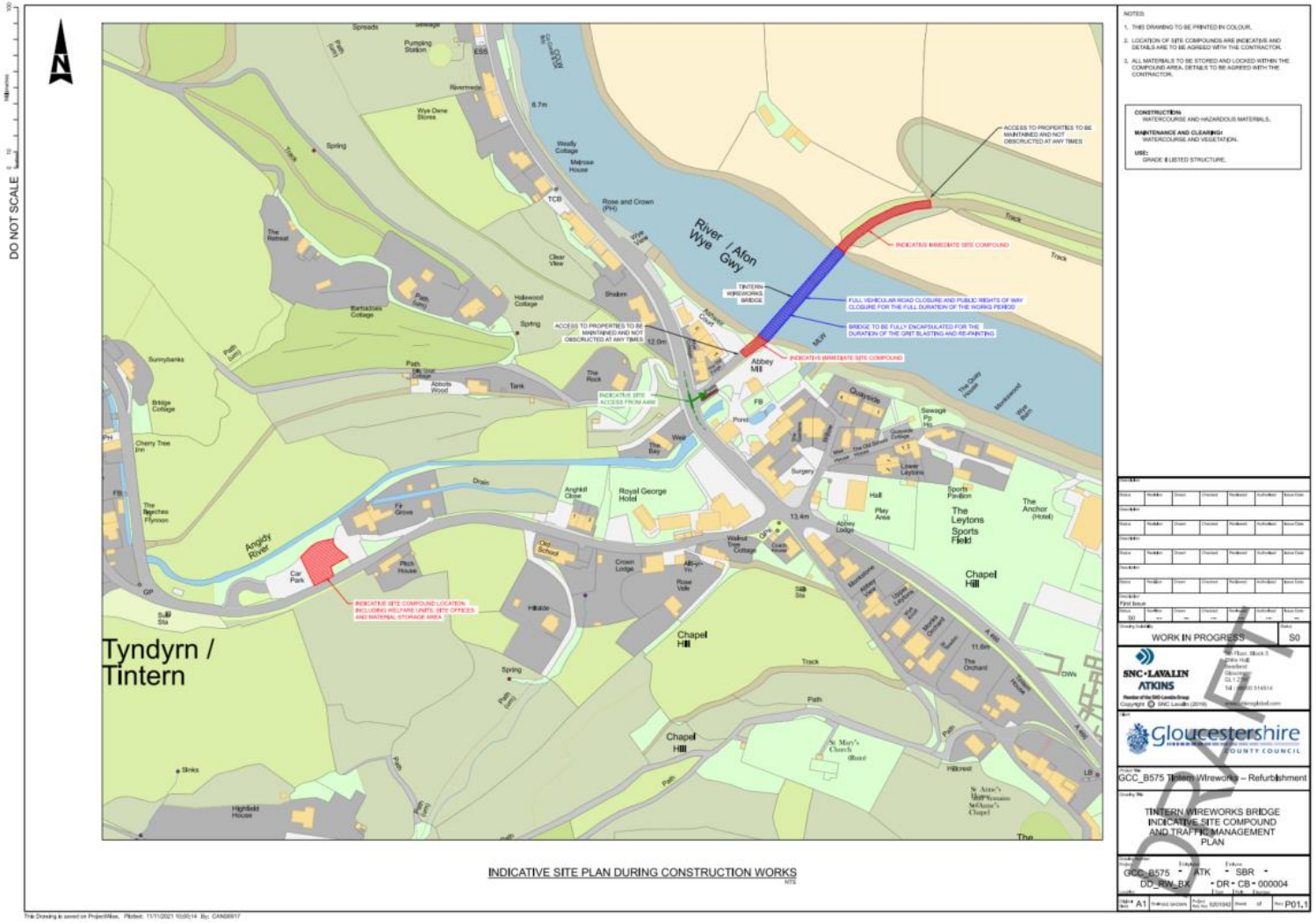
As given in section 7.2.2.1 measures have been identified to mitigate potential pollution from water quality and air quality therefore with the implementation of these measures there is no potential for any in-combination effects.

7.4. Stage 2 Appropriate Assessment Conclusion

It can therefore be concluded that, with the implementation of the mitigation outlined above, the Tintern Wireworks Bridge repair scheme will not have an adverse effect on the integrity of the River Wye/ Afon Gwy SAC either alone or in-combination with other projects and plans.

Appendices

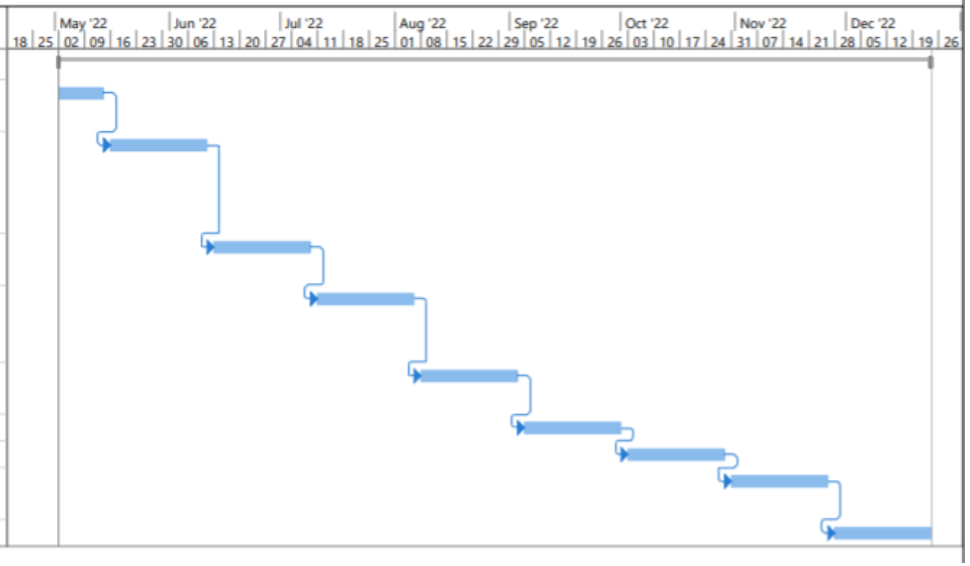
Appendix A. General Arrangement Plan



Appendix B. Construction Programme

Tintern Wireworks Bridge Refurbishment

ID	Task Mode	Task Name	Duration	Start	Finish
0		**Indicative Construction Programme**	**170 days**	**Mon 02/05/22**	**Fri 23/12/22**
1		1 Mobilisation (inc. establish site compounds and general site set up)	2 wks	Mon 02/05/22	Fri 13/05/22
2		2 Enabling works (inc. excavation, backfill and installation of the pattress plate/rod system to the west abutment and wingwalls)	4 wks	Mon 16/05/22	Fri 10/06/22
3		3 Installation of suspended temporary works platform and encapsulation	4 wks	Mon 13/06/22	Fri 08/07/22
4		4 Removal of the existing deck and preperation of abutment/wingwalls and installation of bearings	4 wks	Mon 11/07/22	Fri 05/08/22
5		5 Installation of steel sections, minor repairs to the existing girders & welding	4 wks	Mon 08/08/22	Fri 02/09/22
6		6 Grit blasting and re-painting	4 wks	Mon 05/09/22	Fri 30/09/22
7		7 Installation of new timber panels	4 wks	Mon 03/10/22	Fri 28/10/22
8		8 Masonry repair and repointing (concurrently)	4 wks	Mon 31/10/22	Fri 25/11/22
9		9 Demoblisation and Close out	4 wks	Mon 28/11/22	Fri 23/12/22



Appendix C. Site Photographs

Photograph 1. Upstream elevation of Tintern Wireworks Bridge

Photograph 2. Downstream elevation of Tintern Wireworks Bridge

Photograph 3. View upstream of Tintern Wireworks Bridge

Photograph 4. View downstream of Tintern Wireworks Bridge

Photograph 5. View of upstream west bank

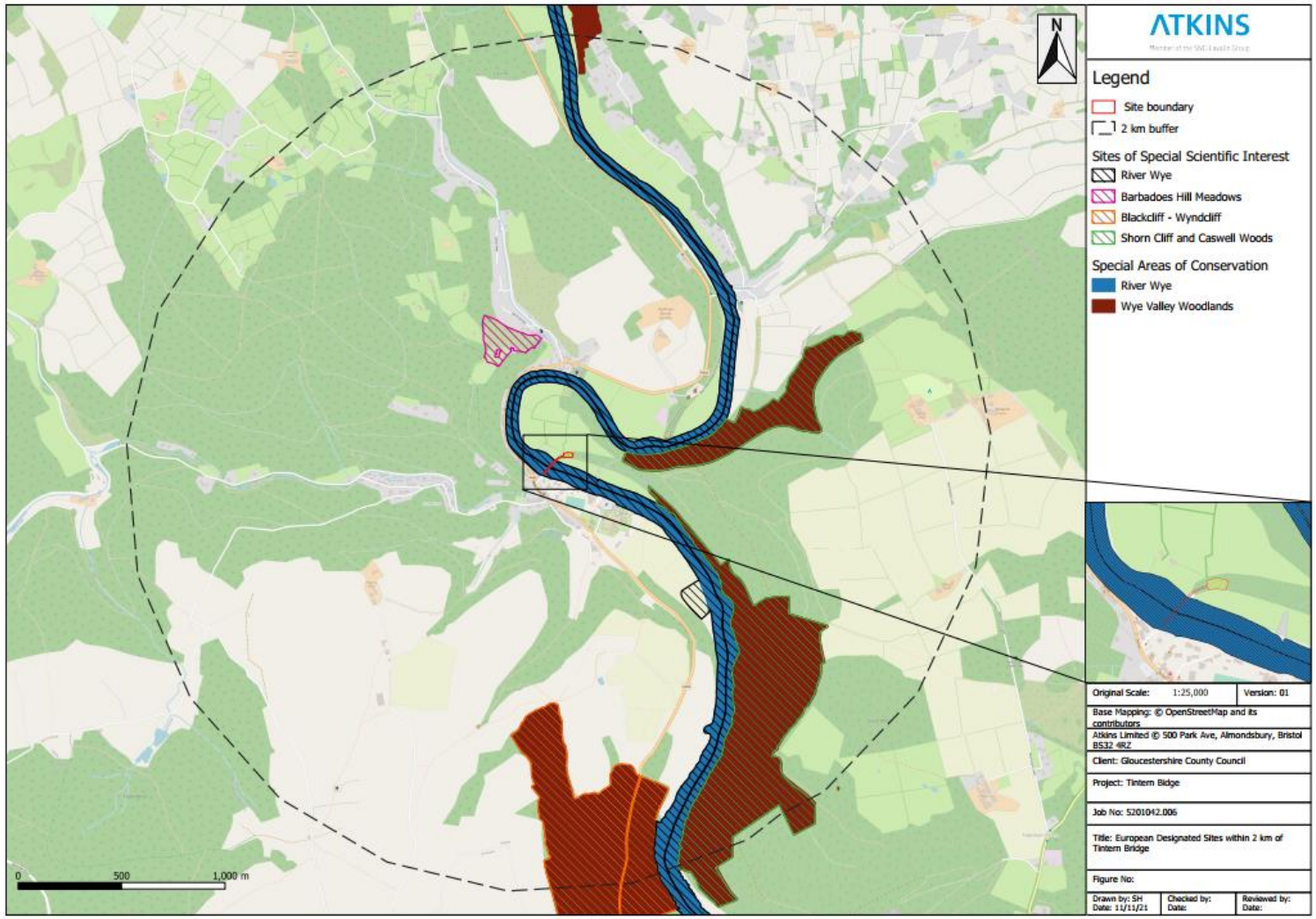
Photograph 6. View of downstream west bank

Photograph 6. View of upstream east bank

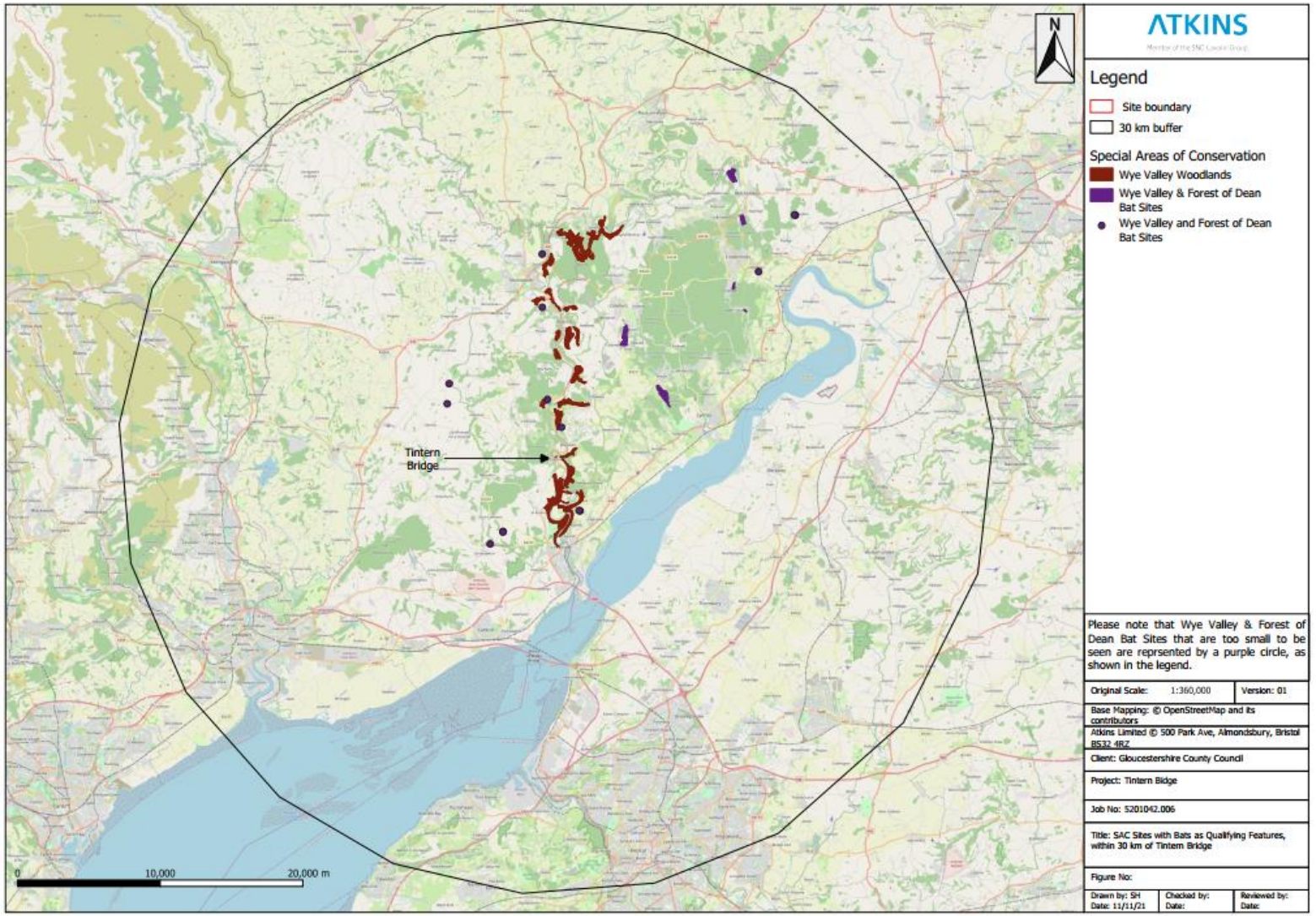
Photograph 6. View of downstream east bank

Appendix D. European Sites Location Plans

D.1. European Designated Sites Within 2 km of Tintern Wireworks Bridge



D.2. SAC Sites With Bats as a Qualifying Feature Within 30 km of Tintern Wireworks Bridge



Appendix E. Finding of no significant effects report matrix (Screening)

E.1. Table D1 Finding of no significant effects report matrix (Screening). Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC

Project name:	**Tintern Wireworks Bridge**	
European Site under consideration	Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC	
Date:	**Author (Name/Organisation):**	**Verified (Name/Organisation):**
08/12/2021	HW (Atkins on behalf of Gloucestershire County Council)	AW (Atkins on behalf of Gloucestershire County Council)
Name and location of European Site:	Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC in the Wye Valley located approximately 350 m northeast of the project.	
Description of the project	Tintern Wireworks Bridge, in Tintern, Gloucestershire carries an un-named public footpath, across the River Wye. The five-span bridge measures approximately 85m in length and 4m in width and is supported by stone abutments. The decking of the bridge comprises wooden planks and carries a public footpath. The bridge is in need of remedial works including: • The refurbishment of the wrought iron twin girders. • Installation of steel sections and new timber panels. • Installation of anchor/ pattress plate with steel rod on the southern masonry abutment/ wingwalls. • Masonry repointing/repairs. The initial main element of works comprises of cleaning the main structure using high pressure water; steel works will be cleaned to bare metal by grit blasting. Repairs to the existing wrought iron are not anticipated at this stage. The second main element to the works is the installation of 3no. steel square hollow sections (SHSs) spanning the piers and the west abutment and installation of new timber panels. The southern abutments/wingwalls will be tied together using anchor/pattress plate and steel rods to allow further longevity of the structure. Mortar repairs are expected to the west abutment, wing walls and top of the piers. All masonry repairs (as described above) will be enabled through temporary works platform (such as scaffold or similar) access. To control and manage environmental pollution the bridge superstructure (parapets and bridge deck) will be encapsulated fully. Scaffold or a similar system will be constructed to form a box that will provide a 1m minimum gap to all steel elements for painting and grit blasting operations. The encapsulation is designed specifically to prevent any contamination from engineering works to the local environment. On completion of the works, all sheeting will be carefully bagged up for safe disposal. Biosecurity Control Measures will be enforced at all times when working on or near the watercourse. A safety boat will be provided in support where appropriate and tidal water	

	levels will be monitored daily as an early warning system and appropriate action to be taken if flooding is expected. Such action would involve stopping all site activities and all equipment and material will be removed from the site and encapsulation wrapping will be removed leaving only the scaffolding poles in place to allow water to move freely through the structure. The proposed works are currently programmed for Spring to Winter 2022, taking place during daylight hours between 8:00-17:00 on weekdays only. A site compound including welfare facilities and storage area for materials is proposed to be set up on the 20 -30 m ingress and egress of the structure both on the Monmouthshire side and Gloucestershire side of the structure as well as in Forge Road, Wirework's carpark, approximately 0.5 km away from the structure for additional welfare facilities and material storage. Waste will be stored in the site compound only and will be removed and deposited at a licensed tip regularly. The bridge and the existing public right of way will be closed for the duration of the works. Transport vehicles for contractors and supervisors will be parked within the proposed site area and in the site compound. Pedestrian and farm access will not be permitted access throughout the duration of the works. Works will be carried out using a temporary works platform (such as scaffold or similar) which is proposed to be installed in March 2022. The bridge will be wrapped throughout works to prevent debris falling into the River Wye. A temporary compound is proposed to be located in a clearing within the woodland to the east of the site. Access to the bridge will be along the existing public footpath. Works are proposed to be carried out from the bridge with a temporary works platform (such as scaffold or similar) being supported by the structure itself.
Is the project directly connected with or necessary to the management of the site (provide details)?	No
Are there other projects or plans that together with the project being assessed could affect the site	No
The assessment of significance of effects	
Describe how the project (alone or in combination) is likely to affect the European Site.	No LSE have been identified for this site in relation to the Scheme. The Scheme is not directly connected with or necessary to site management for nature conservation of the Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC. No direct or indirect impacts have been identified on the qualifying bat species of the site. It is considered that there are no impact pathways by which the Scheme could have an affect on the habitats or species of this SAC. On this basis, Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC has been screened out from further assessment
Explain why these effects are not considered significant.	No direct or indirect impacts upon Wye Valley Woodlands/ Coetiroedd Dyffryn Gwy SAC have been identified and therefore no significant effects are considered likely.

List of agencies consulted: provide contact name and telephone or e-mail address.	None yet consulted.		
Response to consultation	N/A		
Data collected to carry out the assessment			
Who carried out the assessment?	**Sources of data**	**Level of assessment completed**	**Where can the full results of the assessment be accessed and viewed?**
Atkins Ltd on behalf of Gloucestershire County Council	Project information (Atkins/ Gloucestershire County Council) Publicly available designated site information – JNCC, NE and NRW websites	High level screening	This document

E.2. Table D2 Finding of no significant effects report matrix (Screening). Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC

Project name:		**Tintern Wireworks Bridge**
European Site under consideration		Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC
Date:	**Author (Name/Organisation):**	**Verified (Name/Organisation):**
08/12/2021	HW (Atkins on behalf of Gloucestershire County Council)	AW (Atkins on behalf of Gloucestershire County Council)
Name and location of European Site:		Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC located approximately 2.1 km north of the project.
Description of the project		Tintern Wireworks Bridge, in Tintern, Gloucestershire carries an un-named public footpath, across the River Wye. The five-span bridge measures approximately 85 m in length and 4 m in width and is supported by stone abutments. The decking of the bridge comprises wooden planks and carries a public footpath. The bridge is in need of remedial works including: • The refurbishment of the wrought iron twin girders. • Installation of steel sections and new timber panels. • Installation of anchor/ pattress plate with steel rod on the southern masonry abutment/ wingwalls. • Masonry repointing/ repairs. The initial main element of works comprises of cleaning the main structure using high pressure water; steel works will be cleaned to bare metal by grit blasting. Repairs to the existing wrought iron are not anticipated at this stage. The second main element to the works is the installation of 3no. steel square hollow sections (SHSs) spanning the piers and the west abutment and installation of new timber panels. The southern abutments/ wingwalls will be tied together using anchor/ pattress plate and steel rods to allow further longevity of the structure. Mortar repairs are expected to the west abutment, wing walls and top of the piers. All masonry repairs (as described above) will be enabled through temporary works platform (such as scaffold or similar) access. To control and manage environmental pollution the bridge superstructure (parapets and bridge deck) will be encapsulated fully. Scaffold or a similar system will be constructed to form a box

	that will provide a 1 m minimum gap to all steel elements for painting and grit blasting operations. The encapsulation is designed specifically to prevent any contamination from engineering works to the local environment. On completion of the works, all sheeting will be carefully bagged up for safe disposal. Biosecurity Control Measures will be enforced at all times when working on or near the watercourse. A safety boat will be provided in support where appropriate and tidal water levels will be monitored daily as an early warning system and appropriate action to be taken if flooding is expected. Such action would involve stopping all site activities and all equipment and material will be removed from the site and encapsulation wrapping will be removed only leaving the scaffolding poles in place to allow water to move freely through the structure. The proposed works are currently programmed for Spring to Winter 2022, taking place during daylight hours between 8:00-17:00 on weekdays only. A site compound including welfare facilities and storage area for materials is proposed to be set up on the 20 -30 m ingress and egress of the structure both on the Monmouthshire side and Gloucestershire side of the structure as well as in Forge Road, Wirework's carpark, approximately 0.5 km away from the structure for additional welfare facilities and material storage. Waste will be stored in the site compound only and will be removed and deposited at a licensed tip regularly. The bridge and the existing public right of way will be closed for the duration of the works. Transport vehicles for contractors and supervisors will be parked within the proposed site area and in the site compound. Pedestrian and farm access will not be permitted access throughout the duration of the works. Works will be carried out using a temporary works platform (such as scaffold or similar) which is proposed to be installed in March 2022. The bridge will be wrapped throughout works to prevent debris falling into the River Wye. A temporary compound is proposed to be located in a clearing within the woodland to the east of the site. Access to the bridge will be along the existing public footpath. Works are proposed to be carried out from the bridge with a temporary works platform (such as scaffold or similar) being supported by the structure itself.
Is the project directly connected with or necessary to the management of the site (provide details)?	No

Are there other projects or plans that together with the project being assessed could affect the site		No	
The assessment of significance of effects			
Describe how the project (alone or in combination) is likely to affect the European Site.		No LSE have been identified for this site in relation to the Scheme. The Scheme is not directly connected with or necessary to site management for nature conservation of the Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC. No direct or indirect impacts have been identified on the qualifying bat species of the site. It is considered that there are no impact pathways by which the Scheme could have an affect on the habitats or species of this SAC. On this basis, Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC has been screened out from further assessment	
Explain why these effects are not considered significant.		No direct or indirect impacts upon Wye Valley and Forest of Dean Bat Sites/ Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC have been identified and therefore no significant effects are considered likely.	
List of agencies consulted: provide contact name and telephone or e-mail address.		None yet consulted.	
Response to consultation		N/A	
Data collected to carry out the assessment			
Who carried out the assessment?	**Sources of data**	**Level of assessment completed**	**Where can the full results of the assessment be accessed and viewed?**
Atkins Ltd on behalf of Gloucestershire County Council	Project information (Atkins/ Gloucestershire County Council) Publicly available designated site information – JNCC, NE and NRW websites	High level screening	This document

E.3. Table D3 Finding of no significant effects report matrix (Screening). The Severn Estuary/ Môr Hafren SAC, Severn Estuary/ Môr Hafren SPA and Severn Estuary/ Môr Hafren Ramsar

Project name:		**Tintern Wireworks Bridge**
European Site under consideration		The Severn Estuary/ Môr Hafren SAC, Severn Estuary/ Môr Hafren SPA and Severn Estuary/ Môr Hafren Ramsar
Date:	**Author (Name/Organisation):**	**Verified (Name/Organisation):**
08/12/2021	HW (Atkins on behalf of Gloucestershire County Council)	AW (Atkins on behalf of Gloucestershire County Council)
Name and location of European Site:		The Severn Estuary/ Môr Hafren SAC, Severn Estuary/ Môr Hafren SPA and Severn Estuary/ Môr Hafren Ramsar located approximately 6.3 km east of the project.
Description of the project		Tintern Wireworks Bridge, in Tintern, Gloucestershire carries an un-named public footpath, across the River Wye. The five-span bridge measures approximately 85m in length and 4m in width and is supported by stone abutments. The decking of the bridge comprises wooden planks and carries a public footpath. The bridge is in need of remedial works including: • The refurbishment of the wrought iron twin girders. • Installation of steel sections and new timber panels. • Installation of anchor/pattress plate with steel rod on the southern masonry abutment/wingwalls. • Masonry repointing/repairs. The initial main element of works comprises of cleaning the main structure using high pressure water; steel works will be cleaned to bare metal by grit blasting. Repairs to the existing wrought iron are not anticipated at this stage. The second main element to the works is the installation of 3no. steel square hollow sections (SHSs) spanning the piers and the west abutment and installation of new timber panels. The southern abutments/wingwalls will be tied together using anchor/pattress plate and steel rods to allow further longevity of the structure. Mortar repairs are expected to the west abutment, wing walls and top of the piers. All masonry repairs (as described above) will be enabled through temporary works platform (such as scaffold or similar) access. To control and manage environmental pollution the bridge superstructure (parapets and bridge deck) will be encapsulated fully. Scaffold or a similar system will be constructed to form a box

	that will provide a 1 m minimum gap to all steel elements for painting and grit blasting operations. The encapsulation is designed specifically to prevent any contamination from engineering works to the local environment. On completion of the works, all sheeting will be carefully bagged up for safe disposal. Biosecurity Control Measures will be enforced at all times when working on or near the watercourse. A safety boat will be provided in support where appropriate and tidal water levels will be monitored daily as an early warning system and appropriate action to be taken if flooding is expected. Such action would involve stopping all site activities and all equipment and material will be removed from the site and encapsulation wrapping will be removed only leaving the scaffolding poles in place to allow water to move freely through the structure. The proposed works are currently programmed for Spring to Winter 2022, taking place during daylight hours between 8:00-17:00 on weekdays only. A site compound including welfare facilities and storage area for materials is proposed to be set up on the 20 -30 m ingress and egress of the structure both on the Monmouthshire side and Gloucestershire side of the structure as well as in Forge Road, Wirework's carpark, approximately 0.5 km away from the structure for additional welfare facilities and material storage. Waste will be stored in the site compound only and will be removed and deposited at a licensed tip regularly. The bridge and the existing public right of way will be closed for the duration of the works. Transport vehicles for contractors and supervisors will be parked within the proposed site area and in the site compound. Pedestrian and farm access will not be permitted access throughout the duration of the works. Works will be carried out using a temporary works platform (such as scaffold or similar) which is proposed to be installed in March 2022. The bridge will be wrapped throughout works to prevent debris falling into the River Wye. A temporary compound is proposed to be located in a clearing within the woodland to the east of the site. Access to the bridge will be along the existing public footpath. Works are proposed to be carried out from the bridge with a temporary works platform (such as scaffold or similar) being supported by the structure itself.
Is the project directly connected with or necessary to the management of the site (provide details)?	No

Are there other projects or plans that together with the project being assessed could affect the site		No	
The assessment of significance of effects			
Describe how the project (alone or in combination) is likely to affect the European Site.		The Severn Estuary/ Môr Hafren SAC, Severn Estuary/ Môr Hafren SPA and Severn Estuary/ Môr Hafren Ramsar is located approximately 5.5 km from the Scheme at their nearest point, but approximately 15 km downstream. The only pathway for potential impacts would be via a pollution event from the proposed works, which lie just within the extents of the Severn Estuary tidal range, within the River Wye.	
Explain why these effects are not considered significant.		Given the small-scale and highly localised nature of the repair works, the distance from the Scheme, plus the very large dilution rates that would be achieved in the River Wye/ Afon Gwy, it is considered that the impact pathway is sufficiently weakened as to make it highly unlikely that there could be any discernible effects on the Severn Estuary/ Môr Hafren SAC, SPA and Ramsar site. Therefore, these sites have been screened out from further assessment.	
List of agencies consulted: provide contact name and telephone or e-mail address.		None yet consulted.	
Response to consultation		N/A	
Data collected to carry out the assessment			
Who carried out the assessment?	**Sources of data**	**Level of assessment completed**	**Where can the full results of the assessment be accessed and viewed?**
Atkins Ltd on behalf of Gloucestershire County Council	Project information (Atkins/ Gloucestershire County Council) Publicly available designated site information – JNCC, NE and NRW websites	High level screening	This document

E.4. Table D1 Finding of significant effects report matrix (Screening). River Wye/ Afon Gwy

roject	Tintern Wireworks Bridge	
European Site under consideration	River Wye/ Afon Gwy	
Date:	**Author (Name/Organisation):**	**Verified (Name/Organisation):**
08/12/2021	Hannah Whitfield (Atkins on behalf of Gloucestershire County Council)	AW (Atkins on behalf of Gloucestershire County Council)
Description of project		
Size and scale (road type and probable traffic volume)	Works limited to Tintern Wireworks Bridge (spanning the River Wye/ Afon Gwy) approximately 85 m in length and 4 m in width. Project will not result in any changes to traffic volume. Currently used by a small number of local properties for access only.	
Land-take	No land take from SAC as a result of the project.	
Distance from the European Site or key features of the site (from edge of the project assessment corridor)	Within the site	
Resource requirements (from the European Site or from areas in proximity to the site, where of relevance to consideration of impacts)	No resource requirements from River Wye/ Afon Gwy. Construction compound to be built in area of bare ground in proximity to River Wye/ Afon Gwy, approximately 60 m northeast.	
Emissions (e.g., polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution)	It is possible that any spillages during repairs/ repainting could enter the River Wye/ Afon Gwy. Repair works include grit-blasting of steel and removal of paint which is likely to generate low levels of dust and potential localised deposition on the water surface/ vegetation leading to smothering and contamination.	
Excavation requirements (e.g. impacts of local hydrogeology)	None required.	
Transportation requirements	Changes to air quality due to vehicle emissions from works vehicles is considered unlikely relative to the baseline. The bridge will provide access for some local properties, but it is not anticipated that the project will result in high levels of vehicle.	
Duration of construction, operation, etc.	Estimated May 2022 to December 2022	
Other	None.	
Description of avoidance and/or mitigation measures		
Nature of proposals	Compliance with pollution prevention guidelines, Construction Industry Research and Information	

	Association (CIRIA) C762 Environmental good practice[60] and wrapping of the bridge. The main repair works will take place within a fully encapsulated scaffold which will be erected from the bridge top and suspended beneath and is designed specifically to contain any dust/ debris and prevent any contamination from engineering works to the local environment. All gaps around scaffold tubes will be sealed prior to grit blasting to ensure dust is not released. The works to the piers and main structure, via scaffolding platforms (or similar), will take place using Monoflex polythene sheeting and debris netting arranged to fill any voids between the platforms and the watercourse which will prevent any contamination to the river. On completion of the works, all sheeting will be carefully bagged up for safe disposal. This same process will be implemented for the re-painting of the piers following their cleaning. Site vehicles will be confined to the site compound area, approximately 30 m west of the SAC boundary, with an additional area for vehicles, materials and equipment and at Forge Road (Wireworks carpark), approximately 0.5 k m away from the structure. This will prevent pollution incidents of the river resulting from vehicle leaks. The site compound will be fenced and gated to allow access to site operatives during daylight working hours and no night-time working will be required. This will prevent disturbance of qualifying feature, otter, during their key periods of activity. With the risk of air pollution being minimal, the short section of SAC adjacent to the Scheme, and with the implementation of the mitigation measures outlined above, it is considered unlikely that changes in air quality would have any effect upon the integrity of the River Wye/ Afon Gwy SAC, including its qualifying features.
Location	Mitigation will be on Tintern Wireworks Bridge spanning the River Wye/ Afon Gwy SAC.
Evidence for effectiveness	Compliance with pollution prevention guidelines, Construction Industry Research and Information Association (CIRIA) C762 Environmental good practice[60] are industry standards for pollution prevention. Encapsulation of bridges to prevent falls is a standard industry practice. A pre-works check for otter carried out by an ecologist will remove the risk of works disturbing nearby otter holts without a licence.

[60] Construction Industry Research and Information Association (CIRIA). *C762 Environmental good practice on site pocket book. 4th edition*. Published 2016.

	No night-time working will ensure that nocturnal species are not disturbed during periods of key activity. Fencing the site compound will remove the risk of nocturnal species, including otter entering outside of working hours and becoming entrapped or injured/harmed.
Mechanism for delivery (legal conditions, restrictions or other legally enforceable obligations)	Avoidance and mitigation measures listed above are to be agreed with the client ahead of works commencing. The Principal Contractor on site will be responsible for installing the proposed wrapping of the bridge and for complying with pollution prevention guidelines, Construction Industry Research and Information Association (CIRIA) C762 Environmental good practice[60].
Characteristics of European Site(s)	
European Site size	2147.64 ha
Key features of the European Site including the primary reasons for selection and any other qualifying interests	Annex I habitats present which are listed a primary qualifying feature of the SAC: • H3260 - Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation. Annex I habitats present that are listed as a qualifying feature of the site (but not the primary reason for its designation): • H7140 Transition mires and quaking bogs. • Annex II species present which are listed a primary qualifying feature of the SAC: • S1092 White-clawed (or Atlantic stream) crayfish; • S1095 Sea lamprey (Petromyzon marinus); • S1096 Brook lamprey (Lampetra planeri); • S1099 River lamprey (Lampetra fluviatilis); • S1103 Twaite shad (Alosa fallax); • S1106 Atlantic salmon (Salmo salar); • S1163 Bullhead (Cottus gobio); and • S1355 Otter (*Lutra lutra*). Annex II species present that are listed as a qualifying feature of the site (but not the primary reason for its designation): • S1102 Allis shad (*Alosa alosa*).
European Site conservation objectives[61][62] – where these are readily available	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

[61] Natural England (2018) European Site Conservation Objectives for River Wye SAC. Available here: http://publications.naturalengland.org.uk/publication/6096799802589184
[62] https://naturalresources.wales/media/682835/river-wye-sac-core-management-plan-approved.pdf

	• The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site. The conservation objectives should be read in conjunction with the accompanying Supplementary Advice document[63], which provides more detailed advice and information to enable to application and achievement of the Objectives set out above.
Assessment criteria	
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Site. **Construction Phase:** • It is possible that any spillages during repairs/ repainting could enter the River Wye/ Afon Gwy; • Changes to air quality due to vehicle emissions from works vehicles is considered unlikely relative to the baseline, given the bridge provides access for some local properties but is not anticipated to receive high levels of vehicle use. However, repair works include grit-blasting of steel and removal of paint which is likely to generate low levels of dust and potential localised deposition on the water surface/ vegetation leading to smothering and contamination; • Otter may be disturbed during construction due to the presence of people and vehicles/ plant in proximity to watercourses within the SAC and noise and vibration from the cleaning, repair and repainting works; • Otter are unlikely to become entrapped or injured within the site compound despite its proximity to the watercourse as it will be fenced, and access gates will be closed overnight during key periods of otter activity, preventing access.	
Initial Assessment	
Reduction of key habitat	None
Disturbance to key species	Potential for disturbance to key species. Otter may be disturbed during construction due to the presence of people and vehicles/ plant in proximity to watercourses within the SAC and noise and vibration from the cleaning, repair and repainting works. However, the environment is already subject to regular disturbance from pedestrian usage of the bridge and riparian use by boats. No night-time works are being undertaken as it is not possible to safely access the bridge or carry out the required task at night and so otter will not be disturbed during their key periods of activity.

[63] Natural England (2019) River Wye/ Afon Gwy Special Area of Conservation (SAC) Site Code: UK0012642. Available here: http://publications.naturalengland.org.uk/publication/6096799802589184

Habitat or species fragmentation	None
Reduction in species density	Potential for reduction in species density. The proposed works could have effects on population and distribution of otter within the SAC is disturbance were to prevent breeding efforts.
Changes in key indicators of conservation value (water quality, etc)	Potential for Changes in key indicators of conservation value. It is possible that any spillages during repairs/ repainting could enter the River Wye/ Afon Gwy; Changes to air quality due to vehicle emissions from works vehicles is considered unlikely relative to the baseline, given the bridge provides access for some local properties but is not anticipated to receive high levels of vehicle use. However, repair works include grit-blasting of steel and removal of paint which is likely to generate low levels of dust and potential localised deposition on the water surface/ vegetation leading to smothering and contamination.
Climate change	There will be no impacts on climate change as a result of the works.
Describe any likely impacts on the European Site as a whole in terms of:	
Interference with key relationships that define the function of the site	None
Interference with the key relationships that define the structure of the site	None
Indicate the significance as a result of the identification of impacts set out above in terms of:	
Reduction of habitat area	None
Disturbance to key species	No significant impact with mitigation proposed
Habitat or species fragmentation	None
Loss	None
Fragmentation	None
Disruption	None
Disturbance	Potential for disturbance
Change to key elements of the site (e.g. water quality, hydrological regime etc.)	Potential for changes to key elements of the site
Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	
Outcome of screening stage	Significant effects likely based on screening
Are the appropriate statutory environmental bodies in agreement with this conclusion (delete as appropriate and attach relevant	N/A. Not yet contacted

correspondence).	

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