

Rhuddlan Steps Water Framework Directive Assessment

Final report

October 2024

Prepared for:

MPH Construction Ltd



www.jbaconsulting.com

Document Status

Issue date	October 2024
Issued to	Daniel Overson
BIM reference	NND-JBA-XX-XX-RP-EN-0001-Rhuddlan_Steps_WFD
Revision	A1 C01
Prepared by	Georgie Troy Assistant Geomorphologist Rachael Drabble BSc MSc Principal Environmental Consultant
Reviewed by	Natasha Todd-Burley BSc PhD FRGS CGeog (Geomorph) Principal Geomorphologist Jonathan Harrison BSc MSc MCIEEM Senior Ecologist
Authorised by	Matthew Hemsworth BSc MSc MCIWEM C.WEM Project Director

Carbon Footprint

JBA is committed to championing sustainability and has made The Ten Principles of the UN Global Compact part of its culture and operations. We have a Group-wide objective to be a Net Zero carbon emissions business.

The format of this report is optimised for reading digitally in pdf.

Contract

JBA Project Manager	Ellie Smith BSc MSc
Address	1 Station Rd, Coleshill, Birmingham B46 1HT
JBA Project Code	2024s1026

This report describes work commissioned by MPH Construction Ltd, by an instruction dated 4th July 2024. The Client's representative for the contract was Daniel Overson of MPH Construction Ltd. Georgie Troy and Jonathan Harrison of JBA Consulting carried out this work.

Purpose and Disclaimer

Jeremy Benn Associates Limited ("JBA") has prepared this Report for the sole use of MPH Construction Ltd and its appointed agents in accordance with the Agreement under which our services were performed.

JBA has no liability for any use that is made of this Report except to MPH Construction Ltd for the purposes for which it was originally commissioned and prepared.

No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by JBA. This Report cannot be relied upon by any other party without the prior and express written agreement of JBA.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by JBA has not been independently verified by JBA, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken between (August and October 2024 and is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

JBA disclaims any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to JBA's attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. JBA specifically does not guarantee or warrant any estimates or projections contained in this Report.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

Copyright

© Jeremy Benn Associates Limited 2024

Contents

1	Introduction	1
1.1	Background	1
1.2	Project description	1
1.3	Purpose of the report	3
2	Baseline conditions	8
2.1	Relevant WFD waterbodies	8
2.2	Screening Outcome: Water Bodies	9
2.3	North Wales coastal waterbody	10
2.4	Gele river waterbody	12
2.5	Protected areas, priority habitats and invasive non-native species	13
2.6	Summary	14
3	WFD Scoping Assessment	15
3.1	Overview	15
3.2	Scoping Assessment	16
3.3	Impacts of the Proposed Works on Protected Sites	24
4	WFD Impact Assessment	25
4.1	Impact Assessment	25
4.2	WFD Assessment Objectives	27
5	Discussion and Conclusions	28
5.1	Assessment Summary	28
5.2	Scheme Recommendations/ Key Considerations	29
5.3	Conclusions	29

List of Figures

Figure 1-1: Site location and proposed works	2
--	---

List of Tables

Figure 1-2: WFD assessment process flow chart	6
Table 2-1: WFD waterbodies summary	8
Table 2-2: Water Body Screening Outcome	9
Table 2-3: WFD quality elements and status for North Wales coastal waterbody	10
Table 2-4: WFD quality elements and status for Gele river waterbody	12
Table 3-1: Assessment of the Proposed Works against the Biological Quality Elements - Gele	16
Table 3-2: Assessment of the Proposed Works against the Hydromorphological Quality Elements - Gele	16
Table 3-3: Assessment of the Proposed Works against the Physico-Chemical Quality Elements of the Gele Water Body	20
Table 3-4: Assessment of the Proposed Works against the Biological Quality Elements - North Wales	21
Table 3-5: Assessment of the Proposed Works against the Hydromorphological Quality Elements - North Wales	22
Table 3-6: Assessment of the Proposed Works against the Physico-Chemical Quality Elements - North Wales	23
Table 3-7: Assessment of the Proposed Works against the Chemical substances status of the North Wales coastal water body	24
Table 3-8: Assessment of the Proposed Works on Protected Sites	24
Table 4-1: Impacts and Mitigation Measures - All waterbodies	25
Table 4-2: Assessment of the Proposed Works against the WFD Objectives	27

Abbreviations

DIN.....	Dissolved Inorganic Nitrogen
DO.....	Dissolved Oxygen
DrWPA.....	Drinking Water Protected Area
EC	European Community
INNS.....	Invasive Non-Native Species
NGR	National Grid Reference
RBMP	River Basin Management Plan
SPA.....	Special Protection Area for birds, protected under the EU Habitats Directive
WFD	Water Framework Directive

1 Introduction

1.1 Background

This Water Framework Directive (WFD) assessment has been prepared to inform the development and design of the like-for-like replacement of three sets of access steps at Towyn Beach, North Wales.

The report has been prepared following a range of guidance for WFD assessment:

- Water Framework Directive assessment: estuarine and coastal waters – How to assess the impact of your activity in estuarine (transitional) and coastal waters for the Water Framework Directive (WFD), 9 October 2023, Environment Agency. Available at: <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>
- Local Authority services and the water environment: Advice note on the Water Framework Directive, Natural Resources Wales. Available at: <https://naturalresources.wales/media/2627/wfd-docs-eng.pdf>

It includes key elements of the Scoping Template provided within the Environment Agency Guidance (2023), which clearly sets out all potential risks to the WFD receptors associated with the proposed development. The Scoping Template has been modified to enable consideration of WFD groundwater waterbodies in addition to surface waterbodies. Data on the status of WFD waterbodies has been obtained from the Water Watch Wales website¹ and the Multi-Agency Geographic Information for the Countryside (MAGIC) website².

1.2 Project description

1.2.1 Project overview

A WFD Assessment is required to consider the impact of the like-for-like replacement of three sets of access steps from the promenade to the beach in Towyn, North Wales. The works will take place in three locations (see Figure 1-1 below) along the promenade at NGR: SH 96694 79707 (Staircase 1), NGR: SH 97050 79870 (Staircase 2) and NGR: SH 97489 80121 (Staircase 3). There is an approximate distance of 400m between Staircases 1 and 2, and approximately 500m distance between Staircases 2 and 3. The study area encompasses coastal waters (North

1 NRW (2022) Water Watch Wales. Available at: <https://waterwatchwales.naturalresourceswales.gov.uk/en/> (Accessed: 3 October 2024)

2 Natural England (2024) MAGIC. Available at: <https://magic.defra.gov.uk/MagicMap.aspx> (Accessed 3 October 2024)

Wales waterbody) transitional and river waterbodies including the River Clwyd and River Gele.

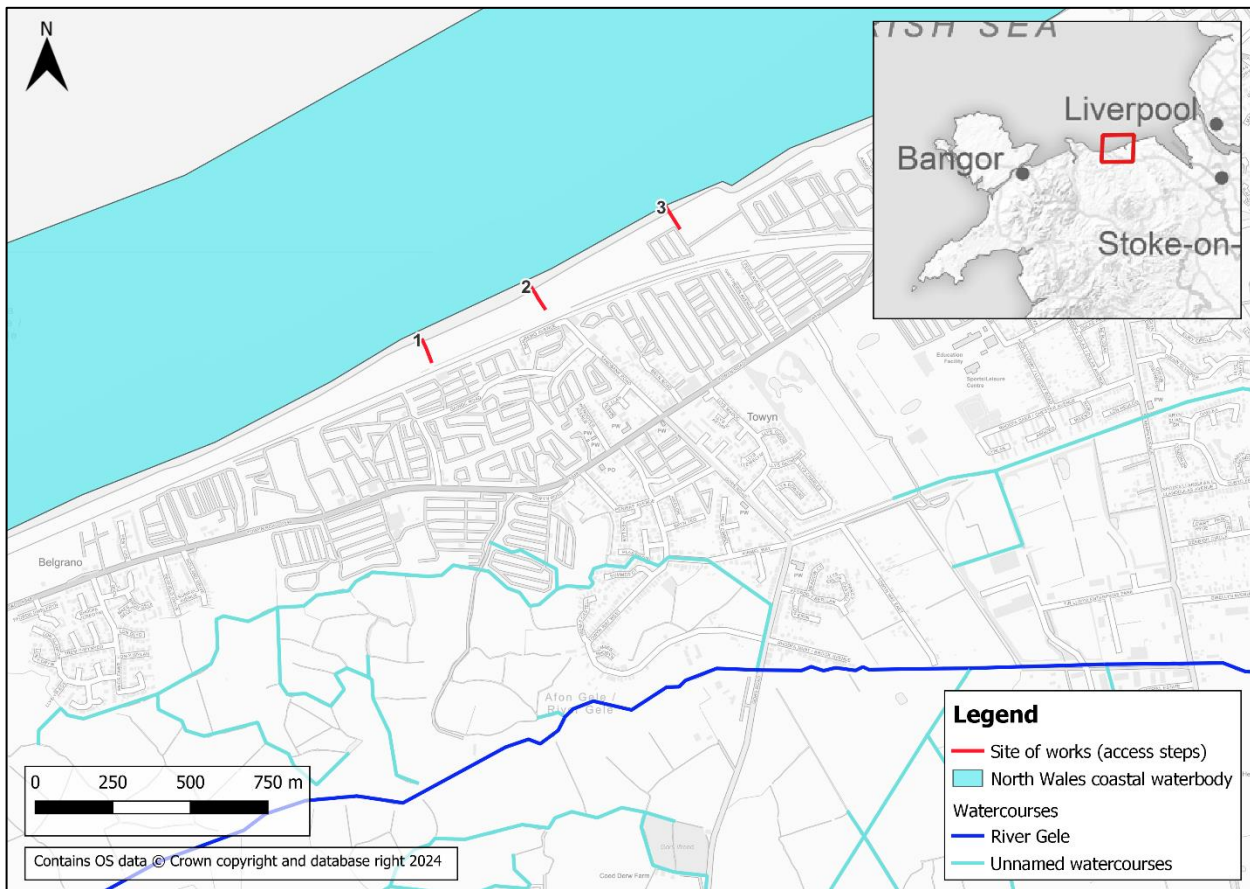


Figure 1-1: Site location and proposed works

1.2.2 Proposed Works

The proposed works include:

- The like-for-like replacement of three sets of access steps from the promenade to the beach in Towyn, North Wales.
- Concrete pre-cast units will be installed at each of the three sets of access steps
- Key Klamp handrails will be installed at each of the three sets of access steps

Further information pertaining to the design of the access steps can be seen in the following documents which will be made available with this WFD:

- 23047W-DRG-006 B02
- 23047W-DRG-002 B01
- 23047W-DRG-000 B02

1.3 Purpose of the report

1.3.1 Scope of the WFD Assessment

The WFD (2000/60/EC) is implemented in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, which revoke and replace the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The framework for delivering requirements of the WFD is through the River Basin Management Plan (RBMP).

The Regulations require that Environmental Objectives are set for all surface (including river, lake, coastal and transitional waters and groundwaters in England and Wales) to enable them to achieve a 'Good' status by a defined date. These Environmental Objectives are listed below:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters.
- Aim to achieve at least good status/potential for all water bodies by 2021. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status/potential by 2027.
- Meet the requirements of Water Framework Directive Protected Areas.
- Promote sustainable use of water as a natural resource.
- Conserve habitats and species that depend directly on water.
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment.
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants.
- Contribute to mitigating the effects of floods and droughts.

Surface waterbody status is made up of its ecological status and its chemical status. Ecological status is defined by a series of biological 'quality elements' and physico-chemical, hydromorphological, and chemical 'supporting elements' (which support the biological elements). Chemical status comprises a series of priority substances and other pollutants listed in the Environmental Quality Standards Directive (EQSD). These quality elements are taken from Annex V of the EQSD.

The status of all relevant quality elements is classified according to five categories: 'High', 'Good', 'Moderate', 'Poor' and 'Bad'. The overall status of a waterbody is determined by the lowest elements status e.g., if all biological quality elements and supporting elements are at 'Good' status, except for one, which is at 'Moderate' status, then the ecological status is 'Moderate' and the overall status is 'Moderate'. Published guidance requires that all quality elements need to be considered as part of a WFD assessment.

Groundwater waterbody status is defined by its 'quantitative status' and its 'chemical status'. Two classes are attributed to both quantitative and chemical status: 'Good'

and 'Poor'. Both elements need to be at good status before the waterbody can be classified as 'Good'.

Under the WFD, Heavily Modified Waterbodies (HMWB) are bodies of water that are substantially changed in character due to physical alterations by human activity and cannot meet 'Good Ecological Status' (GES). Therefore, mitigation measures are set for the waterbody so that it achieves 'Good Ecological Potential' (GEP). This assessment therefore must consider whether the proposed scheme will conflict with the measures in place now or planned for the future, and whether this could affect the status of the hydromorphological quality elements (and ultimately the status of the waterbody).

1.3.2 Small non-reportable waterbodies

All waterbodies are protected under WFD. This includes stretches of water considered too small to be a formal WFD waterbody, such as ditches, small streams, and brackish lagoons. As such, deterioration of such water should be prevented. In the absence of any classification data relating to these waterbodies, it should be assumed that they are at 'Good' status. Therefore, any proposed development that could affect such a waterbody should be assessed to determine whether it could cause deterioration from good status. There are unnamed watercourses within the study area, as shown in Figure 1-1.

1.3.3 Protected areas, priority habitats and invasive non-native species

Published guidance states that the WFD assessment must also consider the potential impacts on the following:

- Protected areas – these are defined under Article 6 of the Directive and include the following:
 - Areas designated for the abstraction of water for human consumption (Drinking Water Protected Areas);
 - Areas designated for the protection of economically significant aquatic species (Freshwater Fish and Shellfish);
 - Bodies of water designated as recreational waters, including areas designated as Bathing Waters;
 - Nutrient-sensitive areas, including areas identified as Nitrate Vulnerable Zones under the Nitrates Directive or areas designated as sensitive under Urban Waste Water Treatment Directive (UWWTD); and
 - Areas designated for the protection of water-dependent habitats or species, including relevant Natura 2000 sites.
- Priority Habitats – these are “habitats of principal importance for the conservation of biodiversity”, which are defined under Section 7 of the Environment (Wales) Act 2016 in Wales. Detailed assessment is required if a proposed development would significantly impact on a priority habitat that is critical to the ecological

health of a waterbody i.e., directly impacts habitats that are critical to the individual biological quality elements.

- Invasive non-native species (INNS) – assessment of INNS is required if a development could cause the introduction or spread of INNS into a waterbody.

1.3.4 Approach to WFD Assessment

All new activities in the water environment need to take account of the requirements of the WFD. For a project or activity to be compliant with the WFD, it should demonstrate that:

- There is no risk of it causing a deterioration in the status of any element; in addition for groundwater, it will limit or prevent the input of pollutants;
- There is no risk of it preventing WFD protected areas from achieving their objectives;
- It will not jeopardise any waterbody from achieving good status/potential; and
- It will contribute to the protection, enhancement, and restoration of waterbodies.

Therefore, this WFD assessment aims to determine whether the proposed development would have the potential to cause or contribute to the deterioration in status of a WFD waterbody or inhibit a waterbody from achieving its status objective. It also assesses the potential for the development to contribute to the objectives of the WFD.

The assessment identifies all activities that will take place as part of the proposed development, during both construction and operation, and where risks of an impact on the WFD quality elements might arise due to these activities.

This assessment follows published good practice guidance and has been undertaken following a staged approach (summarised in Figure 1-2):

- Stage 1: screening – to determine whether any activities associated with the proposed development do not require further consideration i.e., do not need to go through the scoping or impact assessment stages because there is no more than a low risk of a potential impact on a waterbody;
- Stage 2: scoping – identifies the potential risks associated with the proposed activities and the WFD receptors that are at risk i.e., those risks that need impact assessment; and
- Stage 3: impact assessment – a detailed assessment of the potential impacts of each activity, including consideration of ways to avoid or minimise impacts, and possible enhancement opportunities, to determine whether an activity may cause deterioration or jeopardise the waterbody from achieving good status.

A more detailed WFD assessment would be required if it cannot be concluded that the proposed development would not cause deterioration or inhibit the objective status of a waterbody. Further to this and in line with WFD requirements, there would be a need to apply the WFD Article 4.7 test to seek approval for progression of the development

if, after the full WFD assessment (including the implementation of mitigation measures), it cannot be determined that the development would not cause deterioration to a waterbody or prevent it from achieving its status objectives.

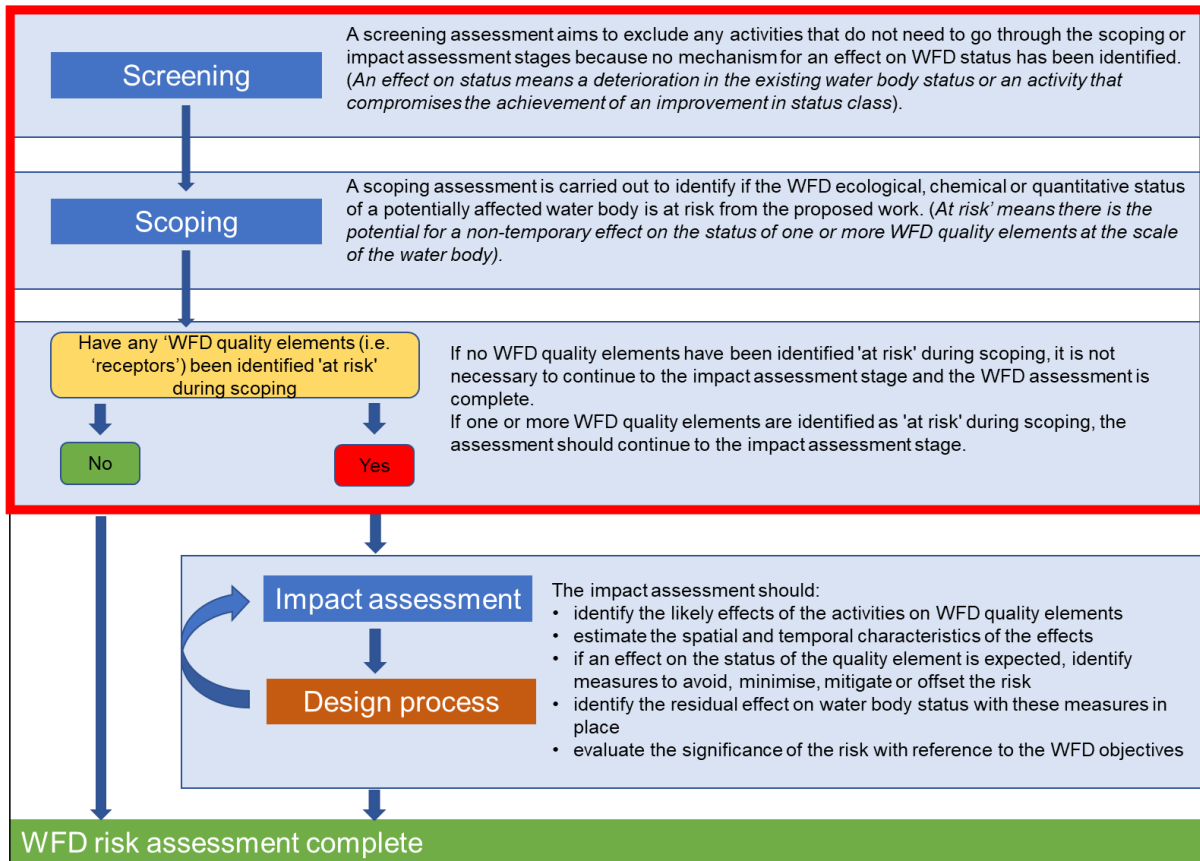


Figure 1-2: WFD assessment process flow chart

1.3.5 Cumulative and in-combination effects

Good practice requires that the proposed scheme is assessed for potential cumulative and in-combination effects. Cumulative impacts are multiple impacts on the same waterbody quality element that arise from the proposed development together with those from all developments that have been built and are operational.

In-combination impacts are those impacts that may arise from the proposed development in-combination with other plans and projects proposed/consented but not yet built and operational i.e., those developments that are separate from the baseline. These include:

- Activities started but not yet completed;
- Activities consented but not started;
- Ongoing activities subject to repeated authorisations (e.g., annual licenses);
- Application submitted but not yet determined; and

- Activities not requiring consent, but which have been approved by the relevant competent authority.

As the proposed scheme is limited in scale, it is not considered to have any cumulative or in-combination effects with other developments.

2 Baseline conditions

2.1 Relevant WFD waterbodies

The Water Watch Wales website indicates that the proposed scheme lies within the 'North Wales coastal waterbody' (WFD Ref: GB641011650000). The following waterbodies are within proximity to the proposed scheme and are listed in Table 2-1:

- Gele (Water body ID - GB110066059980) - River waterbody
- Pont Robin Cut (Bodelwyddan) (Water body ID - GB110066059970): River waterbody
- Clwyd (Water body ID - GB541006608000): Transitional waterbody
- Clywd Permo-Triassic Sandstone (Water body ID - GB41001G202100) - Groundwater body
- Clwyd Permo-Triassic Sandstone (Water body ID - GB41001G202100) - Groundwater Drinking Water Protected Area

Table 2-1: WFD waterbodies summary

Waterbody type	Name	WFD Reference	Hydromorphological designation	Status (2021)
Coastal	North Wales	GB641011650000	Heavily modified	Moderate
Transitional (within 5 km)	River Clwyd	GB541006608000	Heavily modified	Moderate
Groundwater (chemical)	Clwyd Permo-Triassic Sandstone and Clwyd Silurian	GB41001G202100	Natural	Good
Groundwater (drinking water protected area)	Clwyd Permo-Triassic Sandstone	GB41001G202100	N/A	N/A
River (within 5 km)	River Gele	GB110066059980	Heavily modified	Moderate
	Pont Robin Cut (Bodelwyddan)	GB110066059970	Natural	Poor
	Glanfyddion Cut	GB110066059990	Natural	Moderate

2.2 Screening Outcome: Water Bodies

The following table indicates which water bodies have been screened in or out of the assessment and the reasons for this decision.

Table 2-2: Water Body Screening Outcome

Water Body	Reason	Screening Outcome
North Wales (Coastal)	The proposed works are to be conducted adjacent to the coastal waterbody. The impacts of the works are to be further assessed relative to their ability to impact on WFD quality elements.	Screened IN
Gele (River)	Works will be taking place adjacent to the waterbody catchment and therefore have the potential to impact its WFD status and objectives.	Screened IN
Clwyd Permo-Triassic Sandstone (Groundwater Drinking Water Protected Area)	Works will be taking place within this waterbody and therefore has the potential to impact its WFD status and objectives.	Screened IN
Pont Robin Cut (Bodelwyddan) (River)	This water body is located approximately 4.7 km from of the proposed works. As such, the waterbody is located far enough upstream from the works to not be affected.	Screened OUT
Clwyd (Transitional)	The Clwyd transitional water body is situated adjacent to the Gele river water body and North Wales coastal waterbody. However, the boundary of the waterbody is approximately 2km from the proposed works. Given the localised nature and limited scope of repair works required, the impacts of the construction and operational phases of the works are not expected to present a significant impact to the WFD quality elements.	Screened OUT
Clwyd Permo-Triassic Sandstone (Groundwater)	Works will be taking place within this groundwater waterbody, however, the proposed works will be taking place at surface level and are not predicted to impact subsurface assets. Therefore, the impacts of the construction and operational phases of the works are not expected to present a significant impact to the WFD quality elements.	Screened OUT

2.3 North Wales coastal waterbody

The North Wales coastal waterbody encompasses a 45 km stretch of the North Wales coast from Great Ormes Head to the Wales/England border, equating to an area of 146.25 km². The waterbody is designated as a Heavily Modified Waterbody (HMWB) due to modification associated with coastal protection.

The waterbody is currently assessed as having an overall status of 'Moderate', with 'Moderate' ecological potential, whilst its chemical status is currently 'Fail'. The quality elements that are contributing to the failing status of the waterbody include mercury (and its compounds) from an unknown source and Dissolved Inorganic Nitrogen (DIN) from dairy and beef farming and non-mains domestic sewage. Table 2-3 provides a summary of the previous RBMP Cycle 2 (2015) and RBMP Cycle 3 (2021) status of the WFD quality elements for the waterbody.

Table 2-3: WFD quality elements and status for North Wales coastal waterbody

Waterbody criteria	RBMP Cycle 2 (2015)	RBMP Cycle 3 (2021)
Biological/ecological quality elements		
Ecology	Moderate	Moderate
Angiosperms	Not assessed	Not assessed
Fish	Not assessed	Not assessed
Invertebrates	Good	Good
Macroalgae	Not assessed	Not assessed
Imposex	Good	Good
Phytoplankton	High	Moderate
Infaunal Quality Index	Not assessed	Not assessed
Hydromorphological quality element		
Hydrological Regime	Not assessed	Not assessed
Morphology	Not available	Not available
Chemical substances		
Priority hazardous substances	Moderate	Moderate
Specific Pollutants	Not assessed	High
Physico-chemical supporting elements		
Flow	Pass	Pass
Dissolved Oxygen (DO)	High	High
Dissolved Inorganic Nitrogen (DIN)	Moderate	Good
Annex 8 Chemicals	High	High
Chemical quality elements		
Arsenic	Good	High

Waterbody criteria		RBMP Cycle 2 (2015)	RBMP Cycle 3 (2021)
Copper		Good	High
Iron		Good	High
Zinc		Good	High
Annex 10 Chemicals	Benzo(a)pyrene	Good	High
	Cadmium	Good	High
	Fluoranthene	Good	High
	Hexachlorobenzene	Good	High
	Hexachlorobutadiene	Good	High
	Lead and its compounds	Good	High
	Mercury and its compounds	Fail	Moderate (Fail)
	Nickel and its compounds	Good	High

2.4 Gele river waterbody

The Gele river waterbody encompasses an area of approximately 42.5km² and covers areas including Towyn, Bodelwyddan, and the east of Abergele. The waterbody is designated as a Heavily Modified Waterbody (HMWB).

The waterbody is currently assessed as having an overall status of 'Moderate', with 'Moderate' ecological potential, whilst its chemical status is currently 'High'. Table 2-4 provides a summary of the previous RBMP Cycle 2 (2015) and RBMP Cycle 3 (2021) status of the WFD quality elements for the waterbody.

Table 2-4: WFD quality elements and status for Gele river waterbody

Waterbody criteria	RBMP Cycle 2 (2015)	RBMP Cycle 3 (2021)
Biological/ecological quality elements		
Ecology	Moderate	Moderate
Angiosperms	Not assessed	Not assessed
Fish	Not assessed	Not assessed
Invertebrates	High	High
Macroalgae and phytobentos combined	High	High
Hydromorphological quality element		
Hydrological Regime	Not high	Not high
Morphology	Not assessed	Not assessed
Physico-chemical supporting elements		
Dissolved Oxygen (DO)	Good	Poor
Phosphate	Moderate	Poor
Ammonia	High	High
pH	High	High
Dissolved Inorganic Nitrogen (DIN)	Not assessed	Not assessed
Annex 8 Chemicals	Not assessed	Not assessed
Chemical quality elements		
Arsenic	Not assessed	Not assessed
Copper	Not assessed	Not assessed
Iron	Not assessed	Not assessed
Zinc	Not assessed	Not assessed
Annex 10 Chemicals	Not assessed	Not assessed

2.5 Protected areas, priority habitats and invasive non-native species

The coastline is of high biodiversity value based on the variety and importance of ecological designations. The DataMapWales³ website identifies that there are several WFD Protected Areas within 2 km of the proposed scheme. These comprise:

Within scheme area

- Clwyd Permo-Triassic Sandstone Drinking Water Protected Area

Within 500m of the scheme area

- Liverpool Bay Special Protection Area (SPA)

Within 2km of the scheme area

- Kinmel Bay (Sandy Cove) Designated Bathing Water
- Abergele (Pensarn) Designated Bathing Water

Within 5km of the scheme area

- Rhyl East Designated Bathing Water

The following WFD Lower Sensitivity Habitats are recorded within 500m of the proposed scheme:

- Gravel and Cobbles (intertidal & subtidal coarse sediment A2.1, A5.1) within and immediately adjacent to the scheme area.
- Intertidal Soft Sediment (Sand, Mud & Mixed A2.2, A2.3, A2.4) within and immediately adjacent to the scheme area.
- Subtidal Soft Sediment (Sand, Mud & Mixed A5.2, A5.3 A5.4) within and immediately adjacent to the scheme area.
- Rocky shore (Intertidal rock A1) within and immediately adjacent to the scheme area.

The ecological survey confirmed that there are INNS within 2 km of the development site.

2.5.1 Mitigation measures

For each HMWB, mitigation measures are set within the RBMP to ensure the hydro-morphological characteristics of a waterbody are consistent with GEP.

For the North Wales coastal waterbody, a series of mitigation measures are identified. Many of these measures are related to the control of dredging activities and disposal of dredged materials; as such the proposed scheme will not affect these activities or decision-making relating to the control of these activities. Therefore, these measures are not considered further. The following mitigation measures are relevant to the proposed scheme:

³ Welsh Government (2024) DataMapWales Available at: <https://datamap.gov.wales/> (Accessed 3 October 2024).

- Indirect mitigation
- Reduce sediment resuspension
- Manage disturbance
- Retain habitats
- Enhance ecology
- Realign flood defence
- Preserve or restore habitats

Typically, for a waterbody to be able to achieve GEP all mitigation measures must be in place and functioning. An assessment of the mitigation measures for the North Wales coastal waterbody (see Water Watch Wales website) identifies that the status of these mitigation measures is 'Good' and that the measures listed are 'not currently applicable – not required in this waterbody'. This indicates that the hydromorphological characteristics of the waterbody are consistent with GEP and that implementation of further mitigation measures is not required at this time.

The majority of the mitigation measures highlighted for the Gele river waterbody are reported as either 'not in place - not yet identified' or 'not applicable - not required in this waterbody'. An assessment of the mitigation measures which are categorised as 'in place' have not been deemed relevant to the proposed works. Therefore, these measures are not considered further within this WFD.

2.6 Summary

To conclude the Screening Assessment, the following quality elements need to be considered further within the Scoping Assessment:

- Gele Water Body (river):
 - Biological/Ecological Quality Elements
 - Hydromorphological Quality Elements
 - Physico-chemical Supporting Elements
- North Wales Water Body (coastal):
 - Biological/Ecological Quality Elements
 - Hydromorphological Quality Elements
 - Physico-chemical Supporting Elements
 - Chemical Substances
 - Chemical Quality Elements
- Protected Areas
 - Clwyd Permo-Triassic Sandstone DrWPA

3 WFD Scoping Assessment

3.1 Overview

This scoping assessment identifies whether the water body's receptors, identified during the screening assessment, are at risk from the proposed works discussed in Chapter 1.2.2. This assessment is supported by the evidence in the Appendix. The proposed development works are being appraised in terms of their impact on WFD status and objectives. If any Quality Elements are found to be at risk of detrimental impact, further assessment and/ or mitigation may be required in the next chapter (as demonstrated by the final column).

Some WFD Quality Elements have not been formally assessed as part of the classification for this water body. However, due to the scale and nature of the proposed works, all WFD Quality Elements have been included in the previous screening and any identified impacts have been considered in relation to the ecological status of the water body and the status objectives.

Article 4.7 of the Directive defends deterioration in status or failure to meet WFD objectives resulting from new modifications or sustainable human development activities (if all conditions set out under this Article are met). If the assessment procedure predicts that an activity will cause deterioration in water body status or prevent a water body from meeting its ecological objectives, then an assessment is also required against the conditions listed in Article 4.7 of the WFD. If all the assessment conditions are met, there will not be a breach of the WFD and compliance will be attained.

3.2 Scoping Assessment

3.2.1 Biological Quality Assessment - Gele

Table 3-1 presents an assessment of the proposed works against the biological quality elements of the Gele Water Body (GB110066059980).

Table 3-1: Assessment of the Proposed Works against the Biological Quality Elements - Gele

WFD Biological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Macrophytes and phytobenthos combined	Good	The ecology elements of the transitional water body have the potential to be affected by the proposed scheme. There is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body. Operations during the construction phase could cause noise and visual disturbance to species associated with the of the transitional water body.	Yes
Fish	Not Assessed		Yes
Invertebrates	Not Assessed		Yes

3.2.2 Hydromorphological Quality Elements - Gele

Table 3-2 presents an assessment of the proposed works against the hydromorphological quality elements of the Gele Water Body.

Table 3-2: Assessment of the Proposed Works against the Hydromorphological Quality Elements - Gele

WFD Hydromorphological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Hydrology: Quantity and Dynamics of flow	Not assessed	The proposed works will not change the quantity of flows received by the Gele river water body at this location. The proposed works will not impact the dynamics of flow in the River Gele. Overall, no permanent negative impacts on this WFD receptor are predicted resulting from the works for the Gele river water body.	No further assessment required
Hydrology: Connection to ground water bodies	Not assessed	The proposed works will not take place in the River Gele channel. Therefore, there will be no impact to groundwater connectivity to the River Gele as a result of the proposed works. Following pollution prevention measures will mitigate against the potential for pollutants to be drawn down into the Clwyd Permo-Triassic Sandstone groundwater water body. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required

WFD Hydromorphological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
River Continuity	Not assessed	The proposed works will not take place in the River Gele channel. Therefore, there will be no impact to river continuity of the River Gele as a result of the proposed works. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required
Morphology: River width and depth	Not assessed	The proposed works will not take place in the River Gele channel. Therefore, there will be no change to the width and depth of the River Gele as a result of the proposed works. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required

WFD Hydromorphological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Morphology: Structure and substrate of the river bed	Not assessed	The proposed works will not take place in the River Gele channel. Therefore, there will be no change to the structure of the River Gele bed as a result of the proposed works. The proposed works involve the like-for-like replacement of three sets of access steps from the promenade to the beach at Towyn, North Wales. No works will take place on the River Gele channel bed. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required
Morphology: Structure of the riparian zone	Not assessed	The proposed works will not take place in the River Gele channel. Therefore, there will be no change to the structure of the riparian zone of the River Gele as a result of the proposed works. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required

3.2.3 Physico-Chemical Quality Assessment - Gele

Table 3-3 presents an assessment of the proposed works against the Physico-chemical quality elements of the Gele Water Body.

Table 3-3: Assessment of the Proposed Works against the Physico-Chemical Quality Elements of the Gele Water Body

WFD Physico-Chemical Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Dissolved Inorganic Nitrogen (DIN)	Not Assessed	The proposed works are not expected to result in increased concentrations of DIN or a change to the WFD status that may lead to nutrient enrichment of the water body.	No
Dissolved Oxygen (DO)	Not Assessed	Although the extent of the works are small when considering the scale of the coastal water body there is potential for short term, localised alteration in DO levels via the transfer of construction materials, namely concrete, to the water body. Furthermore, there is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body.	Yes

3.2.4 Biological Quality Assessment - North Wales

Table 3-4 presents an assessment of the proposed works against the biological quality elements of the North Wales coastal water body GB641011650000.

Table 3-4: Assessment of the Proposed Works against the Biological Quality Elements - North Wales

WFD Biological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Ecology	Good	The ecology elements of the water body have the potential to be affected by the proposed scheme. There is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body. Operations during the construction phase could cause noise and visual disturbance to species associated with the of the transitional water body.	Yes
Angiosperms	Not assessed	All of the biological quality elements of the water body have the potential to be affected by the proposed scheme, there is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body.	Yes
Fish	Not assessed		
Invertebrates	Good		
Macroalgae	Not assessed		
Phytoplankton	Not assessed		
Infaunal Quality Index	High		

3.2.5 Hydromorphological Quality Elements - North Wales

Table 3-5 presents an assessment of the proposed works against the hydromorphological quality elements of the North Wales coastal water body GB641011650000.

Table 3-5: Assessment of the Proposed Works against the Hydromorphological Quality Elements - North Wales

WFD Hydromorphological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Morphology: Depth variation	Not assessed	The listed WFD hydromorphological quality elements are not expected to be modified by the proposed works being undertaken in the water body. The scale of the coastal water body relative to the limited works being proposed are expected to have a negligible impact on the listed WFD Quality Elements.	No further assessment required
Morphology: Structure and substrate of the bed	Not assessed		
Morphology: Structure of the intertidal zone	Not assessed		
Tidal regime: Direction of dominant currents	Not assessed		
Tidal regime: wave exposure	Not assessed		

3.2.6 Physico-Chemical Quality Assessment - North Wales

Table 3-6 presents an assessment of the proposed works against the physico-chemical quality elements of the North Wales coastal water body GB641011650000.

Table 3-6: Assessment of the Proposed Works against the Physico-Chemical Quality Elements - North Wales

WFD Physico-Chemical Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Dissolved Inorganic Nitrogen (DIN)	Not Assessed	The proposed works are not expected to result in increased concentrations of DIN or a change to the WFD status that may lead to nutrient enrichment of the water body.	No
Dissolved Oxygen (DO)	Not Assessed	Although the extent of the works are small when considering the scale of the coastal water body there is potential for short term, localised alteration in DO levels via the transfer of construction materials, namely concrete, to the water body. Furthermore, there is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body.	Yes

3.2.7 Chemical substances status - North Wales

Table 3-7 presents an assessment of the proposed works against the Chemical substances status of the North Wales coastal water body GB641011650000.

Table 3-7: Assessment of the Proposed Works against the Chemical substances status of the North Wales coastal water body

WFD Chemical Substances	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Priority hazardous substances	Not Assessed	The extent of the works are small when considering the scale of the coastal water body and are not expected to result in significant direct or indirect impacts on chemical substances status within the water body.	No further assessment required
Specific Pollutants	Not Assessed		

3.3 Impacts of the Proposed Works on Protected Sites

Table 3-8 presents an assessment of the proposed works against any protected sites identified in the Clwyd Permo-Triassic Sandstone Groundwater Drinking Water Protected Area GB41001G202100.

Table 3-8: Assessment of the Proposed Works on Protected Sites

Protected Site	Potential Impact	Further Assessment and/or Mitigation Required?
Clwyd Permo-Triassic Sandstone Groundwater Drinking Water Protected Area	Low	No

4 WFD Impact Assessment

The Scoping Assessment presented in Section 5 identified some receptors may potentially be at risk from the proposed works. An Impact Assessment is therefore required to describe how these identified impacts will be mitigated.

The Impact Assessment needs to consider if there is a pathway linking the pressure to the receptor. If there is no pathway there can be no impact on the receptor and there is no need for any further assessment of that receptor to be carried out. If there is a potential pathway the assessment should consider if the activity, and the pressure it creates, may cause deterioration of the receptor.

In order to effectively assess the potential impacts of the proposed works and decide upon suitable mitigation measures, a good understanding of the proposed scheme and design is required. Should any revisions be made to the proposed works that could impact any of the WFD Quality Elements, this section should be revised.

4.1 Impact Assessment

Table 4-1 discusses the receptors identified as being potentially at risk in the scoping assessment. Mitigation measures are recommended to eliminate/reduce the effects of the proposed works. As the only impacts identified are indirect and appropriate to all waterbodies the proposed mitigation has only been presented once.

Table 4-1: Impacts and Mitigation Measures - All waterbodies

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Ecology	Indirect	Temporary impact: The ecology elements of the transitional water body have the potential to be affected by the proposed scheme. There is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body. Mitigation: Standard construction industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works. These measures are outlined in section 6.4.
Fish	Indirect	Temporary impact: Fish, Invertebrates, Macroalgae and Phytoplankton associated with the transitional water body have the potential to be affected by the proposed scheme. There is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body.
Invertebrates		

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Macroalgae		Mitigation: Standard construction industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works. These measures are outlined in section 5.4.
Phytoplankton		
Physico-chemical - Dissolved Oxygen	Direct & Indirect	Temporary Direct Impact: the proposed works may present a direct impact to DO concentrations within the coastal water body via the potential for construction materials, namely concrete to enter, or come into contact with the water body. Temporary Indirect Impact: the proposed works present an indirect impact to DO concentrations within the coastal water body via the potential for accidental pollution spillages from plant machinery during the construction phase of the works which could lead to chemicals entering the water body resulting in a temporary change and/or deterioration in concentrations of DO. Mitigation: Standard construction industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works. These measures are to include the following: Reduced interaction between the waterbody and concrete; all pumped concrete should be injected into void spaces when the tide is receding, opposed to incoming. Plant machinery should avoid movement on the beach, particularly when using concrete, when the tide is in. Work should be conducted during dry conditions. Pollution prevention measures including daily machinery checks to be completed and recorded. Any concrete and fuel left on-site is to be located in the works compound away from the water body. Fuel should be stored in bunded fuel bowers. The works compound will be fenced off and padlocked for security. Spill kits will be available on site in the event of any fuel/chemical spillage.

4.2 WFD Assessment Objectives

Following consideration of the appraised Mitigation Measures for the water body, Table 4-2 assesses whether the proposed works comply with the overarching objectives of the WFD.

Table 4-2: Assessment of the Proposed Works against the WFD Objectives

WFD Assessment Objective	Assessment of the Proposed Works
Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the water body	The proposed like-for-like replacement works will not cause the deterioration of the status of the ecological elements in the water body, providing that all industry standards for pollution prevention are followed.
Objective 2: The proposed works do not compromise the ability of the water body to achieve its WFD status objectives	The proposed works will not compromise the ability of the scoped in water bodies to achieve the WFD objectives, providing that all industry standards for pollution prevention are followed.
Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD	The impact of the proposed works will be direct and localised. The project will not impact on areas elsewhere in the catchment and will not impact other WFD waterbodies within the RBMP.
Objective 4: The proposed works contribute to the delivery of the WFD objectives	The proposed works will contribute to the delivery of the WFD objectives by ensuring no overall detrimental impact to the Gele, North Wales and Clwyd Permo-Triassic Sandstone water bodies, providing that all industry standards for pollution prevention are followed.

5 Discussion and Conclusions

5.1 Assessment Summary

The proposed works in Towyn, North Wales have been assessed for compliance with the WFD Objectives of the Gele river, North Wales coastal and Clwyd Permo-Triassic Sandstone Groundwater DrWPA water bodies. This assessment has been undertaken with the current site plans provided. Should the design or scope of the work alter significantly, this report would need to be revised to ensure the recommendations outlined in this report have been considered and to determine whether the final scheme is WFD-compliant.

5.1.1 Biological Assessment

The proposed works have the potential to lead to direct and indirect localised impacts to a number of ecological receptors during the construction works. These include impacts to fish, invertebrates, macroalgae and phytoplankton through potential pollution events as well as impacts to species associated with the water bodies screened in this assessment.

However, the proposed works are not anticipated to pose a significant threat to the biological quality elements of the waterbodies, providing recommended mitigation measures are followed. These include:

- Pollution prevention: appropriate pollution prevention measures will need to be implemented during the construction phase and within the final design in line with relevant guidance and best practice. This should include appropriate sediment control procedures, reducing interaction between the waterbody and the use of drip tray and emergency spill kits. On outline of pollution prevention measures is detailed in section 6.4

5.1.2 Hydromorphological Assessment

The proposed like-for-like replacement of the three sets of access steps from the promenade to the beach at Towyn, North Wales will have no negative impacts upon the hydromorphological quality elements in the Gele, North Wales and Clwyd Permo-Triassic Sandstone water bodies.

5.1.3 Physico-Chemical Assessment

Provided the proposed mitigation measures detailed herein are adhered to there is no expectation that the works will lead to a deterioration in the physico-chemical and chemical quality elements of either WFD water body during either the construction or operational phases of the proposed work.

5.2 Scheme Recommendations/ Key Considerations

The impact assessment determines whether the proposed works have the potential to significantly impact any of the quality elements screened into the assessment. Any mitigation measures that need to be considered to make the works compliant with the WFD are presented in table 4-1; however, the critical ones are listed below:

- Standard industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works.
- Use of plant machinery and use of cement on the beach should be limited to dry periods when the tide is receding.

5.3 Conclusions

The proposed works are expected to be compliant with WFD objectives if the appropriate mitigation measures described in relation to each potential impact are incorporated into the works design. The proposed works are not expected to have a significant impact on any WFD receptors and no significant short-term, or long-term impacts are predicted during the operational phases of the works.

Collectively the proposed works are not expected to contribute towards the failure or deterioration of the water bodies that have been assessed. The expectation is that the water bodies will maintain "Good" status during and following the proposed repair works.

Offices at

Bristol
Coleshill
Doncaster
Dublin
Edinburgh
Exeter
Glasgow
Haywards Heath
Leeds
Limerick
Newcastle upon Tyne
Newport
Peterborough
Portsmouth
Saltaire
Skipton
Tadcaster
Thirsk
Wallingford
Warrington

Registered Office
1 Broughton Park
Old Lane North
Broughton
SKIPTON
North Yorkshire
BD23 3FD
United Kingdom

+44(0)1756 799919
info@jbaconsulting.co
m
www.jbaconsulting.com
Follow us: [Twitter](#) [LinkedIn](#)

Jeremy Benn
Associates Limited

Registered in England
3246693

JBA Group Ltd is
certified to:
ISO 9001:2015
ISO 14001:2015
ISO 27001:2013
ISO 45001:2018