



Colwyn Bay Waterfront Project Phase 2b Environmental Statement

Volume 3: Non-Technical Summary

September 2021

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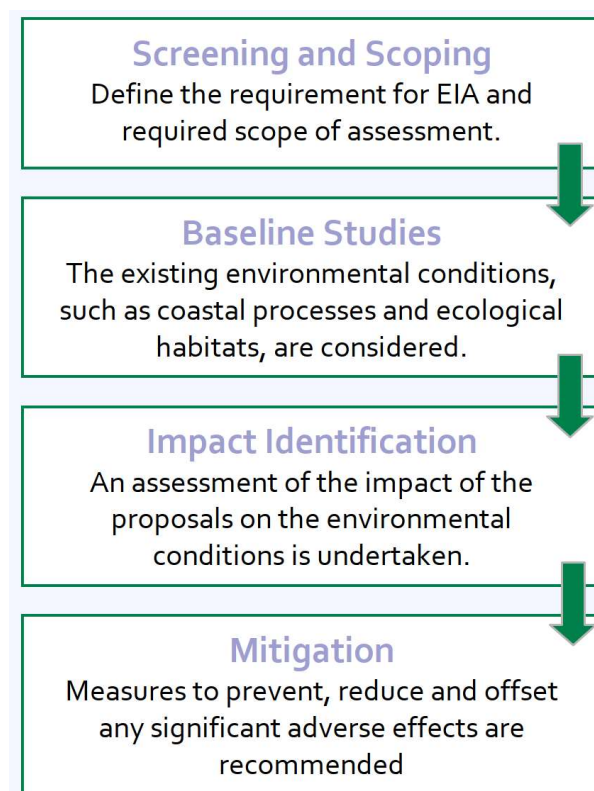
1 Introduction

1.1 About this Document

This document forms Volume 3 (the Non-Technical Summary) of the Environmental Statement (ES) for the Colwyn Bay Waterfront Project Phase 2b (referred to in this summary as the “Scheme”).

An ES is the report which presents the findings of an Environmental Impact Assessment (EIA), which is necessary for some developments where there is the potential for significant effects on the environment. The stages in the EIA process are as shown below in Figure 1.1.

Figure 1.1: Stages in the EIA process



Following consultation with Conwy County Borough Council (CCBC) and Natural Resources Wales (NRW) it was decided that this Scheme required an EIA because:

- It covers a large area;
- It is situated on and above an area which is of interest for its ecology and is very close to the Liverpool Bay Special Protection Area (SPA), a very important habitat for birds;
- The Promenade (road and pedestrian area) and beach form important recreational and tourism assets which are important to the economic and social well-being of Colwyn Bay; and
- The Scheme has the potential for resulting in significant impacts on the environment.

1.2 Why do we need the Scheme? (ES Chapter 2)

1.2.1 The Colwyn Bay Waterfront Project

The Colwyn Bay Waterfront Project commenced in 2007 to address the condition of the existing coastal defences along the waterfront in Colwyn Bay where the majority of defences date back to the turn of the 20th century. A decline in beach levels has left the defences exposed in many areas, and the increased severity and frequency of storm events combined with the expected effects of climate change poses an ever-increasing threat to properties and infrastructure along the waterfront and the town itself.

The current Shoreline Management Plan for the North Wales area states that CCBC should “Hold the Line” of the current coastal defences by maintaining and improving them. The decision was made to overhaul the existing flood defences to provide long lasting and effective coastal protection for the town and its inhabitants. Due to the extensive work required, it was decided that this could be used as an opportunity to both protect the community and its infrastructure and also enhance it by creating a promenade that would attract both local residents and visitors, providing a boost to the local economy.

The Colwyn Bay Waterfront Project was originally divided into three main phases. Over the years the three phases have been subdivided into further phases as summarised in Table 1.1 and Figure 1.2.

Table 1.1: The Colwyn Bay Waterfront Project

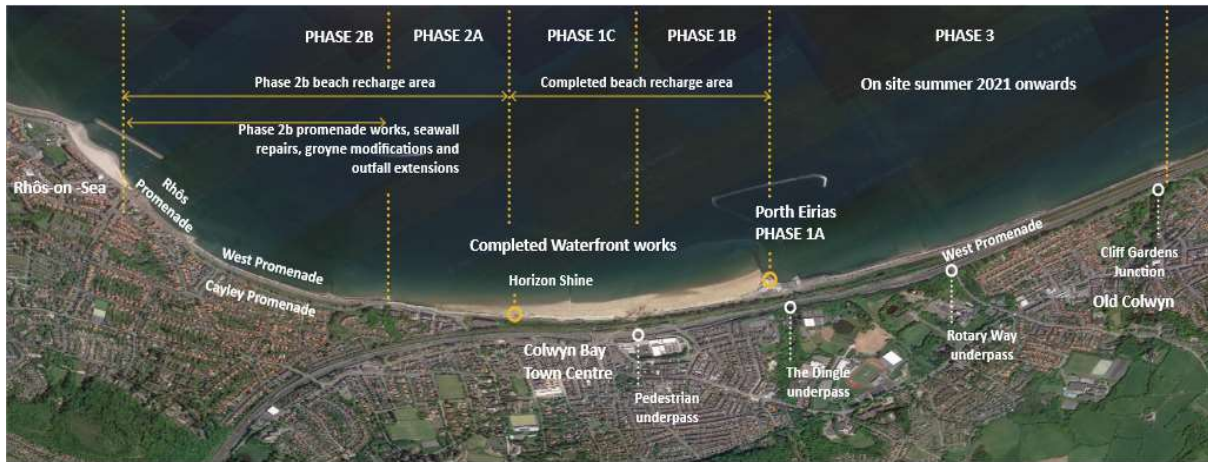
Phase	Details	Status
1	1a. The Porth Eirias groyne and building; 1b. Promenade/seawall improvements; and 1c. Beach recharge.	Sub-phases a, b and c all complete.
2	2a. Seawall and promenade improvements extending westward to the Rydal Boat store; and 2b. Beach recharge, Rhôs-on-Sea Harbour groyne works, promenade works and highway layout changes.	Phase 2a complete. Phase 2b Current Scheme – the EIA process will support the planning and Marine Licence applications.
3	3. Rock revetment with promenade raising and promenade improvements.	Section underway west of Splashpoint. Planning permission and a Marine Licence awaited to complete the section from Splashpoint to Rotary Way.

Source: Matt MacDonald Ltd, 2021

1.2.2 Need for the Scheme

For the Scheme (Phase 2b), CCBC wants to provide a permanent upgrade of the coastal defences to protect the remaining stretch of coastline between the Horizon Shine Kiosk to Rhôs-on-Sea Harbour concurrently with improvements to the Promenade to facilitate active travel and regeneration.

Figure 1.2: Colwyn Bay Waterfront Project Phase 2b in relation to other phases



Source: BCA Landscape, 2021

1.3 What were the alternative options? (ES Chapter 2)

Consideration of alternatives is a key part of the EIA process. Adverse effects can often be avoided by considering alternative designs or different ways of achieving the requirements. Within the ES, an assessment has considered alternatives to the Scheme in terms of their environmental impacts to validate the choice of the final scheme.

At the start of the Colwyn Bay Waterfront Project, a detailed assessment of the different options was completed, and this assessment has been revisited over the intervening years. The options included do nothing (let the defences fail), do minimum (maintain the defences until it becomes too difficult or costly), a linear rock revetment around the whole bay and the current Scheme.

This assessment involved looking at the cost and benefit (“economics”) of each option, and the sustainability, well-being, and environmental risks and benefits of the options. The current Scheme was selected because it best met objectives identified for the Scheme, including:

- Providing suitable flood risk and erosion protection for the area;
- Supporting the tourism economy, maintaining the promenade and active travel routes (the Wales Coast Path and National Cycle Route 5);
- The integration of improved public amenity and improved beach access to support regeneration plans for the town centre and high street; and
- The benefits outweighed the costs of the Scheme, and it was affordable.

2 The Proposed Scheme

2.1 Scheme location (ES Chapter 1)

The Scheme area comprises the existing seawall and adjacent sand and shingle of the Colwyn Bay to Rhôs-on-Sea beach along with the adjacent pedestrian promenade, the highway (Promenade/West Promenade/Rhôs Promenade) and in the central area the grassed slope of Cayley Embankment and Cayley Promenade highway to the west.

As the Scheme involves beach recharge it requires a large working area both on the promenade and beach (solid red line) and out at sea (dotted red line) as shown on Figure 2.1. However only small areas within this red line boundary would be worked on at any one time.

Figure 2.1: Scheme location plan



Source: Mott MacDonald Ltd, 2021

Representative photographs of the Scheme area including the beach, promenade, Cayley Embankment and the Rhôs-on-Sea Harbour groyne are included in Figure 2.2.

Figure 2.2: Photographs of the Scheme area



Source: Mott MacDonald Ltd, 2021

2.2 Scheme description (ES Chapter 3)

The proposed scope of work for the Scheme comprises a combination of coastal defence, promenade and active travel improvements along the waterfront area, alongside highway layout changes.

2.2.1 Coastal works

2.2.1.1 Seawall repairs

Minor repairs (e.g. grouting, re-pointing, coping repairs) to the existing seawall from around the Rydal Boat store to the southern boundary of Rhôs-on-Sea Harbour.

Works are to be completed both from the promenade and from the intertidal area (depending on the repair needed).

2.2.1.2 Rhôs-on-Sea Harbour groyne works

To stop imported sand from causing siltation in Rhôs-on-Sea Harbour, the curved groyne to the south of the harbour entrance needs to be modified by making it around 1.0m higher and adding an additional arm to form a “Y” shape as shown on Figure 2.3.

It's proposed to reuse rock material from the three existing groynes located on the beach within the Scheme red line boundary, along with removal of rock along the base of the existing seawall (which would be redundant following beach recharge) to modify the groyne, meaning no rock needs to be imported.

2.2.1.3 Outfall extensions

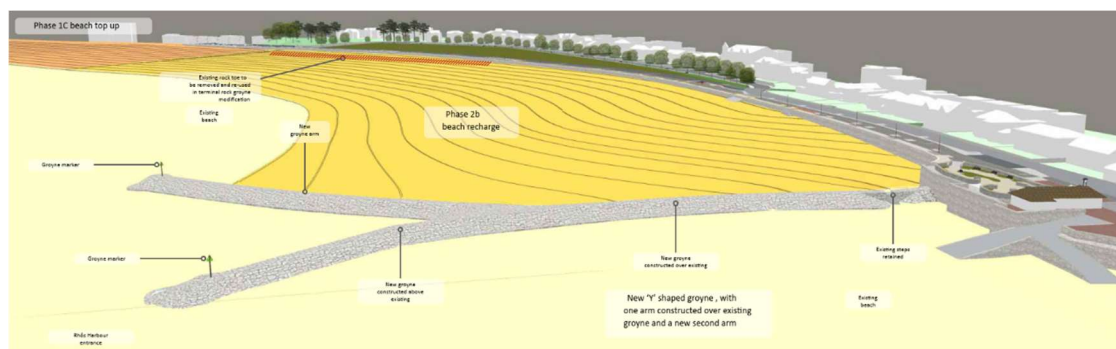
A number of surface water drainage pipe outfall onto the beach in this area. If the beach levels are raised, these pipes will become buried.

To ensure they continue to drain, some outfalls would need to be extended towards the sea, while others will be protected by soakaway structures so they can continue to flow onto the beach.

2.2.1.4 Beach recharge

This would involve the importation and placement of dredged sand to bring beach levels to match the central area (Phase 1) as shown on the visualisation in Figure 2.3. It would be placed from the Rhôs-on-Sea Harbour groyne to the west round to the existing slipway adjacent to the western junction of Cayley Promenade with West Promenade to the east. Next to the groyne the recharge would taper off to merge with existing levels. This would minimise risk of siltation within the harbour area.

Figure 2.3: Visualisation of modified Rhôs-on-Sea Harbour groyne and area of beach recharge

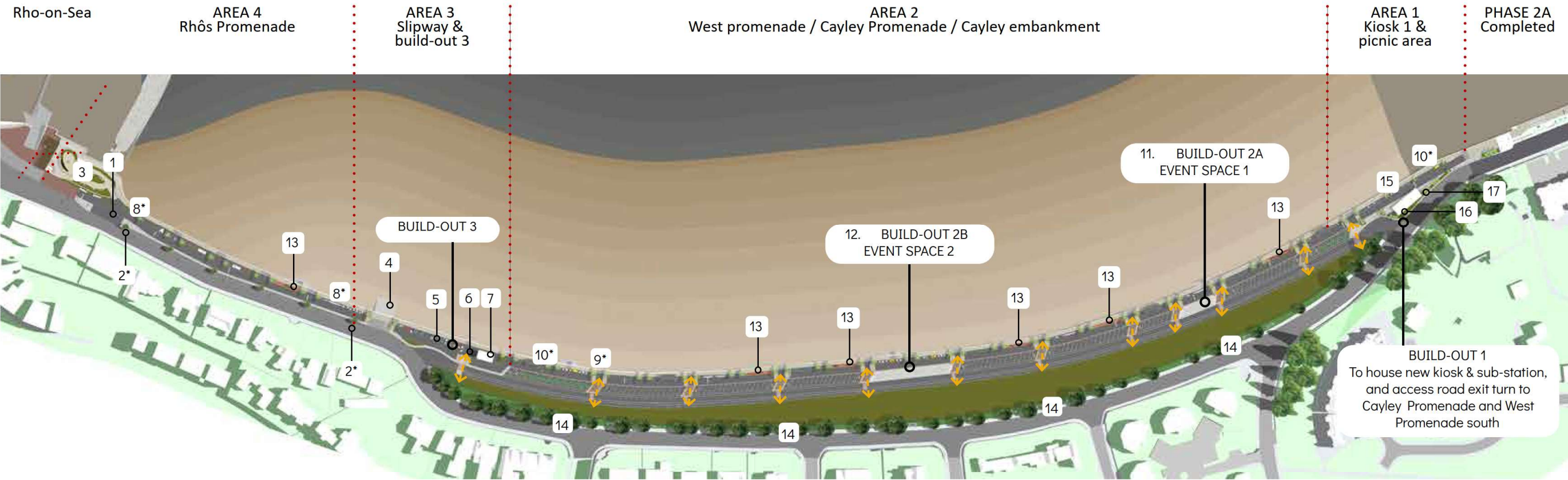


Source: BCA Landscape, 2021

2.2.2 Promenade improvements

In summary, the promenade improvement works would comprise upgrading the promenade to enhance the experience to the general public visiting the area (see Figure 2.4).

Figure 2.4: Promenade improvements general arrangement



KEY

1. 10no new perpendicular parking;

2. Avenue tree planting - high clear stem to maintain sea views from residential properties. Breaks up existing parallel parking arrangement;


3. Rhos-on-Sea proposed gateway feature;

4. Existing slipway with resurface promenade access;

5. Designated picnic area in garden setting to Build-Out 3;

6. Existing sub-station - proposed external cladding refurbishment as part of new kiosk works;

7. New kiosk;

8. 4m wide minimum shared surface along the entire length, with Health Markers at 50m intervals;
9. Pedestrian links  across whole of waterfront, with tactile paving, coloured bitmac road crossing, paving build out with parking meters. Link continues to pedestrian only waterfront edge flanked by raised tree planters breaking up the Activity Zone into approximate 16m long areas with different furniture groupings and activities;

10. Intermediate links across promenade to break up extent of Shared Surface and provide regulated division of Activity Types;
11. Build-Out 2A - 48m long flexible space with vertical features, feature lighting and seating;

12. Build-Out 2B - 24m long flexible space with vertical features, feature lighting and seating;

13. Contained play area - with knee-rail as protective edge against shared area traffic;

14. Cayley Promenade enhancement - proposed exercise trail along grass verge @ 100m centres;

15. Area 1 Picnic area;

16. New kiosk;

17. New sub-station .
- Note 1 : Items 9 and 10 ave been regulated to coincide with column lighting location at approx. 27m intervals and provide access and circulation for parking meters at approx. 54m intervals.

Note 2 : All references with an asterisk (*) denote repeat elements.

Source: BCA Landscape, 2021

2.2.2.1 Pedestrian and cycle paths

There would be a new, high-quality surfaced pedestrian only zone approximately 2m wide that will continue the Wales Coast Path adjacent to the seawall, separated from an approximately 4.0m wide shared surface for pedestrian and cyclists (National Cycle Route 5) with frequent links between the two. This segregation would improve safety for all non-motorised users of the area.

The central dividing strip of the promenade would be comprised of hard and soft landscaping, seating and activity areas as shown on the visualisations in Figure 2.5

Figure 2.5: Visualisations of new pedestrian zone



Source: BCA Landscape 2021

2.2.2.2 Shelters, kiosks and build-out areas

At the start of works the current shelters and kiosks would be demolished. The shelters would be replaced during the promenade improvement works, with the kiosks replaced as part of a separate scheme.

Four “build-out” areas would be included along the promenade as shown on Figure 2.4. These areas would have minimal built-in furniture to provide a flexible space for different types of outdoor activities or events. Two would be located at the eastern and western extents of Cayley promenade respectively and would include locations for future kiosks with utility connection points.

2.2.2.3 Cycle and vehicle parking

Multiple areas for cycle parking would be provided along the promenade adjacent to the shared surface with protective barriers between the cycle parking and highway where necessary.

Overall, there would be a small decrease in the number of car parking spaces, with additional provision of disabled spaces and electric vehicle charging bays (see Figure 2.6).

A number of crossing points between the parallel parking at the base of Cayley Embankment and the promenade area would also be provided.

Figure 2.6: Electric charging bays with new shelter to rear



Source: BCA Landscape, 2021

2.2.2.4 Other promenade works

Hard landscaping: The hard landscape has been designed to provide continuity from previous phases of the Colwyn Bay Waterfront Project and would provide a cost effective but robust finish to the large areas of carriageway, parking, cycleway and footway areas. Themes of artwork and feature paving bands would be continued from previous phases.

Soft landscaping: Planting mixes have been agreed through consultation with CCBC to be appropriate to the coastal location, without requiring excessive maintenance.

Lighting: Improved LED energy efficient lighting is included in Scheme proposals.

Street furniture: A range of robust seating, bins, picnic tables, play elements, cycle parking, electric vehicle chargers, pop-up power facilities and lighting would be incorporated to ensure a high-quality provision, suited to the coastal location.

Water fountain: The Llandrillo-yn-Rhôs Memorial Drinking Fountain is a non-operational 20th century drinking water fountain located on Rhôs Promenade. It is located in the middle of where the new cycle lane is proposed and would have to be moved a short distance. It is proposed to re-connect the fountain to mains drinking water if this is possible without damaging it, to restore it to use to allow the refill of water bottles. There are also proposed to be drinking water refill points at the new kiosk locations.

2.2.2.5 Traffic routing changes

As part of the Scheme it is proposed to change the traffic routing in the area of Cayley Embankment and West Promenade.

West Promenade would become one way from west to east to allow for a wider public realm area, with improved active travel routes (Wales Coast Path, National Cycle Route 5), a much-enhanced public realm and improved parking.

There would be speed restrictions (likely to be 20mph) and traffic calming measures such as speed bumps in this area to make it safer with greater amenity for pedestrians and non-vehicular users.

Cayley Promenade running along the top of Cayley Embankment adjacent to the west would remain two way and 30mph. Unless accessing the parking and shared space area along West Promenade Traffic, passing through the area would be via Cayley Promenade.

Figure 2.7: Visualisation of one way West Promenade with Cayley Embankment to the left



Source: BCA Landscape, 2021

2.2.2.6 Ecological enhancement of Cayley Embankment

Cayley Embankment consists of an area of species poor grassland. This area would undergo 're-wilding'. This would include cut and removal of arisings twice a year, raking of the embankment and application of "green hay" (freshly cut grass) from a botanically diverse local meadow to allow wild meadow seeds to be transplanted naturally.

Additional planting of low-level insect-friendly shrubs within the amenity areas would also improve the quality and species diversity of this habitat.

The current zig-zag path would be removed in the central Cayley Embankment area for safety and this would have the added benefit of minimising human disturbance.

2.2.3 Maintenance

The Scheme would also include future monitoring, management and maintenance actions, including inspections and maintenance of coastal defence structures, and monitoring and management of the sand on the beach as it moves eastward with the prevailing long shore drift conditions.

However, in general, maintenance is anticipated to be required much more infrequently than is currently necessary following Scheme completion and the improvement in the level of coastal defence.

2.3 Planning and policy framework (ES Chapter 6)

The Scheme supports policy objectives at all planning levels, particularly with regards to enhancing sea defences and reducing flood risk. Additionally, regeneration of the waterfront is considered to support policy objectives to regenerate Colwyn Bay as a desirable tourist destination.

The long-term effects of the Scheme are also considered to support planning objectives concerned with nature conservation and environmental management. Improved erosion protection provided to transport infrastructure would support policy objectives for developing sustainable transport links in North Wales.

2.4 Scheme construction (ES Chapter 4)

2.4.1 Programme and phasing

It is anticipated that construction works would commence in March 2022 with an overall construction period of around 14 months.

Construction activities would be completed in the following general order:

- Repairs to seawall, modifications to Rhôs-on-Sea Harbour groyne and extension of outfalls;
- Beach recharge; and
- Promenade works.

However, the exact phasing of each Scheme element may be subject to change depending on the specific contractor methodology utilised and some work could be undertaken simultaneously.

2.4.2 Works to be completed

2.4.2.1 Seawall repairs, Rhôs-on-Sea Harbour groyne works and outfall extensions

This work is all proposed to be completed prior to beach recharge at lower tidal states using land-based equipment. Access to the beach would be via existing slipways with no additional temporary accesses required.

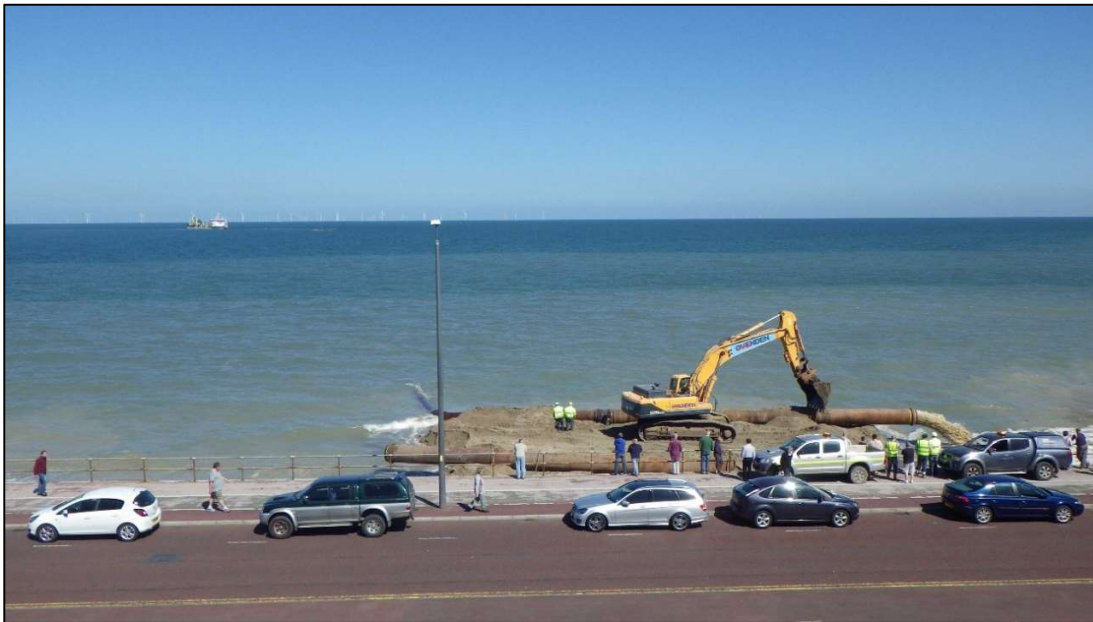
2.4.2.2 Beach recharge works

The beach recharge works would involve dredging sand from existing offshore licensed dredging areas, transporting it to site by sea and then using a pipeline to pump the sand ashore (as was completed for the Phase 1 beach recharge works, see Figure 2.8).

The approximately 1.6-1.8km pipeline would be constructed in advance at Pensarn Beach around the coast to the east before being floated round on a spring high tide.

Land based equipment (such as excavators, bulldozers and dumper trucks) would spread the sand into the required profile before moving onto the next section. Only small areas would be worked on at any one time.

Figure 2.8: Photograph showing beach recharge operations in the Phase 1 area – pipeline in the foreground and dredger vessel in the distance



The delivery and placement of sand would be a 24-hour operation anticipated to take around 8 weeks if using a large delivery vessel or 15-20 weeks if a smaller vessel is selected.

On completion of the operation, the pipeline would be dismantled and removed from site, either towed away by sea or dismantled and removed from site by road. The new beach area would be likely to be suitable for demobilisation of the pipeline.

2.4.2.3 Promenade works

The following general activities would be completed:

- Land-based works to extend Welsh Water outfalls and some seawall repairs from the landward side;
- Demolition (where necessary) and clearance of existing structures would be required (shelters and kiosks) – along with removal of street furniture;
- Structural repairs to the promenade;
- Removal of existing surfacing and installation of new infrastructure (lighting columns, parking meters, ducting etc); and
- Resurfacing works to public realm and road areas, installation of additional above ground public realm equipment, along with new road markings, signage, artwork features and soft landscaping etc.

It's anticipated that standard construction equipment would be utilised for the above such as various sizes of excavators, dumper trucks, concrete pumps and mixer trucks, heavy goods vehicles (HGVs) for deliveries, powered hand tools, generators, cranes and surfacing equipment.

2.4.3 Construction traffic routes

Delivery of materials and equipment would be via road delivery, exiting the A55 Expressway at Junction 22 before progressing along the Promenade and West Promenade highway into the Scheme area. This avoids routing of construction traffic through the residential streets of Colwyn Bay and Rhôs-on-Sea.

It is anticipated that the worst-case total number of HGV trips to and from the site would be no more than two per hour at the busiest periods, equating to one arrival and one departure every fifteen minutes. However, for the majority of the construction programme, HGV numbers would be anticipated to be less frequent than this. There is the potential for an approximately two-week period during pipeline deconstruction when vehicle movements may increase to four per hour depending on what activities coincide.

2.4.4 Road and active travel route diversions

There would be a requirement for West Promenade to be closed between the junctions of Cayley Promenade for approximately 12 months to allow for Scheme construction with road and non-motorised traffic (such as pedestrians and cyclists) to be diverted over Cayley Promenade.

Some short periods of temporary traffic management may also be necessary for certain Scheme phases along West Promenade and Rhôs Promenade (to the immediate east and west of Cayley Promenade). This would be to provide safe access and working areas for the construction workforce and their vehicles and equipment. It would also permit safe passage of vehicles and non-motorised users, such as pedestrians and cyclists, through and adjacent to the works.

For the duration of the promenade works, diversions of the Wales Coast Path and National Cycle Route 5 would be required. Diversions would be along the pedestrian pavement to the north of the highway (West Parade/East Parade/Marine Drive) and Cayley Promenade.

2.4.5 Beach closures

Beach closures would be required for the duration of the seawall, Rhôs-on-Sea Harbour groyne, outfall and beach recharge works (anticipated to be April - September 2022) although efforts would be made to open sections of the beach to the public as soon as it is safe to do so. The adjacent Phase 1 area would be open throughout. It is not anticipated that the area of beach within the harbour would need to be closed.

2.4.6 Harbour

The Rhôs-on-Sea Harbour groyne works are anticipated to take approximately 6-8 weeks. Rock would be stockpiled to avoid impacting the harbour, however, it is considered likely that access in and out of the harbour would not be possible whilst the northern arm is constructed (anticipated to be for a period of approximately 2 weeks). While the rest of the groyne and the beach recharge works are taking place, harbour access would be anticipated to be maintained although there would be restrictions in relation to movements once out of the harbour area in relation to avoid the sand delivery vessel and pipeline buffer areas.

A robust communication plan would be put in place by the contractor to keep local marine users informed in advance of any closures and necessary marine diversions throughout the duration of the groyne and beach recharge works.

2.4.7 Construction Compounds

The location/s of the construction compound/s for the Scheme have not yet been finalised however all would be located within the existing red line boundary. It is considered likely that the principal compound would be located on West Promenade between the eastern and western junctions with Cayley Promenade.

There may need to be minor sub-compounds located elsewhere on the closed pedestrian promenade for particular activities such as the beach recharge works which would move along the promenade.

3 Summary of Environmental Effects

Following a thorough EIA scoping process, a number of different environmental topics were “scoped-in” for assessment within the ES. A summary of the findings of each of these environmental topics is provided below.

While reading the summary, the following definitions commonly used in the EIA process may be useful:

- **Receptor:** An environmental receptor is someone or something that could be affected by environmental changes. Receptors could be human (e.g. local residents or users of the promenade), could be associated with local wildlife (e.g. protected areas or species identified), or even associated with the wider environment (e.g. our climate);
- **Impacts and effects:** Impacts are the predicted changes to the environment as a result of the Scheme, while effects are the consequences of impacts on environmental receptors;
- **Adverse effects:** Effects that have a negative impact on environmental receptors;
- **Beneficial effects:** Effects that have a positive impact on environmental receptors;
- **Significant effects:** These effects are usually classed as moderate, large and very large. Very large: Only adverse effects are normally assigned this level of significance. They generally represent important factors in the decision-making process for the Scheme;
- **Mitigation measures:** means to prevent, reduce or control adverse effects of the Scheme.
- **Construction Environmental Management Plan (CEMP):** The CEMP is a plan that the Scheme contractor would develop which details the measures necessary to minimise environmental effects of the Scheme during construction; and
- **Active travel:** The transport of people or goods using non-motorised means such as walking and cycling.

3.1 Air quality (ES Chapter 7)

An air quality assessment completed for the Scheme modelled the potential air quality impacts from traffic during construction and operation on sensitive worst-case receptors. The greatest air quality effect from the Scheme was identified as not being significant for the receptors identified. The Scheme is not predicted to result in any new exceedances of air quality objectives.

In addition, an assessment of construction dust effects was undertaken for the Scheme. Following the appropriate implementation of the mitigation measures listed in within the ES, effects are predicted to be not significant.

3.2 Historic environment (ES Chapter 8)

An assessment of the effects of the Scheme on the local historic environment (including built heritage and archaeological assets) has been completed. The operation of the Scheme is not anticipated to result in any alterations that would significantly impact any heritage assets and therefore it was scoped out of the ES.

During construction of the scheme there would be the potential for temporary adverse (not significant) effects in relation to Llandrillo-yn-Rhôs Conversation Area and a number of other listed structures resulting from changes to their setting in relation to increased noise levels and of the presence of construction vehicles and compounds. Mitigation for these effects has been detailed within the ES and would be included within the CEMP.

The construction of the Scheme would cause a permanent impact to the Llandrillo-yn-Rhôs Memorial Drinking Fountain, although the mitigation measures including its movement, retention and refurbishment would result in a significant beneficial effect for the asset.

The construction of the Scheme has the potential to result in a permanent impact upon terrestrial and maritime archaeological remains dating to the prehistoric, medieval, and post-medieval periods. This would arise as a result of excavations associated with the Rhôs-on-Sea Harbour groyne and outfalls and, potentially, as a result of compression from the movement of heavy vehicles on the beach, stockpiling of rock armour and the operation of offshore delivery vessel, barge, tug, pipeline and equipment required for beach recharge works. Mitigation measures proposed include:

- Avoidance of known archaeological remains;
- The provision of archaeological awareness training and reporting procedures;
- Archaeological monitoring during excavation works; and
- Potential requirement for further geophysical survey.

With the proposed mitigation in place the construction effects are anticipated to become not significant by offsetting potential harm.

3.3 Biodiversity (ES Chapter 9)

The ecological assessment considered all relevant terrestrial (on land) and marine (at sea) designated sites, habitats and species. The Scheme is located adjacent to the Liverpool Bay Special Protection Area and is also near Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay, Special Area of Conservation. To inform the ecological assessment a number of desk and field-based studies surveys were completed including intertidal habitats surveys, wintering bird surveys, vegetation walkovers and bat surveys.

The key impacts associated with the Scheme would be anticipated to relate to the construction phase of the Project. In the absence of mitigation, the works could:

- Damage the identified ecological receptors (through pollution events and vehicle tracking);
- Disturb birds, marine mammals and fish (from vibration, noise, lighting, visual disturbances from works and changes in turbidity); and
- Cause damage to habitats (such as smothering benthic invertebrates or through pollution events).

Mitigation measures have been outlined in the ES and would be implemented as part of a CEMP to specifically safeguard these features and minimise disturbance, following which no significant residual risks are anticipated. There are no residual significant effects anticipated on biodiversity once these measures have been implemented.

In the long-term, the operational Scheme is anticipated to be more resilient to future demand and require less maintenance, therefore reducing disruption to ecology. The rewilding of Cayley Embankment is anticipated to have a beneficial effect to terrestrial ecology in the long term.

3.4 Climate (ES Chapter 10)

A carbon assessment has been completed for the Scheme to determine the impact the construction of the Scheme would have upon climate change and a Carbon Management Plan has also been produced. The production and use of construction materials generates greenhouse gas emissions (also known as carbon emissions). Emissions also occur during the use of construction equipment and transport of materials to site. As a result, the assessment

considered these activities and the carbon emissions associated with them. Throughout the iterative design process large savings have been discussed and are currently being implemented, as a result of this there has been a 46% reduction in carbon emissions associated with the design. Given that climate change is a global issue, and that the Welsh Government have committed to reaching net-zero emissions by 2050, any greenhouse gas emissions should be considered as significant.

The underlying purpose of the Scheme is to increase the resilience of the coastline in this area to coastal process, flooding and the effects of climate change. The requirement for less frequent repair work and more efficient lighting would also result in operational benefits.

3.5 Coastal processes and Flood Risk (ES Chapter 11)

3.5.1 Coastal Processes

During the construction of the Scheme there are likely to be temporary small-scale impacts to the coastal processes along this frontage that result from the stockpiling of rocks and the movement of vehicles, sand and pipelines along the beach. Mitigation for these impacts has been detailed within the ES and would be included in the CEMP. With the proposed mitigation the construction stage effects of the Scheme are considered to be not significant.

Following the construction of the Scheme, it is anticipated that there would be a permanent beneficial effect (not significant) relating to the introduction of beach material that will be imported to the intertidal area. This would return the beach to a condition closer to what it would have been before the sea wall was constructed and means the sediment would be available to move round the coastline.

3.5.2 Flood risk

During the construction of the Scheme there could be an increased risk of flooding along the frontage assessed as being not significant. To reduce this impact, mitigation has been proposed in the ES including the requirement for a construction phase Flood Risk Management Plan. Additional measures would also be included within the CEMP.

Once operational, the Scheme would have a significant beneficial effect in reducing the current overtopping (coastal flooding) risk along the frontage and providing structural stability to the coastal defences in the longer term. The Promenade and assets behind the promenade would be protected from overtopping as a result of the beach recharge. As climate change increases in future, the protection from overtopping is likely to decrease and therefore in the future additional modifications may need to be considered to the defences.

3.5.3 Navigation

The marine aspects of the Scheme construction including pipeline floatation round the coast and the presence of off-shore vessels and the associated pipeline would be considered to have temporary adverse (not significant) effects on navigation and marine users. Rhôs-on-Sea Harbour would be closed for an anticipated period of approximately 2 weeks and there would be some restrictions on movements in the marine area for the 8-20 weeks for the beach recharge works.

Ongoing consultation and communication with marine users regarding the location and timing the barge and pipeline operations and any safety buffer zones would be undertaken to minimise effects as much as practically feasible.

3.5.4 Coastal water quality

The Water Framework Directive, aims to protect and improve the water environment. The standard objective is to achieve “good status”, when considering a lot of different water quality indicators known as “quality elements”. An assessment has been completed for the Scheme, identifying the potential for effects on the North Wales Coastal Waterbody. When taking into account the mitigation measures both from the design stage and those proposed during construction including adherence to the Scheme CEMP, no deterioration of the water body quality elements is anticipated. Bathing waters would be closed while intertidal works are ongoing. Both construction and operational effects are considered to be not significant.

3.6 Landscape (ES Chapter 12)

The Landscape and Visual Impact Assessment (LVIA) investigated the effects the Scheme would have from the point of view of landscape and visual receptors. Landscape receptors are different types of landscape classified by various official bodies. They include nationally designated Landscape Character Areas and Marine Character Areas. Visual amenity receptors are people including residents, walkers, and road users. Receptors can only be considered if they are predicted to have visibility of the Scheme.

The LVIA incorporated viewpoints to give a wide range of views covering landscape and visual receptors in the area. The effects of the Scheme on views from these areas were then assessed by professional landscape architects using methods as advised by the Landscape Institute.

The main findings were that there would be temporary significant effects on the local landscape area and visual amenity during construction of the Scheme in relation to recreational users of the Promenade and waterfront such as walkers and cyclists. This would be caused by the diversion of public rights of way and roads, and the introduction of site fencing/hoarding, construction plant and equipment.

Notable visual impacts in operation would be limited to residents in properties on Cayley Promenade due to the new traffic routing associated with the Scheme, the introduction of new infrastructure associated with this and the increased awareness of this due to the proximity to these properties. These effects are not anticipated to be significant. Once operational, the Scheme would provide a continuous high quality well-defended promenade with associated active travel routes, improved intertidal area access and improved public realm.

In terms of the landscape character of the site and surrounding area and having regard to the similar and proposed coastal defence schemes in the area, it is considered that the landscape has the capacity to accommodate the proposed coastal defences.

3.7 Materials (ES Chapter 13)

Material resources would be required for the construction of the Scheme. The Scheme has the potential to impact on the availability of material resources for other projects locally and in the future, subsequent impacts on the demand for key construction materials, and the depletion of non-renewable resources. The material that would be required in the largest quantities would be aggregates, (including pre-cast components) and sea dredged sand. It is anticipated that rock removed during the construction works will be re-used within the Scheme. The sea dredged sand would remain in the marine environment and would be classed as a renewable material resource.

Environmental design and mitigation measures across all phases of the Scheme have and would continue to try to minimise the potential effects of material resource use and waste generated. These measures have to date included the completion of a materials reduction workshop at the early design stages and waste would continue to be managed during construction in accordance with a Site Waste Management Plan, which sets out good practice measures for minimising

waste. In addition, the CEMP would detail mitigation measures to be adhered to on-site to reduce the effects on material resources during construction. Where appropriate, a Materials Management Plan would also be used to ensure materials are re-used efficiently. No significant effects are anticipated as a result of the Scheme.

3.8 Noise and vibration (ES Chapter 14)

The noise and vibration chapter assesses the effects of airborne construction noise, construction vibration and indirect construction noise due to increased volumes of traffic and rerouted traffic along proposed diversion routes. It considers all noise sensitive receptors identified within the study area. Operational road traffic noise has also been assessed for the local road network for the proposed changes in traffic flows following the completion of the Scheme.

There are numerous residential receptors identified which would be located close to the construction works. The minimum distance between the construction site boundary and the closest residencies would be approximately 15.0m. The noise assessment has been undertaken at the identified noise sensitive receptors by comparing predicted levels against published assessment criteria.

The construction noise assessment has determined that the associated levels are expected to give rise to temporary significant effects due to the Scheme construction works and the associated diversion route. However, these effects would be temporary and would vary as works progress along the promenade. A number of mitigation measures have been recommended within the ES to reduce the effect from airborne construction noise which include Best Practicable Means and barriers for providing noise screening where practical.

The operational phase road traffic noise assessment has determined that the associated noise levels are expected to increase and give rise to a significant adverse effect to residences along Cayley Promenade due to the proposed permanent rerouting of traffic from West Promenade during the operational phase of the Scheme. It should be noted that, for context, traffic noise levels on Cayley Promenade following implementation of the Scheme are predicted to be marginally below those currently experienced at residences along Rhôs Promenade.

3.9 Population and human health (ES Chapter 15)

The construction phase of the Scheme is likely to cause significant adverse effects for people using the promenade and beach for recreation, including walking, cycling and activities on and in the water. This is because of reduced access to the Promenade, Colwyn Bay Beach and Rhôs-on-Sea Beach during the construction works. Although it should be noted that there is not anticipated to be any restriction on the use of Rhôs-on-Sea Harbour beach and the beach in the adjacent Phase 1 area. Mitigation measures are detailed within the ES for the management and include recommendations for good planning including the re-opening of beach sections as soon as is practically feasible.

Local businesses are likely to experience temporary significant adverse effects due to disruption to access due to the close proximity of the construction activity, which might result in a reduction in footfall. These effects would also be managed through the CEMP which would require the contractor to minimise disruption to businesses, for customers, deliveries and staff.

There will be considerable construction work to upgrade the Promenade, requiring the demolition of two kiosks occupied by cafes and four shelters. The loss of these businesses and facilities would be mitigated by ensuring alternative facilities are provided on the newly rebuilt Promenade, and that the businesses are supported to help them withstand any period of temporary closure.

Increased construction activity would result in higher levels of noise and traffic, as well as pedestrian and cyclist diversions and landscape changes in the vicinity of the waterfront. These

changes are, likely to have a temporary adverse neighbourhood quality effect for residents. However, these effects would be temporary and would be managed through a Construction Traffic Management Plan which would require the contractor to make sure that the diversions and other management procedures are well advertised.

During the operational phase the majority of population and human health effects are anticipated to be permanent, beneficial and significant. The Scheme would result in improved coastal protection, safeguarding the community from coastal erosion in the long term, having a permanent beneficial effect for defended businesses and community facilities and residents. The promenade enhancements and new, improved and extended public realm areas would contribute to the regeneration of the area, providing to permanent beneficial effects for businesses and tourism.

The local population and visitors would also have access to enhanced walking, cycling and recreational opportunities leading to improved quality of life.

3.10 Traffic and transport (ES Chapter 16)

A Transport Statement has been produced for the Scheme. This is a high-level assessment of the Scheme's predicted traffic and travel impacts both during construction and operation, including a summary of proposed measures required to manage those impacts. The Transport Statement looked at both the estimated traffic anticipated to be generated by construction deliveries and in relation to diverted traffic. It identified the requirement for a Construction Traffic Management Plan to be produced by the Scheme contractor prior to works starting. On the basis of this assessment, it is considered that the traffic impacts associated with the construction of the coastal defences would be satisfactorily accommodated by the existing highway network and proposed diversion routes.

Therefore, the ES chapter covered only the operational phase of the Scheme and considered the impacts on different transport users in the scheme operation area including drivers, buses, pedestrians and cyclists, as well as local residents. The traffic in the area is already predominantly local, with some visitors, particularly in holiday periods. The localised nature of the transport network means that users can easily adapt to any changes to the network and adjust their journeys accordingly.

A series of site-specific traffic counts were commissioned to understand the existing flows on the network. The effects of the Scheme during the operation phase for pedestrians and cyclists would be expected to be slightly beneficial (not significant), with improved active travel facilities along West Promenade resulting in improved amenity.

General traffic and local residents would experience an adverse (not significant) effect as a result of the Scheme's operation when considering the small diversion to the existing road network, and resultant increased traffic flows on Cayley Promenade. Whilst Cayley Promenade would become busier under Scheme operation, it should be noted that the overall volume of traffic travelling through the area around the Scheme is not expected to change as a result of the Scheme.

3.11 Cumulative effects (ES Chapter 17)

An assessment of effects that occur both as a result of combining different environmental topic effects (known as "in-combination" effects), along with considering the effects that might be generated "cumulatively" by the Scheme alongside other proposed development in the area, has been undertaken.

During construction, these effects would potentially include the cumulation of disturbance from construction dust, noise, vibration, and lighting or other visual intrusions on sensitive wildlife, human and visual receptors in addition to construction traffic and disruption to journeys. However, these effects would be temporary in nature and best practice mitigation measures detailed within

the ES and included in the CEMP would ensure that combined effects are reduced as far as reasonably practicable. No additional significant in-combination effects have been identified when considering the different environmental topics together.

A number of other developments in the area have been considered alongside the Scheme for their potential to generate cumulative effects, including developments on and adjacent to the promenade, and along the North Wales coastline, most notably the Old Colwyn Coastal Defence and Active Travel Scheme (Phase 3 of the Colwyn Bay Waterfront Project).

The potential for additional significant adverse cumulative effects has been identified in relation to construction, including the potential for temporary:

- Reductions in footfall to businesses in Colwyn Bay related to disruption.
- Reductions in recreational opportunities along the Colwyn Bay promenade and beach.
- Diversions of the promenade and active travel routes including the Wales Coast Path and National Cycle Route 5.

However, all coinciding developments would have CEMPs which would require management measures to be put in place to maintain access to businesses, for staff, deliveries and patrons. Temporary diversions and other management procedures would have to be well advertised throughout the wider area.

In addition, the potential for significant beneficial cumulative effects has been identified in relation to the other coastal defence developments proposed within Colwyn Bay and around the North Wales coast. Together these developments would improve resilience to coastal erosion and reduce the current overtopping and associated flood risk at some of the most vulnerable and highly populated locations along the North Wales coastline. Once operational, the cumulative developments would provide an improved overall standard of protection against flooding and structural durability to the coastal defences in the longer term, facilitating investment and regeneration in the defended areas along with protecting and improving active travel routes and other key infrastructure.

For local residents and visitors to Colwyn Bay there would be cumulative significant beneficial effects relating to the provision of a continuous and high quality, landscaped promenade environment, with improved facilities for pedestrians and cyclists alongside other recreational opportunities, along with improvements for business investment, local tourism and visitor spending within the local area.

Cumulatively the developments around Colwyn Bay would also act to defend critical transport infrastructure including the North Wales Coast Railway Line and A55 Expressway.

