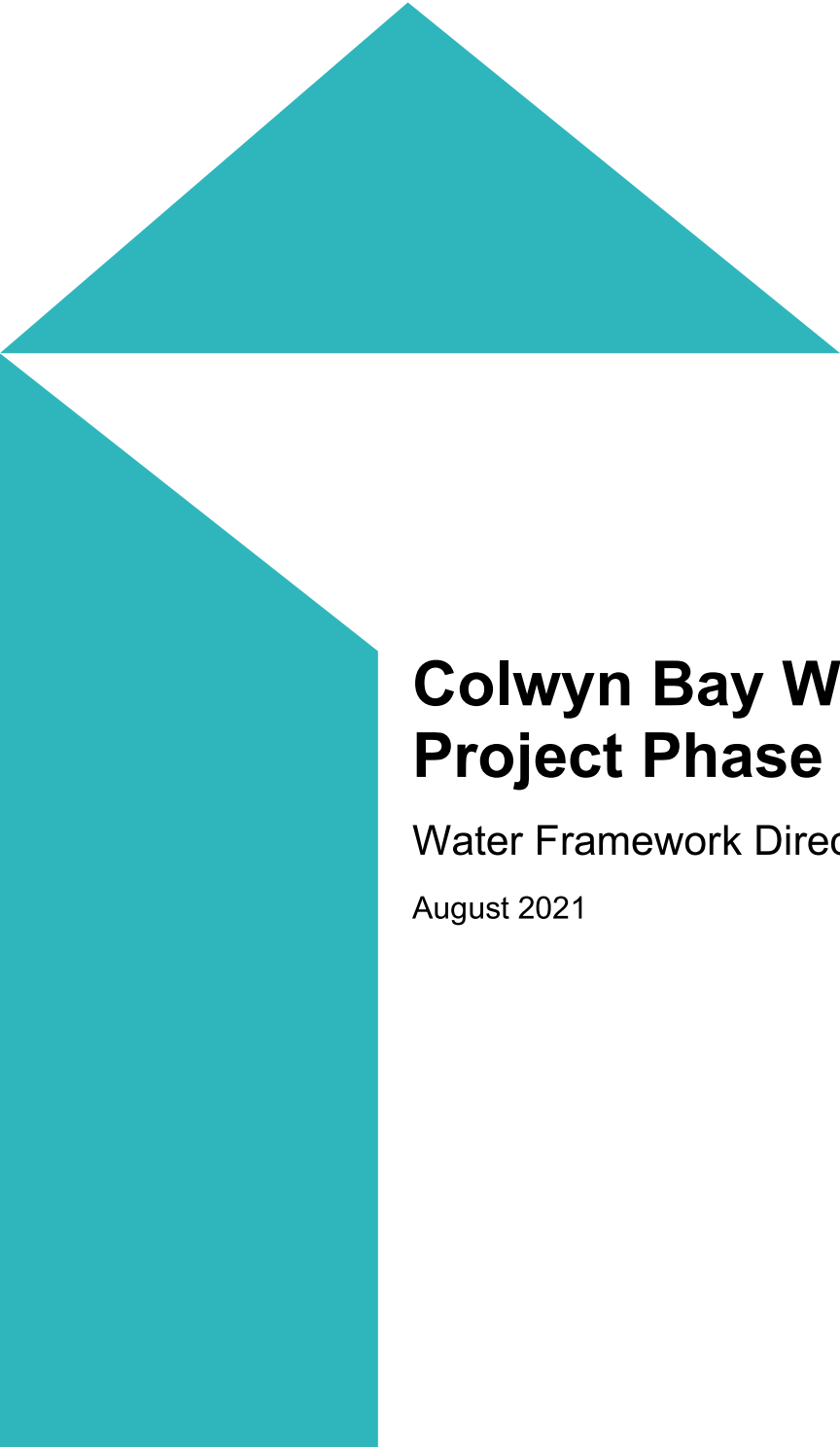




Colwyn Bay Waterfront Project Phase 2b

Water Framework Directive (WFD) Assessment

August 2021

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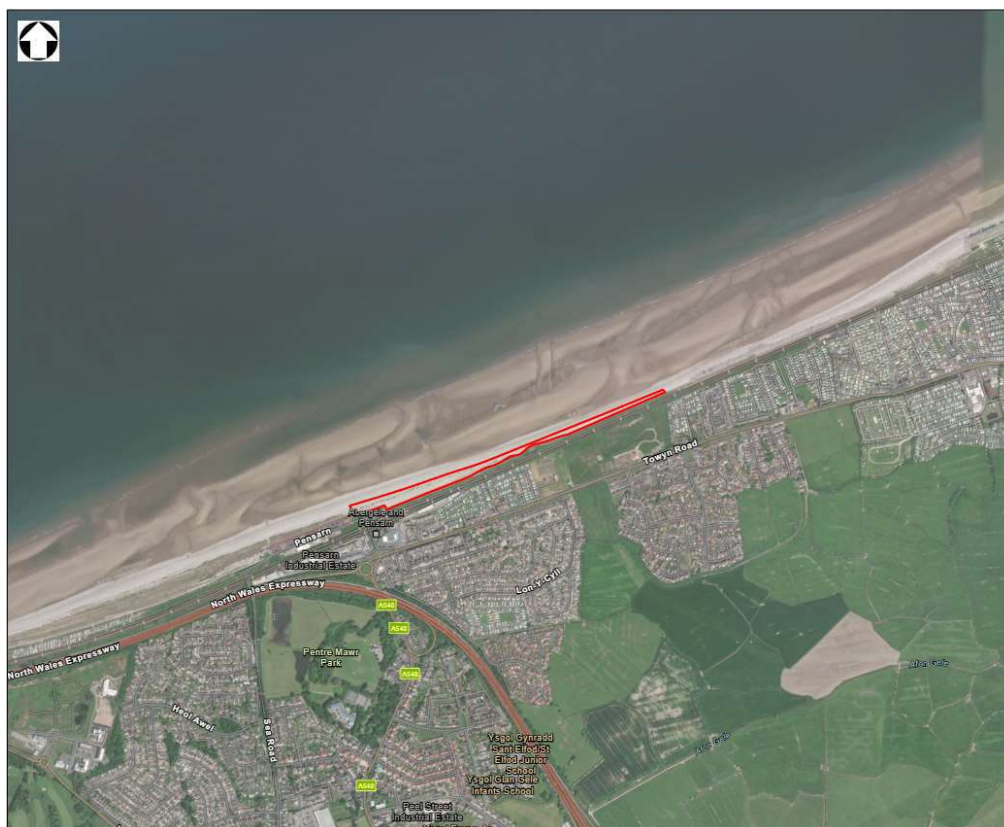
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This Water Framework Directive Regulations (WFD) Assessment has been prepared by Mott MacDonald Ltd on behalf of Conwy County Borough Council (CCBC) to support the Colwyn Bay Waterfront Project Phase 2b Scheme (hereafter referred to as the 'Scheme'). It will assess whether the Scheme is likely to affect WFD status or cause any deterioration of the WFD quality elements of the identified WFD waterbodies.

The working area has been extended beyond the construction footprint as shown in Figure 1.1 to allow for all areas that may need to be accessible during construction. The dashed red line represents the maximum possible extent of the area below mean low water potentially needed for pipeline and vessel movements during beach recharge (although only a tiny proportion of this and the intertidal area would be utilised at any one time).

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Figure 1.2: Pensarn Beach pipeline construction area



1.1.1 Colwyn Bay Waterfront

Table 1.1: Colwyn Bay Waterfront Project summary

Phase	Stage	Description	Completion date
1	General	Phase 1 of the scheme was carried out in three stages covering approximately 35,000m ² . The site was located within the central section of the frontage either side of Victoria Pier from the section of seafront in the vicinity of Marine Road to the west, to the section of seafront parallel to the J22 eastbound slip road of the A55 Expressway to the east.	October 2014
1	a	Phase 1a of the scheme encompassed engineering works and environmental improvements.	Engineering works – March 2012

Phase	Stage	Description	Completion date
		The engineering works comprised a 150m rock groyne structure perpendicular to the shoreline, with a short length of linear rock revetment to the east of the groyne, along with the construction of a sheet piled wall. A short section of concrete stepped revetment was also constructed along the western edge of the promenade. Existing slipway access at this location was raised and extended to follow the design of the new structures. The environmental works comprised the construction of Porth Eirias, a new multi-use water sports building, and landscaping works.	Environmental works – April 2013
1	b	The coastal defence works primarily comprised beach recharge to the west of Porth Eirias, to bring beach levels up to the level of the existing promenade (approximately 5.00m above ordnance datum (AOD)) but below the existing seawall crest (at approximately 6.15m AOD). Beach recharge was also undertaken between Cayley Promenade and Eirias Park, sourced from Liverpool Bay. Promenade enhancement was carried out to the west of the completed Porth Eirias Phase 1a works up to the pier area and extending below the Network Rail over-bridge as far as the interface with the train station. Enhancement works included improvements to the promenade consisting of; stepped revetment structures, 'headland' structures, access ramp, cycle ramp, car parking, promenade raising, secondary sea defence wall, streetlighting, street furniture and new town centre link works.	Coastal defence works – May 2013 Promenade enhancement works – October 2014
1	c	Coastal defences consisting of beach recharge (totalling 220,000m³ dredged beach material) and associated infrastructure works, including extending surface water outfalls, repairs to the existing seawall and removal and replacement of rock armour. Works were completed in parallel with the Phase 1b promenade enhancements.	Coastal defence works – October 2014
2/1	a/d	<i>Note: Some reports refer to 1d, while others refer to 2a, these phases are one and the same.</i> Regeneration of two areas of coastline (Areas A and B) located between Victoria Pier and Cayley Embankment. Area A extended approximately 430m westwards from Victoria Pier to Princess Court apartments. Works comprised improved recreational opportunities and enhanced coastal defences across the site. This involved widening and raising the existing promenade and highway by constructing a new seawall approximately 7m seaward of the existing seawall, with three new headlands. Area B extended approximately 420m westwards from the Princess Court apartments to Rydal boat store near Cayley Embankment. Works included improved slipway access, beachfront access compliant with the Equalities Act 2010, car parking changes, seating, planting, railings, street furniture and lighting changes.	September 2017
Splashpoint		This scheme comprises the construction of a short section of 30m deep rock revetment against the seawall at the location identified as being at highest risk of imminent collapse – the easternmost section of the promenade	Ongoing (anticipated to be completed prior to construction of

Phase	Stage	Description	Completion date
		(where a revetment is currently absent) known as 'Splashpoint'.	Phase 2 commencing)
3 (Old Colwyn Coastal Defence and Active Travel Scheme)		This phase comprises the construction of a 32m deep rock revetment along the base of the seawall from Porth Eirias to join with the Splashpoint Project to the east with associated outfall extensions and new pedestrian accesses to the beach. It also includes active travel improvements to include new cycleway layouts, improved pedestrian access areas, improved lighting, new handrailing and improved signage along with other promenade improvements.	Anticipated 2023 for eastern half. Western half unknown at current time (funding dependent).
2	b	Current Scheme	Anticipated May 2023

Source: Adapted from Project Appraisal Review and Update Report, CCBC, 2018

1.2 Proposed scope of coastal and promenade works

1.2.1 Coastal works

1.2.1.1 Sea wall repairs

Minor repairs (e.g. grouting, re-pointing, coping repairs, filling of voids) to the existing sea wall from Rydal Boat store boundary with the Phase 2a area to the southern boundary of Rhôs-on-Sea Harbour. Works would be completed both from the promenade and from the intertidal area (depending on the repair needed).

1.2.1.2 Terminal groyne works

The terminal groyne adjacent to Rhôs-on-Sea Harbour would be raised by approximately 1m along its length and an additional arm would be added. Construction of this would re-use 9-10,000m³ existing rock revetment currently located against the sea wall across the Phase 2b area and present within existing groynes (which would otherwise be redundant following beach recharge activities). This would be needed to prevent the beach recharge activities causing siltation of the Rhôs-on-Sea Harbour.

1.2.1.3 Outfall extensions and groynes

A total of six Welsh Water surface water outfalls would be buried by the beach recharge. It is currently understood that three outfalls would be extended by a new section of pipe, encased by concrete for protection.

The three remaining outfalls would be either diverted within the promenade to one of the retained extended outfalls or protected by a gabion basket to allow continued flow beneath the new beach surface level.

1.2.1.4 Beach recharge

Beach recharge activities would involve the importation and placement of approximately 1,000,000t (~666,000m³) of dredged sand material between the Rhôs-on-Sea terminal groyne to the west round to the existing slipway adjacent to the western junction of Cayley Promenade with Rhôs Promenade to the east to bring levels up to match the design profile of the Phase 1 works (5mAOD). Recharge would be then tapered off from this point eastwards to tie in with levels in the vicinity of the Horizon Shine Kiosk.

Dredged sand would be transported via a combined floating and sinker pipeline, which would be constructed and deconstructed on Pensarn Beach, which is eastwards along the coast between Colwyn Bay and Rhyl.

In addition, the Scheme would also appropriately include for the 'topping-up' of sand levels between the Horizon Shine Kiosk and the new truncated pier location.

The design profile of the new beach would comprise an upper berm of 20m width and 1 in 40 slope to seaward, which would abut the existing sea wall at a level of +5.0m AOD. From the seaward edge of the berm, the beach would be placed at a gradient of approximately 1 in 30 until it meets the existing beach at a level typically between -2.0 and -3.0 AOD.

Beach management activities between the pier and Porth Eirias would carry on as usual under the existing marine licence for this purpose.

1.2.2 Promenade works

The promenade improvement works are currently anticipated to comprise:

- A 2.2m wide pedestrian-only zone;
- A 4m wide shared surface with health markers at 50m intervals;
- Designated picnic / seating areas;
- Activity zones;
- "Rhôs" feature letters and artwork;
- Pedestrian links across the highway & promenade;
- Intermediate links across promenade & shared surface;
- New surface finishes;
- New traffic routing;
- Landscaping (including appropriate planting / soft landscaping);
- Streetlighting; and
- Street furniture / features.

1.2.3 Future maintenance

Following discussion with CCBC on the current maintenance of a similar scheme, it is currently anticipated that future maintenance action would comprise:

- Reactive maintenance and repair of structures, groynes, and steps as identified following routine inspections;
- Routine maintenance and repair of promenade including pavement, drainage system, and vegetation management of soft landscaped areas;
- Cleaning and maintenance of slipways, with a suitable inspection regime;
- Maintenance of landscape features such as benches, guards, and handrails;
- Beach management – redistribution of sand on up to an annual basis, depending on weather conditions; and
- Monitoring of beach levels across the Scheme area.

1.2.4 Proposed works programme

The programme is currently anticipated to be:

- Detailed design of the Scheme completed by Summer 2021;
- Mobilisation and starting works by end of March 2022; and

- A continuous construction period of approximately 14 months will be split into phases in the following approximate order (to be confirmed once a contractor is appointed):
 - Repairs to sea wall, modifications to terminal rock groyne and extension of outfalls;
 - Beach recharge; and
 - Promenade works.

2 Legislative context

2.1 Overview

The WFD is transposed in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Natural Resources Wales (NRW) is the statutory body responsible for implementing the WFD in Wales.

The Regulations require objectives for protecting and improving 'waterbodies' to be set. Waterbodies include rivers, streams, lakes, reservoirs, estuaries, coastal waters, canals and groundwaters. The standard objective is to achieve 'good status', or 'good potential' (if the waterbody is artificial or heavily modified). Further to this, the Regulations require that the status of waterbodies is maintained with no deterioration. The original target date for all waterbodies to achieve 'good status' was 2015; however, this has been extended in some cases. Good 'status' or 'potential' is designated based on the assessment of ecological and chemical components in surface waters. Ecological status consists of biological quality elements, physico-chemical supporting elements and hydromorphological supporting conditions. For groundwater, status consists of quantitative and qualitative elements. The WFD environmental objectives are outlined in Table 2.1.

Table 2.1: WFD environmental objectives

Objectives (from Article 4 of WFD)	Reference and description
4.1(a)(i)	WFD1 - Member States shall implement the necessary measures to prevent deterioration of the status of all bodies of surface water.
4.1(a)(ii)	WFD2 - Member States shall protect, enhance and restore all bodies of surface water, subject to the application of subparagraph (iii) for artificial and heavily modified bodies of water, with the aim of achieving good surface water status by 2015.
4.1(a)(iii)	WFD3 - Member States shall protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential (GEP) and good surface water chemical status by 2015.
4.1(a)(iv)	WFD4 - Progressively reduce pollution from priority substances and cease or phasing out emissions, discharges and losses of priority hazardous substances.
4.1(b)(i)	WFD5 - Prevent Deterioration in Status and prevent or limit input of pollutants to groundwater.

Source: Water Framework Directive 2000/60/EC¹

River Basin Management Plans (RBMPs) set out how organisations, stakeholders and communities will work together to improve the water environment. RBMPs report the baseline status of waterbodies within each River Basin District (RBD), corresponding to WFD reporting cycles. The first RBMPs were published in 2009 for RBMP Cycle 1 and were updated for RBMP Cycle 2 in 2015. RBMPs are reviewed and updated every six years so a new RBMP is due to be published in 2021. The Scheme is within the Western Wales RBMP².

¹ Directive 2000/60/EC of the European Parliament and the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (2000), Accessed online: https://eur-lex.europa.eu/resource.html?uri=cellar:5c835afb-2ec6-4577-bdf8-756d3d694eeb.0004.02/DOC_1&format=PDF

² NRW Website: [Natural Resources Wales / River Basin Management Plans 2015 - 2021](#), accessed August 2021

Waterbodies can be classified as artificial (waterbodies created in a location where no waterbody existed before), or heavily modified (waterbodies where the natural conditions have been substantially altered for human benefit and have substantially changed in character).

Mitigation measures are identified to achieve 'Good Ecological Potential' for Artificial Waterbodies (AWB) or Heavily Modified Waterbodies (HMWB), in lieu of the ability to achieve 'Good Ecological status' seen in natural waterbodies. Mitigation measures are practicable steps that can be taken to reverse or offset adverse impacts from human activities such as impoundments for water resources, power generation or structures that provide flood defence.

2.2 Guidance

The most applicable guidance for WFD assessment in Wales is:

- NRW OGN 072: Complying with the Water Framework Directive Regulations 2017: how to assess and appraise projects and activities, Natural Resources Wales, Jan 2021.

2.3 Assessment methodology

The assessment has been informed by a desk-based study based on publicly available data and follows the guidance from government documents outlined in Section 2.2.

2.3.1 WFD baseline

The WFD Baseline will identify the WFD waterbodies including:

- River waterbodies;
- Groundwater catchment waterbodies; and,
- Designated sites / Protected Areas.

This baseline has been informed by a desk-based analysis of publicly available information using sources as seen in Table 2.1.

Table 2.2: Desk-based study sources

Source	Link	Description
Natural Resources Wales - Watch Water Wales	Water Watch Wales (naturalresourceswales.gov.uk)	Provides information on the WFD waterbodies.
Natural Resources Wales Portal - Lle Map	Lle - Map (gov.wales)	Provides information on the WFD waterbodies, potential environmental constraints, Protected Areas and designated sites.
Natural Resources Wales - River Basin Management Plans (RBMPs)	Natural Resources Wales / River Basin Management Plans 2015 - 2021	Provides information on the designated River Basin Management Plans; the progress reports and the objectives.
National Library of Scotland – Map Images	Side by side georeferenced maps viewer - Map images - National Library of Scotland (nls.uk)	Comparison for historic Ordnance Survey (OS) maps and present-day mapping, allowing long-term changes in river morphology and planform to be identified.
Department of Environment, Food & Rural Affairs and (Defra) – MAGIC Map	MAGIC (defra.gov.uk)	Provides information on the WFD waterbodies, potential environmental constraints, Protected Areas and designated sites.

Source: Collated by Mott MacDonald, 2021

Due to the nature and implied connectivity of the coastal environment, waterbodies within a 5km radius have been assessed within the WFD screening.

2.3.2 Stage 1: WFD screening assessment

The Screening Assessment collates information about the Scheme and identifies WFD Waterbodies with the potential to be impacted by the Scheme within 5km as an initial conservative search radius.

The WFD Screening Assessment determines whether the Scheme's activities need to be screened-in or out for further assessment. This is based on the NRW WFD Guidance report³

If the proposed works are not listed in Annex D of the NRW WFD Guidance, the Scheme has to be assessed against the WFD risk screening thresholds.

2.3.2.1 WFD risk screening thresholds

WFD risk screening thresholds help determine if the activity poses a risk to the delivery of WFD objectives and indicates whether further assessment is needed.

The thresholds look at the type of physical works proposed and the length of waterbody that might be affected. The combination of these two factors provides a red, amber or green 'traffic light' system that indicates the level of potential WFD Risk (Table 2.3).

Table 2.3: WFD Risk Traffic Light System

Colour	Risk to delivery of WFD objectives	Need for further assessment
Green	None - Low ⁴	No further assessment required.
Amber	Medium – High, depending on the sensitivity of the location.	Yes – further assessment required. These activities should be sent for review by area geomorphology, fisheries and biodiversity experts.
Red	High	Yes – further assessment required. These activities should be sent for review by area geomorphology, fisheries and biodiversity experts.

Source: NRW WFD Guidance report

2.3.3 Stage 2: WFD scoping assessment

This stage aims to identify elements within waterbodies which may be impacted as a result of the activity. As part of scoping, the focus is on identifying components of the Scheme that may have the potential to cause an impact on the quality elements (Chemical and Ecological status).

Waterbodies can be scoped out at this stage if it can be robustly demonstrated that there will be no impacts.

2.3.4 Stage 3: detailed compliance assessment

This stage considers the potential impacts of an activity, identified ways to avoid or minimise impacts, and concludes if the activity may prevent any quality element within any waterbody achieving good status/potential or may cause deterioration.

³ OGN72: Complying with the Water Framework Directive Regulations 2017: how to assess and appraise projects and activities, *Natural Resources Wales*, 2021.

⁴ Green activities still need to be screened for high status, designations and wider environment, and activities must still be undertaken in line with pollution prevention and invasive species best practise guidance.

Mitigation measures and recommendations are proposed in this section to ensure the Scheme is WFD compliant.

3 Stage 1: WFD Screening

3.1 Information on proposals

As detailed within Section 1.

3.2 WFD Waterbody identification

The Scheme is located on the coast of North Wales within Colwyn Bay with the pipeline construction area located around 9km to the east at Pensarn Beach. The following WFD waterbodies have been identified within 5km of the main Scheme, and the works at Pensarn Beach:

- Main Scheme:
 - North Wales Coastal Waterbody (GB641011650000): Scheme within waterbody;
 - Conwy Groundwater Waterbody (GB41002G203000): Scheme within waterbody;
 - Ganol East River Waterbody (GB110066059902): Scheme adjacent to this waterbody catchment;
 - Clwyd Permo-Triassic Sandstone Groundwater Waterbody (GB41001G202100): Scheme approximately 2.2km north-west of this waterbody catchment;
 - Dulas – upper River Waterbody (GB11Q066059810): Scheme approximately 4km north-west of this waterbody catchment;
 - Dulas – lower River Waterbody (GB110066059860): Scheme approximately 4.4km west of this waterbody catchment; and,
 - Nant Garreg-Ddu River Waterbody (GB110066059800): Scheme approximately 4.6km northeast of this waterbody catchment.
- Pensarn Beach works:
 - Gele River Waterbody (GB110066059980): Works adjacent to this waterbody catchment;
 - Nant y Fedw (Dulas) River Waterbody (GB110066059830): Works approximately 2.7km north of this waterbody catchment; and,
 - Dulas – lower River Waterbody (GB110066059860): Works approximately 3.3km east of this waterbody catchment.

3.3 Risk Screening

The following elements of the Scheme have the potential to impact the water environment and have been screened into the assessment.

- Construction works:
 - Minor repair works to the existing seawall to be conducted from both the promenade and the intertidal area;
 - Modification (and raising) of the existing terminal groyne;
 - Construction of a secondary arm to the terminal groyne;
 - Importation and distribution of sediment for beach recharge;
 - Construction of pipeline at Pensarn Beach (to be constructed above mean high water and then floated out on a Spring high found to Colwyn Bay to be used for sand import); and
 - Construction of extension to existing surface water and sewer outfalls.
- Operation works:

- Maintenance and management of seawall repairs; and
- Beach management activities for the additional area of beach recharge (there is an existing Marine Licence for beach management activities across the area of sand imported as part of Phase 1).

The Scheme's proposed activities are not listed within Annex D of the NRW Guidance, and therefore it is considered all of the proposed activities require further assessment.

4 Stage 2: WFD Scoping Assessment

This stage identifies waterbodies and WFD quality elements that are at risk from the Schemes proposed activities and require further assessment.

4.1 WFD Scoping Assessment

The Scheme's proposed activities are not listed within Annex D of the NRW Guidance, indicating a potential risk and therefore **Table 4.1** uses expert judgement (nature of proposed activities and distance to Scheme) to determine which WFD waterbodies have been screened-in or -out of the assessment.

Table 4.1: Scoping outcomes

Waterbody name	Waterbody ID	Reason	Scoping outcome
Coastal Waterbodies			
North Wales	GB641011650000	The Scheme (and associated works) is within this waterbody. The purpose of the Scheme is to manage the risk of flooding, as such there is a potential for the Scheme to impact the waterbody's objectives during construction.	Scoped - in
Groundwater bodies			
Conwy	GB41002G20300	The main Scheme is within this waterbody, and the Pensarn works are approximately 2.7km north-east of this waterbody. The Scheme does not involve groundwater abstraction and will not alter existing flow paths, create pollution pathways or for the waterbodies objectives to be impacted.	Scoped-out
Clwyd Permo-Triassic Sandstone	GB41001G20210	The main Scheme is approximately 2.2km north-west of this waterbody catchment, and the Pensarn works are within this waterbody. The Pensarn works do not involve groundwater abstraction and will not alter existing flow paths, create pollution pathways or for the waterbodies objectives to be impacted.	Scoped-out
River Waterbodies			
Ganol East	GB110066059902	The main Scheme is adjacent to this waterbody catchment. There are no works that would affect the adjacent river catchment area.	Scoped-out
Gele	GB110066059980	The Pensarn works are adjacent to this waterbody catchment. There are no works that would affect the adjacent river catchment area.	Scoped-out

Waterbody name	Waterbody ID	Reason	Scoping outcome
Dulas-upper	GB11Q066059810	The main Scheme is approximately 4km north-west of this waterbody catchment. Due to the distance from this waterbody, catchment and the lack of any impact pathways it is not anticipated for the waterbody's objectives to be impacted by the Scheme.	Scoped-out
Dulas-lower	GB110066059860	The main Scheme is approximately 4.4km west of this waterbody catchment, and Pensarn works are approximately 3.3km east of this waterbody catchment. Due to the distance from this waterbody, and the lack of any impact pathways it is not anticipated for the waterbody's objectives to be impacted by the Scheme.	Scoped-out
Nant Garred-Ddu	GB110066059800	The main Scheme is approximately 4.6km northeast of this waterbody catchment. Due to the distance from this waterbody and the lack of any impact pathways, it is not anticipated for the waterbody's objectives to be impacted by the Scheme.	Scoped-out
Nant y Fedw (Dulas)	GB110066059830	The works at Pensarn are approximately 2.7km northeast of this waterbody catchment. Due to the distance from this waterbody and the lack of any impact pathways, it is not anticipated for the waterbody's objectives to be impacted by the Scheme.	Scoped-out

Source: Water Watch Wales, Cycle 2, 2015

4.2 WFD Baseline of scoped-in waterbodies

A summary of the Baseline WFD status of the scoped-in waterbodies is provided in Table 4.2.

Table 4.2: Summary of scoped-in WFD baseline status⁵

Waterbody parameters	Waterbody name
	North Wales
Waterbody ID	GB641011650000
Waterbody Type	Coastal
Distance from Scheme	0m (within)
Size of waterbody	146.278km ²
Hydromorphological Designation	Heavily Modified
Overall Status	Moderate
Chemical Status	Fail
Dissolved Inorganic Nitrogen	Good
Dissolved Oxygen	High
Annex 8 chemicals, priority hazardous substances and other pollutants	High
Ecological Status	Moderate
Invertebrates	Good
Phytoplankton	Moderate
Waterbody Objectives and Measures	
Failing WFD elements	Dissolved Inorganic Nitrogen, Mercury
Overall Status	Good by 2021
Chemical Status	Good by 2021
Ecological Status	Good by 2021

Source: Water Watch Wales, Cycle 2, 2015

4.3 Protected areas

Wider environmental legislation must be considered when assessing the compliance of proposals under the WFD. Proposals cannot be WFD compliant if they adversely affect the integrity of protected areas, WFD aims to achieve relevant standards or objectives for these sites.

Table 4.3 identifies the Protected Areas within 2km of the Scheme to be considered within the Detailed Assessment. No Special Areas of Conservations (SAC), Ramsars or Local Designations were identified within 2km of the main Scheme.

Nitrate Vulnerable Zones (NVZ) have been designated within the RBMPs to identify areas where nitrate concentrations in waterbodies are high or increasing, or waterbodies are, or may become, eutrophic due to agricultural nitrate pollution. No NVZs were identified within the Scheme extent or within close proximity to the Scheme.

⁵ Unknown: No information was provided in the Water Watch Wales Classification spreadsheet.

Table 4.3: WFD Protected Areas identified

Protected Area type	Name	Distance from Scheme	Associated WFD catchments
Special Protection Areas (SPA)	Liverpool Bay / Bae Lerpwl	0m (within)	North Wales (GB64101165000)
Shellfish Waters	Rhos-on-Sea	Adjacent (northern boundary to main Scheme)	North Wales (GB64101165000)
Bathing Waters	Colwyn Bay	0m (within main Scheme)	North Wales (GB64101165000)
	Abergele (Pensarn)	Adjacent (western boundary to Pensarn works)	North Wales (GB64101165000)
Site of Scientific Interest (SSSI)	Traeth Pensarn	35m west of Pensarn Works	North Wales (GB64101165000)

Source: Natural Resources Wales, 2011

4.3.1 Sensitive Habitats

The following 'WFD sensitive habitats' have been identified within 500m of the Scheme.

- Higher sensitivity habitats:
 - None present*.
- Lower sensitivity habitats:
 - Gravel & Cobbles;
 - Intertidal Soft Sediment;
 - Subtidal Soft Sediment;
 - Rocky shore;
 - Subtidal Boulder; and
 - Subtidal Rocky Reef.

*A small area of patchy, degraded *Sabellaria alveolata* formation has been identified within the Phase 2b area⁶, however, this is below the size that would typically be considered as reef. *Sabellaria alveolata* reefs are considered priority habitats under Section 7 of the Environment (Wales) Act 2016, therefore this habitat is considered within this WFD assessment. No mussel beds (*Mytilus edulis*) were identified during the site intertidal surveys. However, the possibility for mussel beds (listed as a priority habitat under Section 7 Environment Wales Act 2017) to be located in the nearshore waters to the west of Rhôs-on-Sea Harbour has been considered through the inclusion of the Rhôs-on-Sea Shellfish Water within the Stage 3 assessment (Table 4.4).

4.4 WFD Elements Scoping Assessment

During construction, the Scheme may present potential risks to a number of WFD quality elements. These include:

⁶ Colwyn Bay Phase 2b Intertidal Survey Report, Mott MacDonald Ltd, 2021

- Hydromorphology;
- Biology – habitats;
- Biology – fish;
- Protected areas;
- Water quality; and,
- Invasive and non-native species (INNS).

Table 4.4: Scoping in/out of WFD quality elements for North Wales Coastal Waterbody details the potential risk from the Scheme to each of these WFD quality elements in the scoped in North Wales Coastal Waterbody and determines which area at risk and require to be progressed to Stage 3.

Table 4.4: Scoping in/out of WFD quality elements for North Wales Coastal Waterbody

WFD Quality Element		Consideration of Scheme activity:	Potential risk?	Stage 3 Assessment required?
Hydromorphology	Could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at high status?	No. Overall status is Moderate		x
	Could significantly impact the hydromorphology of any water body (including morphological conditions and tidal patterns)?	No. The Scheme has the potential to alter the morphological conditions along the coastal frontage, however, this is anticipated to be local in scale (within the Rhôs Point to Tan Penmaen Head area). Given the size of the waterbody in comparison to the footprint of the Scheme, it is not anticipated for the change in morphology to be significant in terms of the waterbody as a whole. In addition, there is extensive coastal protection along the frontage of the coastal waterbody, therefore, the Scheme is considered to be relatively minor in relation to the entire waterbody.		x
	Physical footprint is greater than 1% of surface area of water body or greater than 0.5km ² ?	No. The area within the redline boundary in total is approximately 3.99km ² , however this includes the area of movement for the marine vessel and pipeline movement. The area of permanent construction is anticipated to be approximately 0.52km ² . These areas are 2.7% and 0.36% of the waterbody. Given the size of the waterbody in comparison to the footprint of the Scheme, it is not anticipated for the permanent construction of the Scheme to be significant in terms of the waterbody as a whole.		x
Priority Habitats and Species	If the water body is heavily modified, is it for the same use as the activity?	Yes. The waterbody is heavily modified for coastal protection.		✓
	Physical footprint is greater than 1% of surface area of water body or greater than 0.5km ²	No. The area within the redline boundary in total is approximately 3.99km ² , however this includes the area of movement for the marine vessel and pipeline movement. The area of permanent construction is anticipated to be approximately 0.52km ² . These areas are 2.7% and 0.36% of the waterbody. Given the size of the waterbody in comparison to the footprint of the Scheme, it is not anticipated for the permanent construction of the Scheme to be significant in terms of the waterbody as a whole.		x
	Is within 500m of any higher sensitivity habitat?	No. There is a cluster of <i>Sabellaria alveolata</i> within 500m of the Scheme. However, this is below the size that would typically be		x

WFD Quality Element

Consideration of Scheme activity:

Potential risk?

Stage 3 Assessment required?

		considered as reef and therefore not considered to be higher sensitivity habitat.	
	1% or more of any lower sensitivity habitat?	Yes. The entirety of the Scheme area is within lower sensitivity habitats. However, due to the vast coverage of the habitat across the coastal frontage and within the entire waterbody, it is considered for the Scheme be relatively minor in relation to the entire waterbody.	x
Biology - fish	Will impact on normal fish behaviour like movement, migration, spawning; species composition and abundance; or mechanical injury?	No. No physical barriers, chemical changes, habitat changes, significant changes to water quality or quantity, no changes to depth or flow is anticipated to impact fish behaviour.	x
	Is in a transitional water body and could affect fish?	No. Coastal Waterbody	x
	Is outside of a transitional water body and could impact upon migratory fish?	No. No physical barriers to impact migratory fish.	x
Water Quality	Could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)	Yes. The Scheme involves importation of sand for beach recharge over a period of 8-20 weeks, this is anticipated to have an impact on water clarity.	✓
	Is in a water body with a phytoplankton status of moderate, poor or bad	Yes. Phytoplankton status is Moderate	✓
	Is in a water body with a history of harmful algae	No.	x
Protected Areas	Puts water quality at risk from your activity through the use, release or disturbance of chemicals	No. Release or disturbance of chemicals is not anticipated.	x
	Within 2km of any WFD protected area	Yes. The Scheme is within a Bathing Water Area, adjacent to Shellfish Waters, and within an SPA.	✓
INNS	Introduce or spread INNS (including materials or equipment that have come from, had use in or travelled from other water bodies; or activities that help spread INNS).	Yes. There is a potential risk for the introduction or spread of INNS through material import, plant activity and marine vessel movements into the adjacent waterbody.	✓

Source: Mott MacDonald Ltd. 2021

4.5 Cumulative impacts

This section identifies the plans and projects proposed which may result in in-combination impacts on the marine environment. This section only includes plans/projects which have been applied for, and/or are believed to be taken forward (actively progressing), as required by the NRW Guidance Document.

4.5.1 Projects within 2km of the Scheme

4.5.1.1 Old Colwyn Waterfront Coastal Defence and Active Travel Scheme

The Colwyn Bay Waterfront Project was conceived in 2007 as a result of the strategic assessment of options for future flood and coastal erosion risk management. There are numerous phases of work with some phases complete. The Old Colwyn element of the Waterfront Project comprises construction of a 1.15km long ~32m wide rock revetment against the sea wall between Porth Eirias and Splashpoint. Construction is anticipated to start in September 2021.

The construction works at Old Colwyn are currently underway, as such there will be an overlap with the Scheme and potential in-combination impacts are to be assessed further.

4.5.1.2 Penrhyn Bay Coastal Defences

At the time of writing, limited information was available for this project. The available current scope of works includes; the construction of a T-shaped rock armour groyne, beach nourishment adjacent to the groyne, public realm enhancements to the promenade, and rock armour. As the project is along the North Wales coast and has the potential to overlap with the Scheme, there is a potential risk of in-combination impacts which are to be assessed further.

4.5.2 Other coastal defence projects along the North Wales Coast

These projects have been included in the report as despite their distance, they relate to proposed changes to the coastline of the North Wales Coast, which have the potential to have a cumulative effect on the North Wales Coastal Waterbody.

4.5.2.1 East Rhyl Coastal Defence Project

The East Rhyl Project is located in Rhyl, approximately 17km east of the Scheme. The East Rhyl Coastal Defence Project comprises a rock armour revetment designed to absorb wave energy during future storm events. The rock armour is approximately 600m long by 30m wide. The sea wall is also being replaced with a larger structure and the promenade is being raised by less than 1m.

The East Rhyl rock revetment works is currently under construction, with the anticipated project completion in early summer 2022, as such there will be an overlap with the Scheme and potential in-combination impacts are to be assessed further.

4.5.2.2 Central Rhyl Coastal Defence Project

The Central Rhyl Project is adjacent to the East Rhyl Project. The Scheme is to include the following key coastal works:

- The construction of approximately 1.45km of scour protection and concrete repairs. The scour protection will consist of boulders being placed at the base of the existing coastal defence structures;
- The construction of approximately 750m of new concrete stepped revetment;

- New pedestrian beach accesses through the proposed revetments to replace the existing ones and extension of existing beach accesses through the rock armour scour protection; and
- The extension of outfalls and protection works to existing outfalls that would be covered by the new revetment.

At the time of writing, this project is at detailed design stage. There is a potential for this project to overlap with the Scheme and potential in-combination impacts are to be assessed further.

4.5.2.3 Llanddulas to Kinmel Bay Coastal Defence Improvements (Conwy County)

This project comprises of a number of discrete sites along 11km of coastline and involves varying coastal defence improvements. The section closest to Colwyn Bay at Llanddulas comprises raising the sea wall and extending the rock groyne.

At the time of writing, this project is at detailed design stage. There is a potential for this project to overlap with the Scheme and potential in-combination impacts are to be assessed further.

4.5.2.4 Central Prestatyn Coastal Defence Improvements

The Central Prestatyn Coastal Defence improvements project involves the creation of a new flood embankment set back from the existing defence. It would surround the western, southern and eastern boundaries of Rhyl Golf Course, situated along the Rhyl Coast Road. The project will include construction of an embankment approximately ~1.66km long with sheet piles down the centre. There will be new rock revetments, patch repairs to the steps of the promenade, and two rock armour scour protection areas (totalling ~30m in length), along the toe of the existing stepped revetment to provide protection to the existing defence against the risk of undermining from discharged flood water through the new culverts.

The construction timeline is expected to be Spring 2022, therefore, there is a potential for this project to overlap with the Scheme and potential in-combination impacts are to be assessed further.

4.6 Summary

As the Scheme is within the North Wales Coastal Waterbody and the purpose is to install coastal defences to prevent flooding, there is a potential for the Scheme to impact on the waterbody's objectives, or ability to meet 'good' status. Therefore, this waterbody needs to be further considered in the Stage 3: Detailed Assessment.

Impacts on Protected Areas within or in close proximity of the Scheme, either during construction or operation, cannot be ruled out of the screening assessment. Therefore, these sites need to be further considered in the Stage 3: Detailed Assessment.

The WFD Elements to be considered further in the Stage 3: Detailed Assessment are summarised in Table 4.5.

Table 4.5: Summary of scoped-in WFD Elements

WFD Quality Element	North Wales Coastal Waterbody	
Hydromorphology	✓	Development for coastal protection
Priority Habitats and Species	X	Not considered further
Biology – fish	X	Not considered further
Water Quality	✓	Phytoplankton status of Moderate
	✓	Water clarity
Protected Areas	✓	Liverpool Bay SPA, Rhôs-on-Sea Shellfish Waters and Colwyn Bay Bathing Waters.
INNS	✓	Use of marine vessels and imported materials.
Cumulative Impacts	✓	All projects mentioned in Section 4.6.

5 Stage 3: Detailed Compliance Assessment

This stage considers the potential impacts of an activity, identifies ways to avoid or minimise impacts and concludes if the activity may prevent any WFD quality elements within any WFD waterbody achieving good status/potential or may cause deterioration.

Six receptors were identified as being at risk from the Scheme:

- Hydromorphology (Development for coastal protection);
- Priority Habitats and Species (Higher sensitivity habitats: *Sabellaria alveolata* reef)
- Water Quality (Phytoplankton status of moderate, and Water clarity);
- Protected Areas (Liverpool SPA, Rhôs-on-Sea Shellfish Waters, Colwyn Bay Bathing Waters, Abergele (Pensarn) Bathing Waters, and Traeth Pensarn SSSI);
- INNS (Use of marine vessels and imported materials); and
- Cumulative effects.

5.1 Mitigation Measures

In line with policy and best practice, the Scheme contractor would produce a CEMP prior to construction to reduce potential risks to the environment. The CEMP will include, but not be limited to the following:

- With the exception of the beach recharge works which would be a 24 hour operation, works on the intertidal area would be undertaken on the mid to low tide to reduce potential disturbance to SPA species, propagation of noise and vibration through the water column and suspension of sediment in the water column;
- Storage of fuels and chemicals to be above any flood water level/tidal area, and where possible away from high-risk locations (more than 10m from a waterbody);
- Refuelling of plant and equipment would only be permitted at designated refuelling areas. Fuel would be pumped into machines to minimise the risk of spillage. All refuelling and bulk deliveries would be supervised at all times;
- Pollution spill kits to be made available where required and Toolbox Talks are given to required staff;
- Visual monitoring of identified waterbodies; and,
- Throughout the construction and operational phases, best practice guidance in reference to pollution prevention would be followed; CIRIA (2015)⁷.

5.2 Detailed Compliance Assessment

A WFD Compliance assessment has been completed for the North Wales Coastal Waterbody, as shown in Table 5.1.

⁷ CIRIA 2015. Charles, P, Edwards, P (eds), Environmental good practice on site guide (fourth edition) (C741)

Table 5.1: Detailed WFD Compliance assessment

WFD Quality Element	Potential impacts	Compliance, mitigation and recommendations	Will the Scheme result in deterioration of WFD Quality Element?
Hydromorphology: Development for coastal protection	The works required for the terminal groyne would require excavation of beach materials to provide a solid foundation, removal of the existing groyne and other rock revetment in the area. During construction, machinery would track along the foreshore to excavate existing material and to place new materials. This could result in the loosening of beach material, making it more available for transporting along the frontage and to be suspended into the water column. However, works are to be undertaken at mid to low water, reducing the potential for suspended solids. Material from the excavation would be evenly distributed along the foreshore following the construction of a section of revetment that was excavated. This will allow the material to remain in the system and maintain the sediment balance. The construction phase may lead to short-term adverse impacts on sediment transport due to the temporary placement of rock used for repairs, and modification works in the intertidal zone. However, it is considered that once the stockpiles have been removed, the beach would quickly return to its former state. The construction phase for beach recharge has the potential to change the flow regime of the coastal water and result in an increase in sediment mobilisation/ turbidity. During operation, there is a potential for changes in flow regime of the coastal waterbody (as a result of the new groyne) and increase in sediment (as a result of the beach recharge) to alter the hydromorphology along the coastline, however, the waterbody is already heavily modified for coastal defence. Addition of new sediment to the	Standard best practice measures are to be followed throughout the construction phase, with a CEMP produced prior to construction works. On-spot visual monitoring under the WFD directive is recommended to assess any visible changes to the waterbody. During construction, to reduce the short-term adverse impact on hydrodynamics and the sediment transport regime, materials used for the works will be stored as high up the beach as practicable. Monitoring of the flow regime and beaches (visual monitoring) will be undertaken to assess any visible changes. Additional mitigation measures: - Contractor led inspection scheme, review the size of the stockpiles, and if scour effects are being recorded reduce size. Localised beach reinstatement if required; - Minimise sediment stockpiles and potential for suspended sediments; - Work to be undertaken at low tide and outside stormy periods; - Keep excavations to a minimum; - Pipeline construction, floatation and demobilisation are to be kept with the extended RLB, and only a tiny proportion of this area would be utilised at any one time; - Pipeline construction on Pensarn beach should be deployed parallel to the shore and should not be left for a long period of time; - During operations, CCBC to monitor beach level and recycle material in front of the structure.	No – There is already extensive, existing coastal protection along the frontage of the coastal waterbody. The addition of sediment to the coastal cell has the potential to have long-term benefit to down drift receptors. However, any negative impacts on the waterbody are anticipated to be localised and not result in deterioration at the waterbody scale, as such providing embedded mitigation measures are implemented and standard best practice measures are followed, the Scheme would be WFD compliant.

WFD Quality Element	Potential impacts	Compliance, mitigation and recommendations	Will the Scheme result in deterioration of WFD Quality Element?
	coastal cell has the potential to have a long-term benefit to down drift receptors.		
Water Quality: Water clarity	Beach recharge works is anticipated to include importation of approximately 666.000m ³ of sand across an 8-20 week period. Due to the scale of the works, it is anticipated for there to be a large amount of sediment deposited/mobilised within the water column during this period. However, it is expected for this to be short-term and limited to the beach recharge works.	Standard best practice measures are to be followed throughout the construction phase, with a CEMP produced prior to construction works. On-spot visual monitoring under the WFD directive is recommended to assess any visible changes to the waterbody. If significant changes in water clarity in the surrounding waterbodies (the area where beach recharge is not occurring) are noticed, works are to stop until waterbodies resume previous clarity and/or consultation undertaken with NRW to determine a way forward.	No - Any impacts to the waterbody are anticipated to be localised and not result in deterioration at the waterbody scale, as such providing embedded mitigation measures are implemented and standard best practice measures are followed, the Scheme would be WFD compliant.
Water Quality: Phytoplankton status of Moderate	The Scheme would not result in an increase in the amount of organic material being deposited into the waterbody, as such, it is not anticipated to result in an impact upon phytoplankton.	Standard best practice measures are to be followed throughout the construction phase, with a CEMP produced prior to construction works. On-spot visual monitoring under the WFD directive is recommended to assess any visible changes to the waterbody.	No - Any impacts to the waterbody are not anticipated to result in deterioration at the waterbody scale, as such providing embedded mitigation measures are implemented and standard best practice measures are followed, the Scheme would be WFD compliant
Protected Areas: Liverpool Bay SPA, Rhôs-on-Sea Shellfish Waters, Colwyn Bay Bathing Waters, Abergele (Pensarn) Bathing Waters, and Traeth Pensarn SSSI.	Liverpool Bay SPA Construction activities may result in a temporary reduction in species richness and/or abundance of bird species numbers within the SPA due to the visual and noise disturbance. During construction, there is a potential risk of water pollution from oil or fuel spills which could result in a deterioration of water quality within the SPA. During construction, the stockpiled materials have the potential to increase suspended sediment and	Standard best practice measures are to be followed throughout the construction phase, with a CEMP produced prior to construction works. On-spot visual monitoring under the WFD directive is recommended to assess any visible changes to the waterbody. Appropriate ecological mitigations measures to be implemented in line with the HRA ⁹ and Biodiversity chapter of the Environmental Statement (ES) ¹⁰ .	No - Any impacts to the waterbody are anticipated to be localised and not result in deterioration at the waterbody scale, as such providing embedded mitigation measures are implemented and standard best practice measures are followed, the Scheme would be WFD compliant.

⁹ Colwyn Bay Waterfront Project Phase 2b, Habitats Regulations Assessment, Mott MacDonald Ltd, 2021

¹⁰ Colwyn Bay Waterfront Project Phase 2b, Environmental Statement Volume 1: Main Text, Mott MacDonald Ltd, 2021

WFD Quality Element	Potential impacts	Compliance, mitigation and recommendations	Will the Scheme result in deterioration of WFD Quality Element?
	reduce visibility which has the potential to adversely impact the food source of overwintering birds, temporarily displacing the birds from foraging sites. Habitats Regulations Assessment (HRA)⁸: <i>“Following the implementation of mitigation, any adverse effects on Liverpool Bay SPA and its qualifying features, alone or in combination with other projects, are considered to be de-minimis, such that no adverse effect on the integrity of the Liverpool Bay SPA is anticipated. No impact pathways to any other internationally designated sites have been identified.”</i> Rhôs-on-Sea Shellfish Waters The Shellfish Water is located adjacent to the Scheme, however during the intertidal biotype survey⁹ no mussels were identified within the areas accessible and the Shellfish Water is listed as not being actively harvested. It is not anticipated for the Scheme to result in a direct impact to the Shellfish Waters. An increase in turbidity from construction activities has the potential to reduce the levels of dissolved oxygen in the water column and impacting on the respiration rate of the shellfish. There is a potential risk of water pollution from oil or fuel spills which could result in a deterioration of water quality of this Protected Area. Colwyn Bay Bathing Waters There is a potential for suspended sediments resulting from construction activities to affect the water quality of the Bathing Waters, although it is	Bathing waters would be closed for the duration of the intertidal works. For Traeth Pensarn, barriers would be used to prevent tracking into the SSSI and buffer zones would be implemented for rare species located outside the SSSI boundary¹¹.	

⁸ Colwyn Bay Waterfront Project Phase 2b, Habitats Regulations Assessment, Mott MacDonald Ltd, 2021

¹¹ Colwyn Bay Waterfront Project Phase 2b, Botanical Survey Report Pensarn Beach, Mott MacDonald Ltd, 2021

WFD Quality Element	Potential impacts	Compliance, mitigation and recommendations	Will the Scheme result in deterioration of WFD Quality Element?
	not anticipated for overall North Wales waterbody quality to be affected. Abergele (Pensarn) Bathing Waters There is a potential for suspended sediments resulting from construction activities to affect the water quality of the Bathing Waters, although the beach is a cobble/shingle beach in the locality of the works and the pipeline would be floated out on a spring high tide without disturbing sediments. It is not anticipated for overall North Wales waterbody quality to be affected. Traeth Pensarn SSSI This site was designated for being a vegetated shingle bank and has particularly rich flora. This site is located approximately 35m from the Pensarn works which relate to the construction/deconstruction of a pipeline which would be floated out to be used for beach recharge. It is not anticipated for the Scheme to directly impact on this Protected Area.		
INNS	Marine vessels and imported materials have the potential to introduce INNS to the water column during construction and maintenance, where needed. This has the potential to impact the habitats and ecology within the waterbody (and surrounding waterbodies).	Standard best practice measures are to be followed throughout the construction phase. Where possible, monitoring under the WFD directive which involves flow dynamic, physio-chemical and biological monitoring is recommended. All marine vessels must adhere to the Ballast Water Management Convention (2017). Where possible, locally resourced materials, transport and equipment should be used. A Biosecurity Risk Assessment has been produced¹² and mitigation measures to reduce the	No - Any impacts to the waterbody are anticipated to be localised and not result in deterioration at the waterbody scale, as such providing embedded mitigation measures are implemented and standard best practice measures are followed, the Scheme would be WFD compliant.

¹² Colwyn Bay Waterfront Project Phase 2b, Biosecurity Risk Assessment, Mott MacDonald Ltd, 2021

WFD Quality Element	Potential impacts	Compliance, mitigation and recommendations	Will the Scheme result in deterioration of WFD Quality Element?
risk of introducing INNS into the waters should be implemented.			
Cumulative Effects:	Construction If the construction periods for the Scheme and other developments overlap there may be an impact on localised coastal processes as a result of stockpiling materials and excavating material on the beach. However, these impacts are considered to be localised and temporary effects. In addition, there is the potential for the increased generation of suspended solids and increased turbidity, particularly from the Scheme beach recharge which has the potential to affect Bathing Waters within Colwyn Bay. The effects are considered to be limited given that there would be no public access to the beach within works areas for the duration of all the coastal projects which would affect water quality. For the Scheme long-shore drift is to the east away from the Bathing Water. Effects are also anticipated to be temporary and highly localised.	It is recommended for all projects to adhere to standard best practice measures to minimise and mitigate any potential cumulative impacts.	No - The majority of impacts would therefore result from the Scheme in isolation rather than in combination. The Scheme has been designed to minimise and mitigate effects through the use of appropriate construction method statements and measures contained within the CEMP. Providing all other projects minimise and mitigate potential effects, it is not believed for there to be cumulative impacts which would deteriorate the waterbody.
	Operation Permanent changes to coastal hydromorphology particularly in sediment transport patterns are expected from the beach recharge activities. There is a potential for material from the recharge to move eastwards along the coastline which would have a beneficial impact on the Colwyn Bay frontage.		

Source: Mott MacDonald Ltd, 2021

6 Conclusions and Recommendations

6.1 Assessment Outcomes

6.1.1 Stage 1: WFD Screening

The Scheme's proposed activities are not listed within Appendix A2.2 of the NRW Guidance, indicating a potential risk and therefore all of the proposed activities have been subject to further assessment at Stage 3.

The following proposed activities **may cause deterioration or prevent a waterbody from meeting its objectives**, as such, these activities will be screened-in and assessed further:

- Construction works;
 - Minor repair works to the existing seawall to be conducted from both the promenade and the intertidal area;
 - Modification of the terminal groyne;
 - Construction of a secondary arm to the terminal groyne;
 - Construction of a pipeline at Pensarn Beach;
 - Importation and distribution of sediment for beach recharge; and
 - Construction of outfall extension.
- Operation works:
 - Maintenance and management of seawall repairs; and
 - Beach management activities for the additional area of beach recharge (there is an existing Marine Licence for beach management activities across the area of sand imported as part of Phase 1).

6.1.2 Stage 2: WFD Scoping

To conclude the Scoping Assessment, there is a potential for the Scheme to impact the ability of North Wales Coastal Waterbody (GB64101165000) to achieve its objectives.

Impacts on the Protected Areas within or in close proximity of the Scheme, either during construction or operation, cannot be ruled out of the screening assessment. Therefore, these sites have been considered further in the Stage 3: Detailed Assessment.

The WFD Elements considered further in the Stage 3: Detailed Assessment included:

- Hydromorphology: Development for Coastal Protection;
- Water Quality: Phytoplankton status of Moderate and Water clarity;
- Protected Areas: Liverpool Bay SPA, Rhos-on-Sea Shellfish Waters, Colwyn Bay Bathing Waters, Abergele (Pensarn) Bathing Waters, and Traeth Pensarn SSSI; and
- INNS (use of marine vessels and imported materials).

The following projects have the potential for cumulative effects as they are along the North Wales coastline:

- Old Colwyn Waterfront Coastal Defence Project (Planning permission partially granted – construction commenced on a section of this project);
- Penrhyn Bay Coastal Defences;
- East Rhyl Coastal Defences Project (Planning permission granted – construction underway);

- Central Rhyl Coastal Defences Project;
- Llanddulas to Kinmel Bay Coastal Defence Improvements (Conwy County); and,
- Central Prestatyn Coastal Defence Improvements

6.1.3 Stage 3: Detailed Compliance Assessment

The Stage 3 assessment considered the potential impacts of the Scheme activities on the WFD quality elements, identified ways to avoid or minimise impacts, and concluded if the activity may prevent any WFD quality element within any WFD water body achieving good status/potential or may cause deterioration.

The assessment found that given:

- The mitigation already incorporated into the Scheme; and,
- The relatively small scale of works in the context of the WFD waterbody as a whole;

Any impacts on the WFD waterbody were considered to be localised and temporary, and not considered to cause deterioration of the WFD waterbody status.

All the coastal defence projects along the coastline as were considered within the cumulative effects section. It was considered that if the construction periods of the Scheme and other developments were to overlap, there were potential impacts on coastal processes, material movement, and sediment suspension. However, providing mitigation measures across the projects were adhered to, these were determined to be localised and limited to the construction period. It was concluded that the permanent changes to the coastal processes as a result of the combined coastal defence projects may result in a beneficial impact on the Colwyn Bay frontage.

6.2 Conclusions

This WFD Assessment has found that, when considering the mitigation already proposed, the Scheme is very unlikely to affect the WFD status or cause any deterioration of the WFD quality elements for the North Wales Coastal Waterbody.

