

REPORT

Scarborough North Bay - proposed maintenance works

Environmental Report

Client: Scarborough Borough Council

Reference: PC2176-RHD-ZZ-XX-RP-Z-0001

Status: S0/00

Date: 29 July 2022

HASKONINGDHV UK LTD.

Westpoint
Peterborough Business Park
Lynch Wood
Peterborough
PE2 6FZ
Industry & Buildings
VAT registration number: 792428892

+44 1733 3344 55 **T**
info@uk.rhdhv.com **E**
royalhaskoningdhv.com **W**

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Revision history

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00	29/07/2022	First issue	Iain Johnson	Emma Hick	Nick Cooper

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Acronyms

Acronym	Acronym description
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
CEMP	Construction Environmental Management Plan
EA	Environment Agency
EIA	Environmental Impact Assessment
EQO	Environmental Quality Objective
FRAP	Flood Risk Activity Permit
MCAA	Marine and Coast Access Act
MCZ	Marine Conservation Zone
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
NCA	National Character Area
OBC	Outline Business Case
RNLI	Royal National Lifeboat Institution
SAC	Special Area of Conservation
SBC	Scarborough Borough Council
SI	Statutory Instruments
SPA	Special Protection Area
SSSI	Special Site of Scientific Interest
WFD	Water Framework Directive

1 Introduction

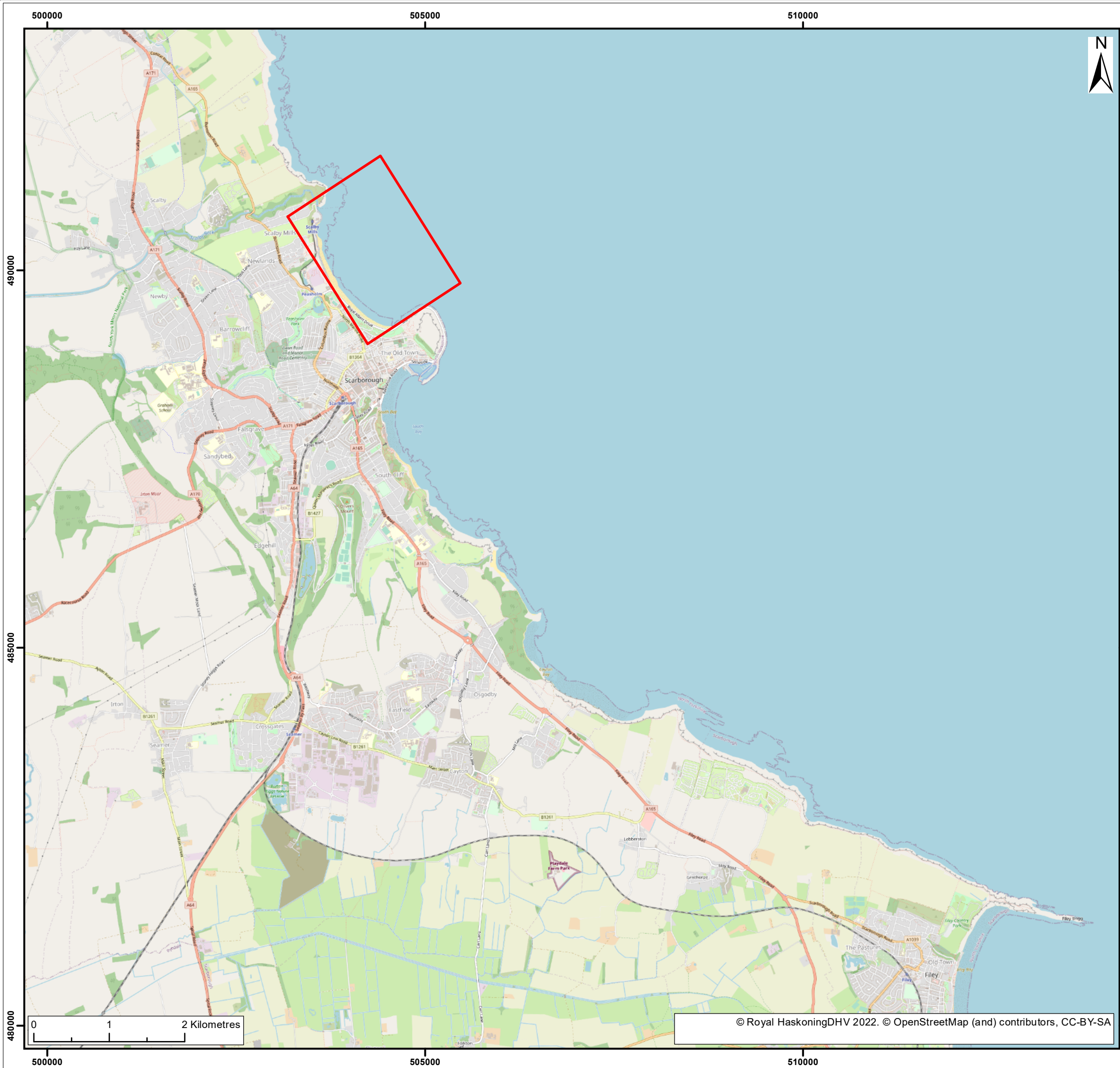
Scarborough Borough Council (SBC) has a requirement to undertake urgent repairs/ refurbishment (the proposed works) of the existing coastal defence assets located in North Bay, Scarborough, North Yorkshire (**Figure 1**). In order to secure funding for the proposed works, SBC has prepared an Outline Business Case (OBC) (July 2022). This Environmental Report has been produced in support of the OBC.

This is the second phase in a phased repair scheme which was originally assessed and approved in 2012. Scarborough Borough Council (SBC) has previously produced and submitted a Project Appraisal Report (PAR, previous approval template which has now been replaced by the OBC) to the Environment Agency (EA) to secure funding for the first phase of the repair works to the existing defences at North Bay. The previous PAR was supported by an Environmental Report produced by Royal HaskoningDHV in 2012.

This Environmental Report presents a description of the baseline environment within the area which has potential to be affected by coastal erosion/ coastal flooding. The baseline information is consequently used to identify key environmental constraints and opportunities associated with proposed coastal management options, in order to determine the environmentally preferred option for the frontage.

The report is structured as follows:

- Section 1: Introduction
- Section 2: Baseline environment
- Section 3: Environmental constraints
- Section 4: Environmental appraisal of options
- Section 5: Environmental effects of the preferred option
- Section 6: Review of regulatory requirements
- Section 7: References



Legend:
 Site Location

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Title:
Site Location Plan

Figure: 1 Drawing No: PB2176-RHD-ZZ-XX-DR-Z-0001

Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:50,000
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Client Project: Scarborough Borough Council - North Bay	Report: Environmental Report
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2 Baseline Environment

This section describes the baseline environment for North Bay, Scarborough and how the environment and the bay may potentially be impacted by the proposed works.

2.1 Socio-economics

2.1.1 Local community

Scarborough is one of the principal urban areas in North Yorkshire with a population of around 52,000 within the town boundary (North Yorkshire County Council, 2022)¹ and approximately 108,000 within the Borough (Office for National Statistics, 2021)², a less than 0.1% population increase since the 2011 census. The Borough has a balanced economy with employment mainly based on manufacturing, tourism, public sector services and retail. The North Bay area is dominated by residential properties, hotels, guesthouses, and leisure and recreation facilities.

2.1.2 Tourism and recreation

Tourism, including that associated with the sea front, is of vital importance to Scarborough. The town supports a substantial leisure and tourism industry, providing in the order of 4,000 full time equivalent jobs and generating annual revenues estimated at around £140 million. An essential feature of this tourism is the traditional beach use and this, both within North Bay (and South Bay), are key local recreational aspects of the frontage (Halcrow, 2008).

North Bay is a Blue Flag³ beach, a status that is awarded to beaches that are compliant with 32 criteria covering water quality, environmental management, safety and services and environmental education and information.

The coastal recreation opportunities within and immediately adjacent to North Bay include walking along the beach and promenade, watersports, visiting attractions including Peasholm Park, Miniature North Bay Railway, playing golf at Scarborough North Cliff Golf Club, Scarborough Open Air Theatre and Scarborough Sea Life Centre. There are approximately 70 self-catering apartments located at The Sands, located immediately north of Peasholm Gap.

North Bay is bordered by the England Coastal Path, specifically the section which runs from Filey Brigg to Newport Bridge in Middlesbrough (**Figure 2**). Part of this stretch comprises the coastal part of the existing Cleveland Way National Trail. The Cleveland Way National Trail is a 175 km walking route which starts at the market town of Helmsley and runs around the North York Moors National Park and along the North Yorkshire coastline to Filey (National Trails, 2022)⁴.

At Scarborough, the trail passes through Scalby Mills past the Sea Life Centre and along the seafront at North Bay. The trail leaves North Bay by turning off the seafront onto Albert Road where it passes up onto the cliff top. The main advantage for the coastal sections of this existing National Trail becoming part of the England Coast Path is the ability of the path to adapt to coastal erosion via rollback. This roll back approach ensures that the path will be available for walkers in perpetuity.

¹ <https://www.northyorks.gov.uk/north-yorkshire-population-information>

² <https://www.ons.gov.uk/visualisations/censuspopulationchange/E07000168/>

³ <https://www.blueflag.global/>

⁴ https://www.nationaltrail.co.uk/en_GB/trails/cleveland-way/

2.1.3 Critical infrastructure

The A165 runs approximately north-south from Burniston, and through Scarborough, and onto Bridlington, 25 km to the south. It is located approximately 150 m west of North Bay at Peasholm Gap. Adjacent to the coast at the southern end of North Bay is Royal Albert Drive, which was protected by the East Pier, Castle Headland and the Holms scheme (2005), and which is the main coastal route linking Scarborough's North Bay and South Bay.

Yorkshire Water completed work, in 2012, to improve the storage, transfer and treatment of storm water in Scarborough at five locations across the town including Scalby Mills and Peasholm Gap at the centre of the North Bay frontage (Yorkshire Bathing Water Partnership, 2011). The work included a new pumping station at Scalby Mills adjacent to the existing station. The work at Peasholm Gap involved the installation of an underground storm overflow chamber.

The Royal National Lifeboat Institution (RNLI) maintains a lifeguard station at Scarborough South Bay. Although the lifeboat station is at South Bay, the North Bay is a lifeguarded beach. There are a number of access points onto the foreshore from the promenade, including steps and slipways.

2.2 Biodiversity, flora and fauna

There are no Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Ramsar sites located at North Bay or immediately adjacent. The closest designated site is the Flamborough and Filey Coast SPA, located approximately 5.5 km to the southeast (**Table 2-1**) (**Figure 3**). There are two Sites of Special Scientific Interest (SSSI) located in close proximity to North Bay, one at the northern end and one at southern end of the bay. These are designated for geological purposes (**Section 2.6**).

There are no Marine Conservation Zones (MCZs) located at North Bay. The closest MCZ to North Bay is located at Runswick Bay, approximately 30 km north.

The intertidal area in front of the existing defences comprises mostly sand, with patches of rocky shore present towards the south and around the Sea Life Centre in the north. The sandy intertidal area is considered to be of low biodiversity value (Halcrow, 2008); however, the rocky shore is deemed to be of moderate importance due to its potential to support foraging birds. The rocky intertidal area in front of the Sea Life Centre and around Scalby Ness is known to support overwintering birds. The number of individuals present is not known to be nationally significant (Halcrow, 2008).

There are no habitats listed on the Priority Habitat Inventory⁵ along the North Bay frontage, seaward of the existing defence, e.g., maritime cliff and slope, mudflat, saltmarsh, sand dunes. The closest such habitat is an area of deciduous woodland located approximately 50 m inland of the existing defence, to the north of the Open Air Theatre.

Table 2-1 Designated sites for conservation

Designated site	Distance/ Direction from North Bay	Reason for designation
Flamborough and Filey Coast SPA	5.5 km southeast	<ul style="list-style-type: none"> Gannet, <i>Morus bassanus</i> - A016, b Guillemot, <i>Uria aalge</i> - A199, b Kittiwake, <i>Rissa tridactyla</i> - A188, b Razorbill, <i>Alca torda</i> - A200, b Seabird assemblage

⁵ <https://naturalengland-defra.opendata.arcgis.com/datasets/priority-habitat-inventory-north-england/explore>

Designated site	Distance/ Direction from North Bay	Reason for designation
Beast Cliff-Whitby (Robin Hood's Bay) SAC	8.7 km north	<ul style="list-style-type: none"> H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts
North York Moors SPA	10.4 km north northwest	<ul style="list-style-type: none"> Golden plover, <i>Pluvialis apricaria</i> - A140, b Merlin, <i>Falco columbarius</i> - A098, b
Flamborough Head SAC	17.7 km southeast	<ul style="list-style-type: none"> H1170 Reefs H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H8330 Submerged or partially submerged sea caves

2.3 Water

2.3.1 Bathing waters

The objective of the Bathing Waters Directive (76/160/EEC) is to protect public health and the environment from faecal pollution in areas designated as bathing waters. Designated bathing waters require regular water quality monitoring, carried out by the EA, throughout the bathing season (15 May to 30 September) to ascertain whether they meet mandatory or guideline standards. Guideline standards are 20 times stricter than the mandatory standard, and meeting the guideline standard is one of the main criteria for the award of the European Blue Flag⁶ status.

North Bay is a designated bathing water⁷. Water quality is currently classified by the Environment Agency as 'excellent', meaning that the water meets the stricter UK standards of the Bathing Water Directive⁸.

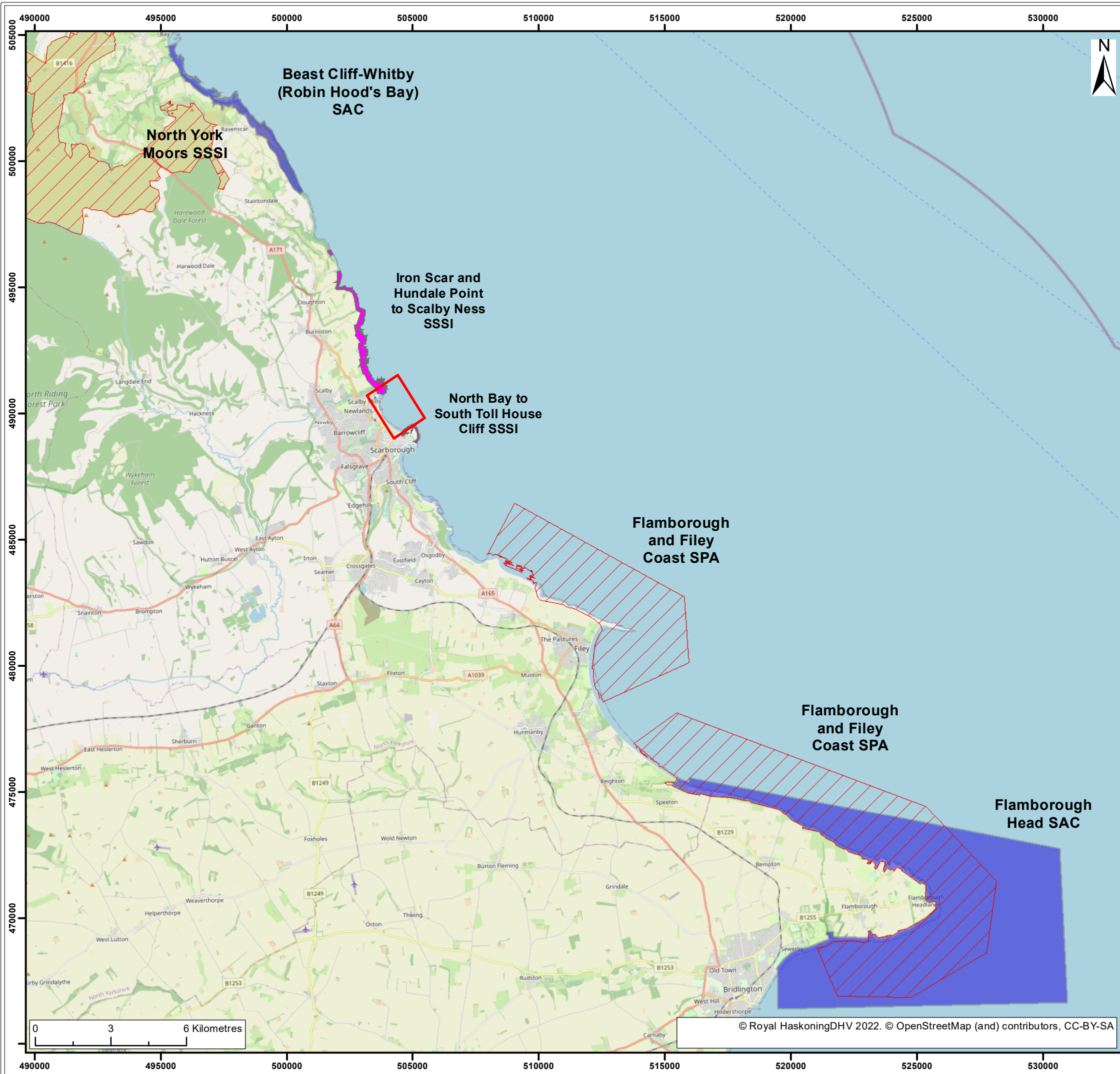
A catchment of approximately 60 km² drains into the North Bay bathing water (**Figure 4**). Peasholm Beck, a partly culverted stream runs through the northern half of Scarborough and drains into Peasholm Lake. The overflow from the lake discharges into North Bay through a storm overflow close to the bathing water. The bathing water is also affected by Scalby Beck, which discharges into the North Sea to the north of the bathing water.

Scalby Beck passes through a partly rural and partly urban catchment. At the top of Scalby Beck is a flood gate which separates the watercourse from the River Derwent. During normal weather the flood gate is closed. However, during or after heavy rainfall, this flood gate opens releasing flood water from the River Derwent into Scalby Beck (Environment Agency, 2021).

⁶ <https://www.blueflag.global/>

⁷ <https://environment.data.gov.uk/bwq/profiles/profile.html?search=scar&site=uke2206-07300>

⁸ <https://environment.data.gov.uk/bwq/profiles/profile.html?search=scarborough&site=uke2206-07300>



Legend:


- Site Location
- Sites of Special Scientific Interest (England) © Natural England
- Special Protection Areas (England) © Natural England
- Special Areas of Conservation (England) © Natural England

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Designated Sites

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Figure: 3	Drawing No: PB2176-RHD-ZZ-XX-DR-Z-0003		
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Royal HaskoningDHV
Enhancing Society Together

Marlborough Crescent,
Marlborough House,
Newcastle upon Tyne, NE1 4EE
Tel +44(0)191 2111300
Email info.newcastle@uk.rhdhv.com
Website www.royalhaskoning.com

2.3.2 Water Framework Directive

The Water Framework Directive (WFD) (2000/60/EC) establishes a legal framework to protect and restore clean water across Europe and to ensure its long term sustainable use.

The following water bodies are present within North Bay (**Figure 4**):

- **river** - the Burniston Beck/ Sea Cut/ Scalby Beck Catch to North Sea water body (**Table 2-2**)
- **coastal** - the Yorkshire North coastal waterbody, extending from Staithes in the north to Flamborough in the south (**Table 2-3**)
- **groundwater** - the Derwent North Yorkshire Moors Ravenscar groundwater body (**Table 2-4**)

Table 2-2 Burniston Beck/ Sea Cut/ Scalby Beck Catch to North Sea Water Body

Parameter	Detail
Overview	
Waterbody ID	GB104027067980 ⁹
Type	River
Hydromorphological designation	Heavily modified
Catchment area	3,212 ha
Length	22 km
Classifications	
Overall waterbody	Moderate (2019)
Ecological	Moderate (2019)
Biological quality elements	Good (2019)
Physico-chemical quality elements	High (2019)
Hydromorphological supporting elements	Supports good (2019)
Supporting elements (surface water)	Moderate (2019)
Specific pollutants	-
Chemical	Fail (2019)
Priority hazardous substances	Fail (2019): <ul style="list-style-type: none"> • Polybrominated diphenyl ethers (PBDE) • Perfluorooctane sulphonate (PFOS) • mercury and its compounds
Priority substances	Good (2019)
Other pollutants	Does not require assessment (2019)

Table 2-3 Yorkshire North Water Body

Parameter	Detail
Overview	
Waterbody ID	GB650401500004 ¹⁰

⁹ <https://environment.data.gov.uk/catchment-planning/WaterBody/GB104027067980>

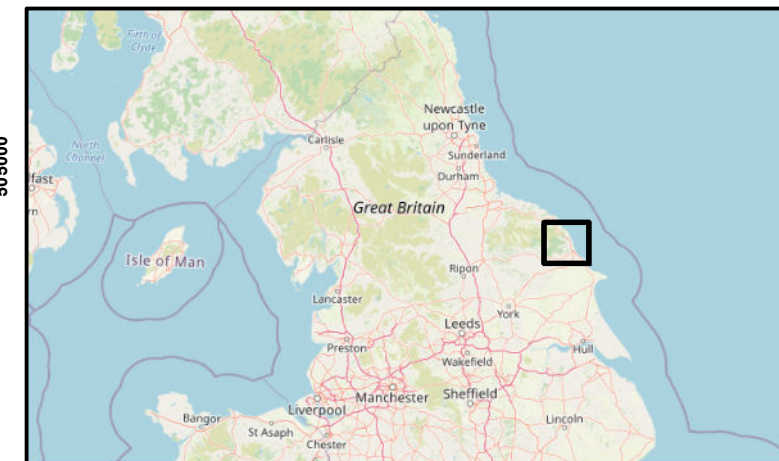
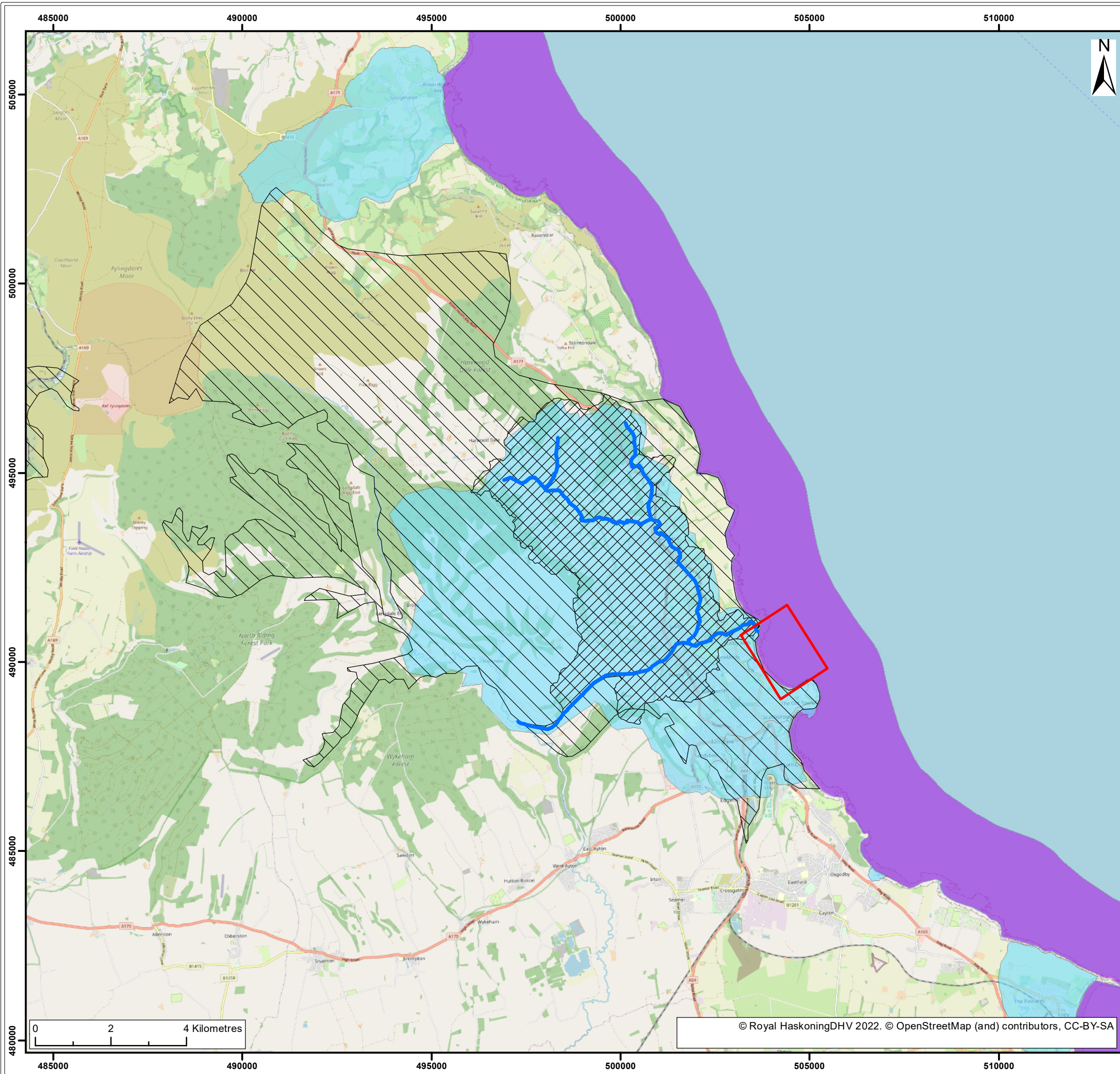
¹⁰ <https://environment.data.gov.uk/catchment-planning/WaterBody/GB650401500004>

Parameter	Detail
Type	Coastal
Hydromorphological designation	Heavily modified
Surface area	180 km ²
Classifications	
Overall waterbody	Moderate (2019)
Ecological	Moderate (2019)
Biological quality elements	Good (2019)
Physico-chemical quality elements	High (2019)
Supporting elements (surface water)	Moderate (2019)
Specific pollutants	High (2019)
Chemical	Fail (2019)
Priority hazardous substances	Fail (2019): <ul style="list-style-type: none"> • PBDE • mercury and its compounds
Priority substances	Good (2019)
Other pollutants	Does not require assessment (2019)

Table 2-4 Derwent North Yorkshire Moors Ravenscar Water Body

Parameter	Detail
Overview	
Waterbody ID	GB40402G700800 ¹¹
Type	Groundwater
Hydromorphological designation	Not applicable
Groundwater area	40,950 ha
Classifications	
Overall waterbody	Poor (2019)
Quantitative	Good (2019)
Quantitative status element	Good (2019)
Chemical	Poor (2019)
Chemical status element	Poor (2019) (chemical drinking water protected area classed as poor)

¹¹ <https://environment.data.gov.uk/catchment-planning/v/c3-draft-plan/WaterBody/GB40402G700800>



- Legend:
- Site Location
 - Burniston Beck / Sea Cut / Scalby Beck Catch to North Sea
 - Derwent North Yorkshire Moors Ravenscar
 - WFD_Coastal_Water_Bodies_Cycle_2
 - Surface Water Catchment Boundary
 - Surface Water Course

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WFD Waterbodies and Bathing Waters

Figure: 4 Drawing No: PB2176-RHD-ZZ-XX-DR-Z-0004

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Royal HaskoningDHV
Enhancing Society Together

Marlborough Crescent,
Marlborough House,
Newcastle upon Tyne, NE1 4EE
Tel +44(0)191 2111300
Email info.newcastle@uk.rhdhv.com
Website www.royalhaskoning.com

2.4 Landscape/ seascape character and visual amenity value

The dominant landscape feature at North Bay is Castle Headland which divides North Bay and South Bay, rising to 78 m Above Ordnance Datum (AOD). From Scalby Ness, where the cliffs rise to approximately 37 m AOD, to the centre of North Bay at Peasholm Gap, the sea frontage is mostly sandy beach, backed mainly by recreational uses, protected by the sea wall (Halcrow, 2008).

Between Peasholm Gap and Castle Headland the sea wall continues along Royal Albert Drive, which fronts a broad sandy beach backed by a cliff which grows in height to become the headland. Rock armour is present in front of the seawall at the very southern end of North Bay. Late 19th century terraced housing, mainly providing holiday accommodation, line the cliff-tops (Halcrow, 2008). The cliff slopes are primarily semi-natural grassland, with footpaths and some recreational facilities.

There are no designated 'Areas of Outstanding Natural Beauty' (AONB) located within or close to the study area.

2.4.1 National Character Areas

Natural England has divided England into 159 'National Character Areas' (NCA) (previously Joint Character Areas), which have similar landscape character at the national scale. North Bay is located within the North Yorkshire Moors and Cleveland Hills NCA (Natural England, 2014)¹². The area is a clearly demarcated block of high land in the north east of Yorkshire and Cleveland. Along the area's southern margin the Tabular Hills dip gently to the south and east but there is still a distinct change in slope where the land drops down to the Vale of Pickering to the southwest of Scarborough.

2.4.2 Seascape character

The closest Heritage Coast to North Bay is the North Yorkshire and Cleveland Coast, which has its southern limit at Scalby Ness. This Heritage Coast is the seaward edge of the North York Moors National Park and consists of high cliffs and headlands cut by bays and woodland (Natural England, 2014).

2.5 Archaeology and cultural heritage

There are no World Heritage Sites located at North Bay or immediately inland.

The principal built heritage feature within the North Bay area is Scarborough Castle which surmounts Castle Headland to the south of North Bay. The castle is a Scheduled Monument and is open to the public (English Heritage 2022)¹³. The ruins and below ground remains of St Mary's medieval church, which are located at the eastern end and beneath the footprint of the present standing church, located to the west of the castle, are also Scheduled Ancient Monument (English Heritage, 2012). There are no protected ship wreck sites within the vicinity of North Bay (**Table 2-5**) (**Figure 2**).

There are a number of listed buildings inland and south of North Bay, many of which border the A165 road.

The southern part of North Bay, from Peasholm Gap southwards, is within the Scarborough Conservation Area¹⁴. Conservation Areas are designated by local Councils for "*areas of special architectural or historic interest, the character or appearance of which is desirable to preserve or enhance*".

¹² <http://publications.naturalengland.org.uk/publication/2646022>

¹³ <https://www.english-heritage.org.uk/visit/places/scarborough-castle/>

¹⁴ <https://www.scarborough.gov.uk/home/planning/conservation/conservation-areas>

Table 2-5 Designated scheduled monuments and registered parks located in close proximity to North Bay

Designated site	Distance/ Direction from North Bay	Reason for designation
Peasholm Park	190 m west	<ul style="list-style-type: none"> Registered parks and gardens (non-statutory)
St Mary's Church	480 m southeast	<ul style="list-style-type: none"> Scheduled monument, also a Grade I listed building
Castle Hill	620 m east southeast	<ul style="list-style-type: none"> Scheduled monument

2.6 Soils and geology

As noted in **Section 2.2**, there are two SSSIs located in close proximity to North Bay (at the northern and southern extents of the bay). These sites have been designated for their geological interest features and are described below (**Table 2-6**)(**Figure 3**).

Table 2-6 SSSIs designated for geological features located in close proximity to North Bay

Designated site	Distance/ Direction from North Bay	Reason for designation
North Bay to South Toll House Cliff SSSI	335 m southeast	<ul style="list-style-type: none"> The site comprises both cliff and foreshore exposures which together demonstrate a remarkably complete succession through the Callovian Stage and the Lower Oxfordian Substage.
Iron Scar and Hundale Point to Scalby Ness SSSI	350 m north northeast	<ul style="list-style-type: none"> The cliffs and intertidal reefs between Iron Scar and Scalby Ness provide an almost complete section through the rocks of the Lower and Middle Jurassic Aalenian, Bajocian and Bathonian Stages and the exposures here are of national importance. In addition important fossil plant localities occur at Cloughton Wyke and Scalby Ness.

2.6.1 Iron Scar and Hundale Point to Scalby Ness SSSI

Iron Scar and Hundale Point to Scalby Ness SSSI is located immediately north of the Sea Life Centre. The cliffs and intertidal reefs between Iron Scar and Scalby Ness provide an almost complete section through the rocks of the Lower and Middle Jurassic Aalenian, Bajocian and Bathonian Stages and the exposures here are of national importance. In addition, important fossil plant localities occur at Cloughton Wyke and Scalby Ness.

This SSSI was classified as being 100% favourable by Natural England's Condition Summary (February 2022)¹⁵. The site is also considered to be of national importance in the Geological Conservation Review due to its Palaeobotanical interest.

2.6.2 North Bay to South Toll House Cliff SSSI

North Bay to South Toll House Cliff SSSI is located around the Holms and along the north side of Castle Headland. The site comprises both cliff and foreshore exposures which together demonstrate a remarkably complete succession through the Callovian Stage and the Lower Oxfordian Substage.

Two of the SSSI units were classified as being 100% favourable by Natural England's Condition Summary (February 2013)¹⁶. However, one unit, the geological cliff exposures (ref. 1012829) was assessed as

¹⁵

<https://designatedsites.naturalengland.org.uk/SiteUnitList.aspx?SiteCode=S1003380&SiteName=iron%20scar&countyCode=&responsiblePerson=&unitId=&SeaArea=&IFCAArea=>

¹⁶

<https://designatedsites.naturalengland.org.uk/SiteUnitList.aspx?SiteCode=S1004394&SiteName=North%20Bay%20to%20South%20Toll%20House%20Cliff%20&countyCode=&responsiblePerson=&unitId=&SeaArea=&IFCAArea=>

unfavourable – declining. The Natural England Designated Site View portal states “*The development of scrub and other vegetation is obscuring geological features and access to them. Work is required to remove scrub in targeted areas.*” It is not known whether such works have been undertaken and the unit returned to a favourable condition.

The site also considered to be of national importance in the Geological Conservation Review for the cliff and foreshore exposures.

3 Environmental Constraints

The following environmental constraints have been identified that could affect the options being considered:

- the coastal waters, foreshore and hinterland are known to be well used by the public for tourism and recreational purposes
- there are two geological SSSIs in the area, located to the north and south of North Bay
- there are three WFD waterbodies that could be affected by the proposed works
- North Bay is a designated bathing beach and currently holds Blue Flag status
- the southern half of the frontage is within the Scarborough Conservation Area
- the rocky intertidal area in front of the Sea Life Centre and around Scalby Ness is known to support overwintering birds

4 Environmental Appraisal of Options

The environmental appraisal of the short listed options identified for the management of coastal defences at North Bay is presented in **Table 4.1**. Potential mitigation measures and enhancement opportunities have also been identified, where considered necessary to reduce the significance of the environmental impact or environmentally enhance the option.

Table 4-1 Environmental appraisal of options

Key positive impacts	Key negative impacts	Mitigation / enhancement opportunity
Option 0 – Do nothing		
Man-made constraints on natural coastal processes would be removed.	The condition of the defences would decline over time and would ultimately fail resulting in the loss of the coastal defences currently protecting the North Bay assets.	None identified.
	Income related to coastal tourist facilities would decline, as the deteriorating state of the existing defences would likely require the enforcement of a reduction in access to the foreshore which currently provides recreational opportunities.	
	Significant impacts upon the existing landscape and seascape. The gradual decline in condition of the defences, and the consequent loss of hinterland infrastructure to the sea, would severely impact upon the value of North Bay as a residential and tourism/ recreational area.	
Option 1 – Phased repair scheme		
Extension to the life of the existing defences, maintaining the status quo for the existing infrastructure at North Bay.	Frequent disturbance to users of the frontage during repairs.	<ul style="list-style-type: none">• Adoption of best practice construction techniques.• Liaison with the local community to raise awareness of the proposed works.• Undertaking the works outside of the key tourism period where possible.• Use of appropriate construction materials.
Minimal, albeit relatively frequent, disturbance to the local community.	Potential risk of wave overtopping remains.	
No change in landscape and visual amenity value.	-	
Option 2 – Full repair scheme		
As Option 1, however the frequency of disturbance would be reduced.	As Option 1, however the frequency of disturbance would be reduced.	-
Option 3 – Capital scheme		
Provision of enhanced protection to the existing assets compared to the present day.	Residual life of the existing defence not extended to the full potential.	Delay the implementation of the capital scheme until the current defences reach the end of their life.
	Noise, vibration and visual disturbance to residential, recreational and commercial users of the frontage during construction.	Use of best practice construction techniques in order to minimise disturbance impacts to receptors.

Key positive impacts	Key negative impacts	Mitigation / enhancement opportunity
	Change in landscape and seascape value.	Incorporation of measures that would enhance the landscape/ seascape value into the design.
	Disturbance to and loss of intertidal and terrestrial habitat.	<ul style="list-style-type: none"> Minimising loss of habitat through design. Incorporating enhancement measures into the design. Offsetting habitat loss to achieve net gain.
	Generation of waste materials, which would need to be appropriately disposed of within a licenced waste management facility if a beneficial use is not available.	Liaison with local contractors to determine whether waste materials could be beneficially re-used on other schemes in the local area.
	Likely requirement for restrictions onto the foreshore and along the coastal path to minimise the risk of health and safety incidents.	<ul style="list-style-type: none"> Implementation of works outside of the peak tourism period where possible. Awareness raising with the local community regarding the possibility of temporarily reduced access to the frontage.
	Disturbance to the local community due to increased traffic and transport on the local road network to transport people and personnel to site.	Implementation of a Traffic Management Plan which would identify suitable mitigation measures to reduce impacts associated with traffic movements.

While the nature of the potential impacts associated with the **Option 1 (Phase repair)** and **Option 2 (Full repair)** are very similar, at a more detailed level, the magnitude of potential impact will vary depending on the scale of the works at each location and the sensitivity of the environment.

Option 0 (Do nothing) has been ruled out on the basis that the existing defences would eventually degrade to the point where they are no longer functioning as a coastal defence asset, putting the infrastructure on the hinterland at risk of erosion and coastal flooding. There would be significant environmental impacts as a result of the defences failing and therefore **Do nothing is not considered to be environmentally acceptable.**

Options 1, 2 and 3 (Capital scheme) do not appear to have any significant environmental impacts that would prevent the proposed work from being implemented. However, it should be noted that **Option 3** would generate a greater number of environmental impacts compared to **Options 1 and 2** as the scale of construction work required for **Option 3** is far greater.

Options 1 and 2 would both extend the life of the existing defences, with relatively minimal impact to the local community and ecological receptors. There would be some disturbance during the repair works, however the environmental impacts arising from such works are considered to be minimal, and best practice measures during construction would likely be sufficient to manage any potential environmental impacts.

Option 3 would result in a greater number of environmental impacts compared to the repair schemes proposed as **Option 1** and **2**. However, a range of mitigation measures could be implemented during the works to manage potential impacts. Whilst **Option 3** would not extend the life of the existing defences to their full potential, it would however provide the opportunity to enhance the level of protection currently afforded to the existing assets at North Bay, as well as providing the opportunity to incorporate environmental enhancement into the design.

5 Environmental Impacts of the Preferred Option

5.1 Coastal processes

The preferred option, **Option 1**, aims to repair the existing defences through re-facing the seawall and replacement of toe protection where required. These works would result in approximately 50 m of toe protection being extended 0.5 m seawards and also approximately 50 m of seawall extending approximately 0.3 m seawards as a result of the resurfacing works. These changes are deemed to be negligible when considering their potential to affect the existing coastal processes.

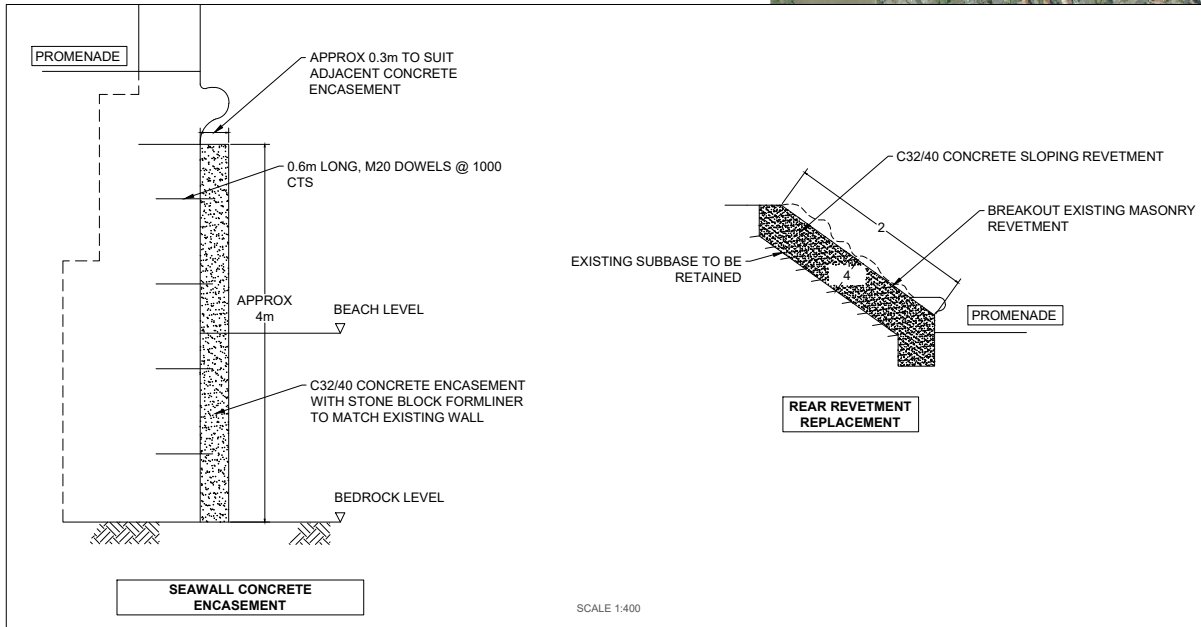
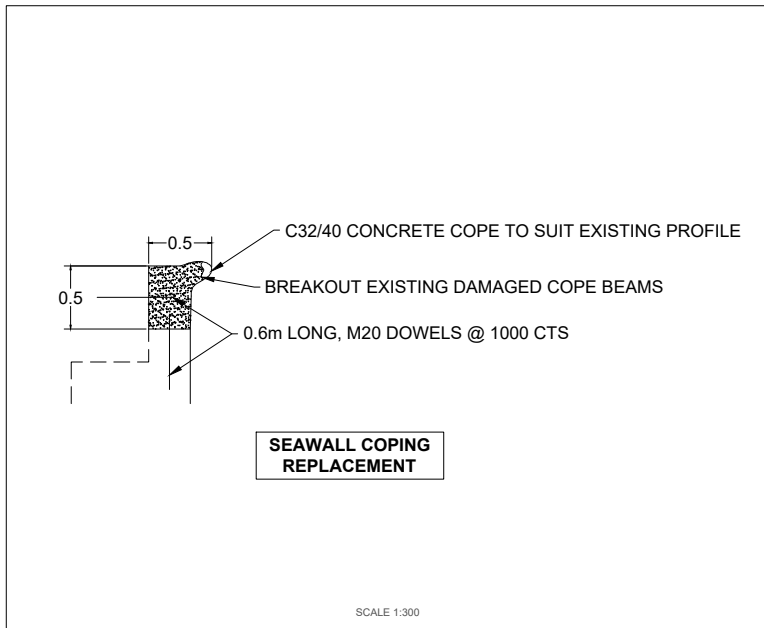
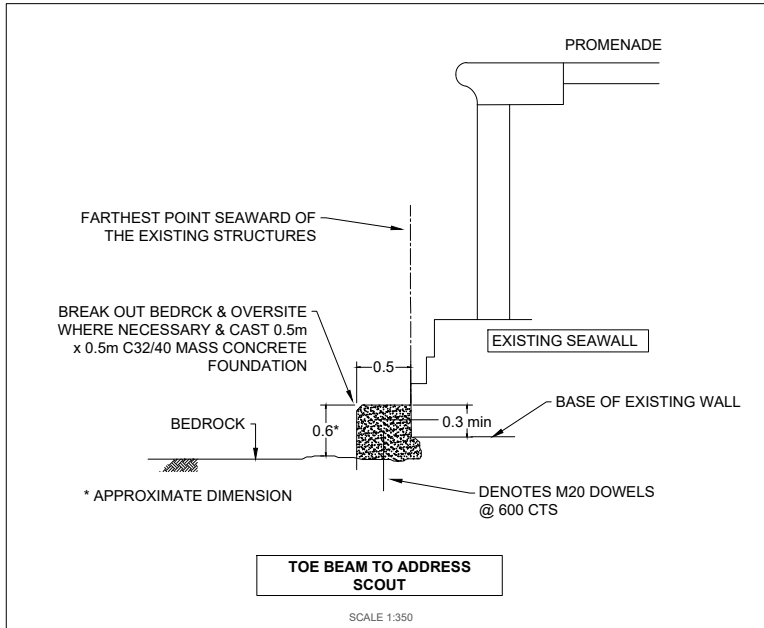
In summary, proposed Phase 2 works involve the following repairs or replacement works (

Figure 5):

- Installation of mass concrete scour protection at locations where undercutting of the wall has occurred due to erosion of the bed rock and/ or lowering of beach levels
- Replacement of eroded masonry sets with new concrete encasement
- Breaking out and replacement of a number of badly damaged promenade slabs and slipway slabs.
- Replacement of several badly damaged seawall copes (recurved)
- Replacement of damaged secondary defence wall

The construction of the proposed works will involve using conventional land-based plant. It is not expected that other materials will be imported to site and no waste materials needing to be re-used, recycled or transported off-site for disposal.

DO NOT SCALE



SITE PLAN
SCALE 1:5000

NOTES

- ALL LEVELS IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN.
- ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- DO NOT SCALE FROM THIS DRAWING.

LEGEND

- LENGTH OF PROPOSED REPAIR WORKS (APPROX)
- AREA OF PROPOSED REPAIR WORKS (APPROX)
- BLUE - PHASE 2
- RED - PHASE 3

FOR APPROVAL

P02	08/06/22	FOR INFORMATION	JR	SB	SB
P01	18/03/22	FOR INFORMATION	DJH	SB	SB
REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

PROJECT
SCARBOROUGH
NORTH BAY REPAIRS



TITLE
NORTH BAY
URGENT WALL IMPROVEMENTS
SITE PLAN



DRAWN	J.R.	CHECKED	S.B.	APPROVED	S.B.
DATE	JUNE 2022	SCALE	AT A1	AS SHOWN	REF: PC2176
DRAWING No.	PC2176-RHD-XX-XX-DR-C-0005	SUITABILITY	S4	REVISION	P02

5.2 Biodiversity, flora and fauna

5.2.1 Habitat loss

The proposed works are not located within designated site for conservation or ecological features, e.g., Ramsar, SPA, SAC, SSSI or nature reserve (**Table 2-1**). Therefore, there would be no loss of designated habitat as a result of the proposed works. It is understood that all of the repair works would be located within a similar 3-dimensional footprint as the existing asset, i.e., some aspects of the repair work extend seaward by up to 0.5 m (**see Section 5.1**).

5.2.2 Damage to habitat during construction

The construction phase of the proposed scheme has the potential to result in temporary disturbance to the sandy intertidal foreshore as a result of vehicle, personnel movements and construction works required to undertake the repair works. However, such habitat is not designated and no permanent impacts on the habitat are predicted. In addition, any disturbance would be temporary given the nature of the localised repair works, with any temporary disturbance reversible quickly on completion.

5.2.3 Noise and visual disturbance to ecological receptors

As noted in **Table 2-1**, there are no designated sites, for conservation/ ecological features, present within North Bay. The closest designated site is the Flamborough and Filey Coast SPA, located approximately 5.5 km to the south (**Figure 3**). Given the distance between the proposed works and the SPA, as well as the very small scale nature of the proposed repair works, it is considered that there is no mechanism to impact on the features of the SPA.

It is understood that the areas of rocky foreshore to the north and south of the bay are utilised by feeding birds. Given the nature of the proposed works, i.e., localised small scale repairs, and that the foreshore is subject to recreational use, it is likely that birds will be accustomed to the presence of people on the foreshore. Therefore, it is considered unlikely that significant disturbance impacts would arise to feeding birds on the areas of rocky foreshore.

5.3 Noise and vibration

There are a number of residential properties within close proximity, approximately 100 m, to the proposed works. The beach area at North Bay is a popular location for walking and various other recreational activities. Although there are no designated sites, for conservation/ ecological features, located within North Bay, it is understood that the areas of rocky shore do provide habitat for feeding birds. There is therefore potential for the proposed scheme to impact upon a variety of human, and ecological, receptors due to noise and vibration disturbance.

In order to limit disturbance, the proposed works should be undertaken outside of the peak tourism period where possible. Information signs will be placed around the site compound providing contact details for any complaints. In addition, a letter drop exercise should be carried out to all affected residents and commercial properties well in advance of the proposed works stating the proposed construction period and providing contact details in case of complaint. Machinery used during the construction phase should be well maintained and switched off when not in use to reduce unnecessary noise.

In order to reduce the potential effects to residential and commercial properties within the area, the proposed working hours will be confirmed with Scarborough Borough Council in advance, recognising the tidal constraints within the works area.

5.4 Geology and soils

As noted in **Table 2-6**, there are two SSSI's which are designated for geological purposes at the northern and southern extents of North Bay. Given the location and nature of the proposed works, there is no potential for direct impacts on these SSSI's. In addition, the proposed works are predicted to have a negligible impact on coastal processes; as a result, it follows that indirect impacts to the SSSI's due to a change in coastal processes would not occur.

5.5 Water

The proposed works have the potential to affect the status of the river (**Table 2-2**) and coastal waterbodies (**Table 2-3**) associated with North Bay through the release of fuels from accidental leaks or spillages. Mitigation measures will be implemented during the construction phase through the implementation of the Construction Environmental Management Plan (CEMP) to reduce the potential for reductions in water quality, including the use of drip trays underneath machinery.

The hydromorphology of the waterbody is considered unlikely to change given that the works are effectively maintaining the present day conditions, with no significant changes to the existing structures.

Given the nature and location of the proposed works, it is considered that there is no mechanism for impacts on the groundwater water body (**Table 2-4**). It is also considered that the works would not influence the bathing water quality at North Bay, due to the controls which would be adopted during construction.

The contractors will adhere to best practice when undertaking the works, for example the Guidance for Pollution Prevention¹⁷, with the aim of maintaining the status of the WFD waterbodies. With such measures in place, no significant impacts are predicted.

5.6 Road traffic

The delivery of equipment and materials to site is anticipated to be by road. It is considered that traffic management systems and consultation with affected parties, including residential and commercial properties, will be required in order to reduce the potential impact on road traffic. The proposed works will be locally advertised with a letter drop to all properties within 500 m of the proposed works. It is also recommended that delivery times could be organised to not coincide with peak traffic periods, such as commuting periods.

5.7 Archaeology and cultural heritage

There are no designated heritage assets located within the proposed working areas at North Bay. There are a number of heritage assets located inland of the defences, as well as to the south (**Table 2-5**). The proposed works will ensure that the life of the existing asset is prolonged, delaying the need for a much larger capital project, which could have greater potential for impact to known and currently unknown heritage assets.

Consultation with SBC's Conservation Officer during 2012, prior to commencement of the previous phase of repair works along the frontage, confirmed that phased repair works would have no adverse impacts on the character or appearance of the Scarborough Conservation Area. As the proposed works are very similar to those previously undertaken within North Bay, it is concluded that the same position would apply with

¹⁷ <https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/guidance-for-pollution-prevention-gpps-full-list/>

regard to impact on the Conservation Area, i.e., no adverse impacts on the character or appearance of the Conservation Area.

5.8 Landscape, seascape and visual amenity value

The proposed works will temporarily affect the local landscape/ seascape character and amenity value through the presence of construction materials, machinery and personnel. In addition to adhering to best practice guidance, the following measures are proposed to minimise any adverse effects:

- locally advertising the proposed works
- conducting the works outside of the peak tourism period (if possible)
- informing local residents of the proposed works

During operation, the proposed works are considered unlikely to significantly impact upon the existing landscape/ seascape as they do not represent a change to the present day management of the frontage.

5.9 Tourism and recreation

The proposed construction works have the potential to effect recreational users of the area through increased noise and vibration, increased traffic, reduced access to the beach and visual impacts. It is likely that temporary access restrictions to areas along the frontage where works will be taking place will be required to prevent public access.

The significance of impacts to tourists and recreational users will be dependent on the proposed construction programme. If the construction works could be undertaken during the winter months rather than during the summer, the impacts to tourists and recreational users would be significantly reduced given the increased visitor numbers during the summer months.

It is envisaged that the majority of the Phase 2 construction works will be undertaken over a 5-month period between May 2023 (mobilisation) and September 2023, contingent on procurement of a suitable Contractor and receipt of the necessary funding. It is likely that the works will pause over the months of July and August to minimise the impact on tourism. The final stage of construction will be completed upon receipt of the MMO licence, in the appropriate months, likely to be April/ May 2024.

The avoidance and mitigation measures proposed for noise and vibration and landscape, seascape and visual amenity value will assist with reducing the significance of impacts to tourism and recreational users. The proposed construction works should also be scheduled around any pre-organised events or festivals along the frontage, where possible. As such the potential adverse effects to tourism and recreation are considered to be minor.

It is considered that the degradation and eventual loss of the existing defences in the absence of the proposed works would result in a significantly greater impact on the tourism and recreational resources than the short term construction phase impacts anticipated to arise from the proposed scheme.

6 Review of Regulatory Requirements

6.1 Marine and Coastal Access Act 2009

Part 4 of the Marine and Coastal Access Act (MCAA) 2009 provides the framework for the current marine licensing system for works below the level of mean high water spring (MHWS) tides. It is understood that the majority of proposed repair works are to be undertaken within a similar 3-dimensional footprint as the existing defences, with works undertaken by the Coastal Protection Authority.

As a result, it is concluded that such works would be classified as maintenance and therefore would not require a marine licence from the MMO, i.e., the works are exempt from requiring a Marine Licence. Where works extend beyond the 3D boundary of the existing defence (**see Section 5.1**), these works would not be classified as maintenance and a marine licence would be required.

6.2 Town and Country Planning Act 1990

The Town and Country Planning Act 1990 is the principle legislation that governs planning permission and planning law in England and Wales. The procedural rules and regulations of this Act are set out in a number of Statutory Instruments (SIs). Consultation with Scarborough Borough Council has confirmed that planning permission is not required for the proposed scheme.

6.3 Wildlife and Countryside Act 1981

Under the terms of Section 28(4)b of the Wildlife And Countryside Act 1981 as amended by Schedule 9 to the Countryside And Rights Of Way Act 2000, any operations within, or adjacent to, a SSSI require a consent from Natural England.

There are no SSSI's within the footprint of the proposed works. However, there are two SSSI's designated for geological features located to the north and south of North Bay. As the proposed works are considered to have a negligible effect on the existing coastal processes, no adverse effects are anticipated to the SSSIs.

6.4 Environmental Permitting

Discussions with the Environment Agency in October 2021 have confirmed that a Flood Risk Activity Permit (FRAP) would not be required for the proposed works.

6.5 Habitats Regulations Assessment

The Conservation of Habitats and Species Regulations 2017 (as amended) (2017 Regulations) transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Nature Directives).

The 2017 Regulations are amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (2019 Regulations), which came into force on 31 December 2020. The 2019 Regulations make relatively minor changes to the 2017 Regulations, mostly involving transferring functions from the European Commission to the appropriate authorities in England and Wales.

One of the changes introduced by the 2019 Regulations is that SACs and SPAs in the UK no longer form part of the EU's Natura 2000 ecological network. Under the 2019 Regulations, a 'National Site Network' has been created both on land and at sea which includes both existing and new SACs and SPAs. Any references to Natura 2000 in the 2017 Regulations and in relevant guidance now refers to the new National

Site Network. Ramsar sites do not form part of the National Site Network but remain protected as per the legislation used to protect both SACs and SPAs.

In accordance with Section 63 of the 2017 Regulations, an Appropriate Assessment is required for any plan or project, not connected with the management of a site within the National Site Network, which is likely to have a significant effect on the site, either alone or in-combination with other plans and projects.

The site of the proposed works does not contain or lie adjacent to an SPA, SAC or Ramsar site; the closest designated site for conservation/ ecology features is 5.5 km to the southeast. Given the distance to the boundary of the Flamborough and Filey SPA, as well as the nature of the proposed works, i.e., small scale maintenance works, it is considered that an Appropriate Assessment would not be required.

6.6 Water Framework Directive

The Water Framework Directive (2000/60/EC) establishes a legal framework to protect and restore clean water across Europe to ensure long-term, sustainable use. It applies to waters extending out to one nautical mile from the baseline from which territorial waters are drawn.

One of the aims of the WFD is to ensure that all European waterbodies are of Good Ecological Status or Potential (for 'heavily modified' and 'artificial' waterbodies) by 2021 by the setting of Environmental Quality Objectives (EQOs) for water chemistry, ecological and hydromorphological quality parameters. The WFD is transposed into law through The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

The proposed works are intended to prolong the life of the existing defences. The eventual loss of the existing defences due to structural deterioration, which would occur under the 'do nothing' option, would likely result in significant impacts to water quality, which may impact upon the current status of the coastal and river water bodies, and the groundwater body at North Bay.

Such impacts would be avoided due to the implementation of the proposed works. Assuming the adoption of suitable mitigation measures during the repair works, the potential for short term environmental impacts from the proposed construction works will be minor and no permanent deterioration in status of anticipated.

6.7 Requirement for Environmental Impact Assessment

The requirement for Environmental Impact Assessment (EIA) is established by the European Directive 85/33/EEC, as amended by 97/11/EC and 2003/35/EC, on the assessment of the effects of certain public and private projects on the environment (the EIA Directive). The EIA Directive, as amended, is implemented via various Regulations, the following of which are applicable to the proposed works.

6.7.1 Marine Works (EIA) Regulations 2007

The proposed works do not fall within the development types listed in Schedule A1 of the Marine Works (Environmental Impact Assessment) Regulations 2007. Hence, there is no mandatory requirement for an EIA.

Schedule 2 of the above Regulations provides a description of development and applicable thresholds and criteria for the purposes of defining 'Schedule 2 development', i.e., projects which MMO should review to consider whether they are likely to have significant impacts on the environment and ultimately whether an EIA is required.

Part 69 of Schedule A2 of the Marine Works (EIA) Regulations 2007 is of some relevance to the proposed works; which states:

“Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works”

The proposed works comprise maintenance of the existing sea defence at North Bay. It is therefore considered that the proposed works would not fall under this particular category of development and there would be no requirement for MMO to screen the works under Part 69. This, in addition to the fact the proposed works are not considered to be located in a sensitive area results in a conclusion that the proposed works would not be classed as Schedule 2 development.

It should also be noted that a Screening Opinion from the MMO was received in 2012 for the previous phase of repairs to the sea defence at North Bay (reference MLP/2012/00022). This confirmed that the previous repairs (comprising seawall refacing, wave return wall coping replacement and toe protection) were not classified as EIA development.

Based on the above, it is considered that an EIA under the Marine Works (Environmental Impact Assessment) Regulations 2007 would not be required.

6.7.2 Town and Country Planning (Environmental Impact Assessment) Regulations 2017

The proposed works do not fall within the development types listed in Schedule 1 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Hence, there is no mandatory requirement for EIA. Schedule 2 of the above Regulations provides a description of development and applicable thresholds and criteria for the purposes of defining ‘Schedule 2 development’, i.e., projects which SBC should review to consider whether they are likely to have significant impacts on the environment and ultimately whether an EIA is required.

Part 10(m) of Schedule 2 is of most relevance to the proposed works; this relates to the following:

“Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works”.

The proposed works comprise maintenance of the existing sea defence at North Bay. It is therefore considered that the proposed works would not fall under this particular category of development and there would be no requirement for SBC to screen the works under Part 10(m). This, in addition to the fact the proposed works are not considered to be located in a sensitive area results in a conclusion that the proposed works would not be classed as Schedule 2 development.

7 References

Defra (2022) Magic Map Application. Available at: <https://magic.defra.gov.uk/> (accessed July 2002)

Environment Agency (2021) WFD Catchment Data Explorer. Available at: <https://environment.data.gov.uk/catchment-planning/> (accessed July 2002)

Environment Agency (2021) Bathing Water Quality. Available at <https://environment.data.gov.uk/bwq/> (accessed July 2002)

North Bay Phase 2, Outline Business Case, Scarborough Borough Council, July 2022

Strategic Environmental Assessment of Scarborough Coastal Defence Strategy Review - Holbeck to Scalby Mills, Environmental Report (ref. CSZNW151), Halcrow, 2008