

Welsh National Marine Plan Assessment

Introduction

The Welsh Government developed the first Welsh National Marine Plan (WNMP), which was adopted on 12 November 2019. The plan sets out Welsh Government's policy for the next 20 years for the sustainable use of our seas.

The WNMP provides an integrated set of objectives and policies for the sustainable development of Wales' marine plan area. The general cross-cutting policies cover subject matter which is relevant to all determinations and operate alongside the sector specific policies relating to activities. All of the policies work together to support the achievement of the Plan's vision and objectives. As such, none of the objectives, policies or supporting text should be considered or applied in isolation.

As part of Band 2 and 3 Marine Licence applications, Natural Resources Wales must make decisions on licence applications in accordance with the marine plan.

AmcoGiffen submitted a Band 2 Marine Licence application in 2022 and Marine Licence CML2227 issued, to permit maintenance and refurbishment works to Dovey Junction Viaduct, over the Afon Dyfi that falls within the Dyfi Estuary in West Wales.

This WNMP Assessment is to accompany a new Band 2 Marine Licence application. This application dated January 2023 is for Phase 2B works, which will complete the superstructure repairs and refurbishment.

This document supports the assessment of the Dovey Junction Viaduct Project against the WNMP objectives and policies. The outcomes are contained within IW01412 – Dovey Junction Phase 2B WNMP Signposting Document.

Methodology

Sources of information

A primary source of information used to complete this assessment is the Wales Marine Planning Portal, which contains relevant spatial data and maps. The Portal identified a number of aspects that require consideration against the Project, such as:

- Existing and future potential use;
- Whether areas of relevance to the project are already subject to pre-existing licences, option and exploration agreements or applications;
- Identifying potential conflicts and opportunities;
- Identifying opportunities to avoid, minimise and/or mitigate adverse impacts to achieve compatibility with other users; and,
- To consider whether proposals can coexist with other, existing sector developments or activities.

Other sources of evidence included Network Rail engineers' reports, the Water Framework Directive Assessment and the 2022 HRA produced for this project.

In applying the WNMP, it was considered that all policies are relevant and considered on a case by case basis. Through the Wales Marine Planning Portal it was possible to exclude sector safeguarding policies. The assessment was carried out as per the guidance, shown in the figure below.

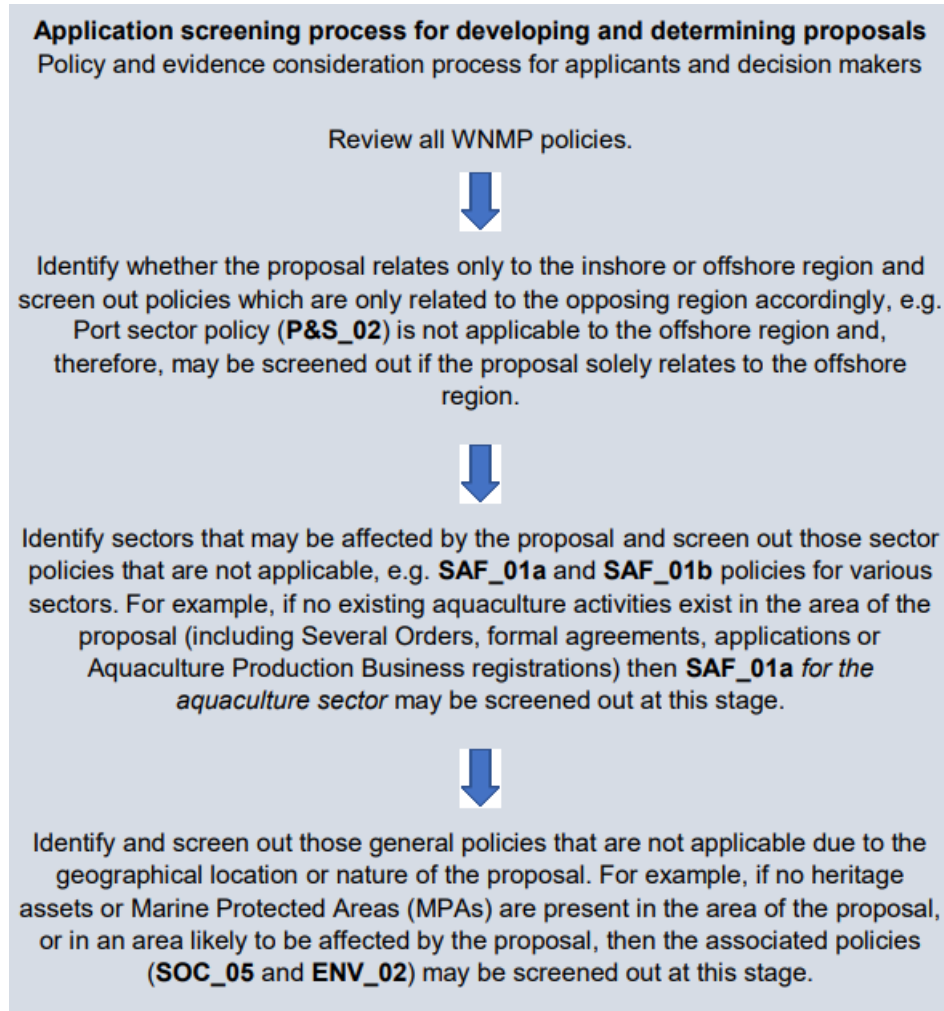


Figure 1: Understanding and applying the policies of the WNMP

WNMP Assessment

Project Title:	Dovey Junction Phase 2B
Project Scale:	Localised
Project Type:	Dovey Junction Viaduct No 1 is a 21-span viaduct, 17 No Timber spans and 4 No Metallic spans. The viaduct carries a single bi-directional track from Dovey Junction to Pwllheli over a tidal water course. The project scope is to deliver structure refurbishment / element replacement to extend the Viaduct's design life.
Project Location:	DJP 79m 16ch - Dovey Junction Viaduct

Background information

Dovey Junction Viaduct was originally constructed in circa 1863, with the timber spans rebuilt in 1899 and metallic portion rebuilt or reconstructed in 1914. Span 1-5 were renewed in 1953 with span 1 replaced in 2019 as “Urgent Repairs”. The structure is located on the Dovey Junction to Pwllheli line (DJP) over the River Dovey (OS Grid Reference SN 694979), approximately 5 miles south-west of Machynlleth.

The single-track structure comprises of 17no. timber spans & 17no. timber trestles and 4no. steel spans & 5no. cast-iron trestles; timber trestles no1 & no22 are ‘combined’ trestle & abutment arrangements. The timber decks comprise of 4no. main beams, one under each longitudinal timber & rail and one at either edge of the deck. The main beams each bear onto a timber ‘corbel’ at both ends, each supported on a timber crosshead member which, in turn, are supported on the timber trestles; spans no5 & no10 bear onto the cast-iron trestles. Transverse timber decking spans across the main beams. The steel decks comprise of 2no. transverse-braced stiffened main beams, one under each rail, and steel cross-girders. The main beams bear onto cast-iron crosshead members supported on cast-iron twin-trestles. Timber decking spans longitudinally across the cross-girders.

The timber substructure consists of the timber crossheads on timber piles with timber diagonal bracing and timber lower-level walings - the pile format is generally of 4no. pile/columns, however some have ‘twin’ outer piles and some have an additional 2no. outrigger piles. The piles are braced with 2no timber diagonals and 2no. low-level timber walings.

The cast-iron substructure comprise of twin-trestles (3no. of) and single-trestles (2no. of) of 4no or 6no. circular columns supporting cast-iron crossheads (two or one, respectively) with the columns, in turn, supported on a low-level cross-member which is itself supported on 4no. or 6no. circular stub piles or stools. The main beams bear onto cast-iron bearing blocks except for trestle no10 where they bear directly onto the crosshead. All trestles have bracing ties between the middle two columns of each row and trestles no7 & no8 are braced across the outer columns of each row. The structure carries the single bi-directional line of the DJP, which has a published route availability of RA5 at 90km/h for class 15x trains, with all other trains being restricted to 15km/h.

As part of the 2019 GRIP Stage 3 Option Selection Report, a thorough examination and condition survey of the structure was undertaken by Cass Hayward Consulting Engineers. A schedule of specific defects affecting all structural elements of the structure was produced. The refurbishment and repairs began in September 2022, under CML2227. The aim of this new Marine Licence application is to complete the planned refurbishment and repairs.

The reason for undertaking this renewal scheme is as follows:

- Detailed examinations, condition surveys and assessments have identified deterioration of the structural timber elements of the viaduct – these elements have been identified as Priority 1, 2, 3 in accordance with the Network Rail Timber Viaduct Strategy Document.
- In addition, numerous connections & fixings and non-structural elements are defective.

The objective of this renewal scheme is to: -

- Undertake the replacement, or repair, of all structural and non-elements in accordance with the Timber Viaduct Strategy Document; and
- Maintain or reinstate the structure to the capacity / strength of the original design or its current RA of Line requirements (whichever is greater).
- Upon replacement of the existing timbers with greenheart, the capacity of the structure will meet or exceed that required for RA5 plus Class 66 locomotives.

This strategy is founded on Network Rail objective of not wishing to lift the deck more often than every 5-10 years (in the short term), increasing towards every 25 years as a greater proportion of the railway load carrying members are replaced with Greenheart/Ekki timbers.

The basis of the strategy is to reinstate the bridge to at least the strength of the original design.

The appendix WNMP Signposting Document provides justification for how WNMP policies apply to the Project and how any potential impacts are managed through the avoid-minimise-mitigate decision hierarchy.

Avoid	Acting at source to plan, design and deliver proposals to prevent an adverse impact from occurring. To achieve this, where adverse impacts are identified, the proposal should be altered so that it no longer exerts a pressure, or the pressure produced can no longer be received by a receptor. Examples of avoidance include: not proceeding with the proposal; relocating the proposal; redesign to materials or techniques that have no adverse impact.
Minimise	Acting at source to plan and design proposals to reduce adverse impacts to the smallest possible amount or degree. Minimisation is a reduction in the level of pressure generated. Examples of minimisation include: using materials that have a lower impact; reducing the scale of the development
Mitigate	Where adverse impacts from pressures cannot be avoided or minimised at source and receptors are exposed to those pressures, action should be taken to make the consequences of the impacts less severe. Mitigation is a reduction of how a given pressure level is experienced by the receptor. Examples of mitigation include: timing restrictions to avoid sensitive periods or other activities; introducing measures to reduce the distribution and spread of any impacts.

Appendix 1: IW01412 - Dovey Junction Phase 2B WNMP Signposting Document

Appendix 2: IW01412 - Dovey Junction Phase 2B Marine Planning Aspects Map