



Robin Hood's Bay Sea Defence Wall

Water Framework Directive Assessment

July 2014

Scarborough Borough Council

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Scarborough Borough Council

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North

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Acronyms List

CEMP – Construction Environmental Management Plan

CSS - Coastal Strategy Study

FCERM - Flood and Coastal Erosion Risk Management

GES – Good Ecological Status

HRA – Habitats Regulation Assessment

RBMP – River Basin Management Plan

SAC - Special Area of Conservation

SMP2 - Shoreline Management Plan 2

SSSI - Sites of Special Scientific Interest

StAR - Strategy Appraisal Report

WFD – Water Framework Directive

1 Introduction

1.1 Background to the Study

Scarborough Borough Council plans to implement the recommended capital works and coastal management activities arising from the Robin Hood's Bay Coastal Strategy Study (CSS).

A Strategy Appraisal Report (StAR) has been prepared that presents the Flood and Coastal Erosion Risk Management (FCERM) 'business case' for investment in a strategic programme of future capital schemes and coastal management activities between Abbey Cliff and Hundale Point in North Yorkshire. The overall aim is to enable sustainable management of the risks to people and the developed, natural and historic environments from coastal erosion and coastal slope instability over the next 100 years.

The study area boundary of the Robin Hood's Bay CSS follows the areas set out in the North East Shoreline Management Plan 2 (SMP2) and have been referred to in the CSS as Management Areas (MA) 24 (MA24) and 25 (MA25). These MAs are further divided into Policy Units, including Policy Unit 24.1, 25.1 and 25.2.

The key issues identified in the StAR included:

- The coastal erosion and coastal slope instability along undefended sections; and
- The condition of existing coastal defences within the southern section of Robin Hood's Bay village.

The preferred option for Policy Unit 24.1 and 25.1 to address coastal erosion along unprotected sections of the coast is Adaptive Management. This option would allow the coastline to naturally erode landwards. Residential and commercial properties would be abandoned with planning provision for replacement buildings on either the property owner's land or land possibly made available by the North York Moors National Park Authority (Mouchel, 2010a).

The option to address the existing coastal defences in Robin Hood's Bay in MA 25.2 aims to undertake active intervention to sustain/improve the existing defences. If left untouched with no maintenance, these defences would deteriorate in condition over time. Ultimately, the defences would fail and processes of coastal erosion and slope instability would recommence. As a consequence, some 44 properties in this location would become affected by coastal erosion over the next 100 years under a Do Nothing scenario. This WFD assessment focuses on MA25.2 (Robin Hood' Bay) only.

1.2 The Water Framework Directive

The EU Water Framework Directive (WFD) was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The requirements of the Directive need to be considered at all stages of the river and coastal planning and development process. The WFD further requires that Environmental Objectives be set for all surface and ground waters in each EU Member State.

The WFD requires that the current and future status of a water body be considered when all new activities in the water environment are planned. This assessment considers the potential implications of the

preferred strategic options on the hydromorphological, chemical and physio-chemical elements, and the biological quality elements which they support. There is also the requirement to understand reasons for any failure to reach good status/ potential and to ensure that any options do not prevent a water body achieving good status/potential. This would include consideration of mitigation measures identified within the relevant River Basin Management Plan (RBMP) where a water body is artificial or heavily-modified.

Specific measures are set to ensure water bodies achieve their Environmental Objectives. These are listed within the Programme of Measures for each River Basin Management Plan (RBMP). These measures are intended to mitigate past, current and future impacts caused by human activity, such as flood and coastal defence works, with the aim of enhancing and restoring the quality of the existing environment.

In the context of the WFD, the water environment includes rivers, lakes, estuaries, groundwater and coastal waters out to one nautical mile. These are more broadly classified as surface waters (including natural, artificial and heavily modified water bodies) and ground water.

There is a requirement under the WFD to understand reasons for which a water body may fail to reach 'good status', and to ensure that any options do not prevent good status/potential being achieved. For surface waters, good status is a statement of 'overall status', and has an ecological and a chemical component. Good ecological status is measured on the scale high, good, moderate, poor and bad. Chemical status is measured as good or fail. The overall status of the water body will be determined by the component with the lowest status. Therefore to achieve 'good status' overall, a water body must achieve both good ecological and good chemical status.

Some surface water bodies are designated as 'artificial' or 'heavily modified'. This is because they may have been created or modified for a particular use such as water supply, flood protection, navigation or urban infrastructure. By definition, these are not able to achieve natural conditions and, instead, the classification and objectives for these water bodies are measured against 'ecological potential'. Ecological potential is also measured on the scale high, good, moderate, poor and bad. The chemical status of artificial or heavily modified water bodies is measured in the same way as natural surface water bodies.

For groundwater, good status has a quantitative and a chemical component. Together these provide a single final classification: good or poor status. A groundwater body will be classified as having poor quantitative status in the following circumstances:

- Where low groundwater levels are responsible for an adverse impact on rivers and wetlands normally reliant on groundwater;
- Where abstraction of groundwater has led to saline intrusion; and/or
- Where it is possible that the amount of groundwater abstracted will not be replaced each year by rainfall.

Poor chemical status of groundwater bodies occurs if:

- There is widespread diffuse pollution within the groundwater body;
- The quality of the groundwater is having an adverse impact on wetlands or surface waters;
- There is saline intrusion due to over abstraction; or

- The quality of water used for potable supply is deteriorating significantly.

There are other WFD objectives for groundwater quality in addition to meeting good status. These are the requirements to prevent or limit the input of pollutants to groundwater and to implement measures to reverse significant and sustained rising trends in pollutants in groundwater.

The Environmental objectives considered under the WFD are listed in Table 1.1.

Table 1.1: Water Framework Directive Environmental Objectives

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

Source: Water Framework Directive

1.3 Study Objectives

New activities and schemes which could potentially affect water features must be assessed for compliance with the WFD to ensure that they do not cause deterioration or lead to failure of objectives. This report presents the results of the WFD Preliminary Assessment carried out to assess if the proposed option to active intervention on the existing coastal defences at Robin Hood's Bay may impact the WFD objectives for potentially impacted water bodies. Although several options have been considered to undertake the maintenance work, this WFD assessment addresses the final option which is detailed in Section 3 of this report.

This assessment includes the following steps:

- Section 1: Introduction with information on the study background, objectives and methodology;
- Section 2: Baseline information with a description of the study area and water bodies potentially affected by the proposed option;
- Section 3: Option details: description of the proposed works;
- Section 4: WFD Preliminary Assessment; and
- Section 5: Conclusions.

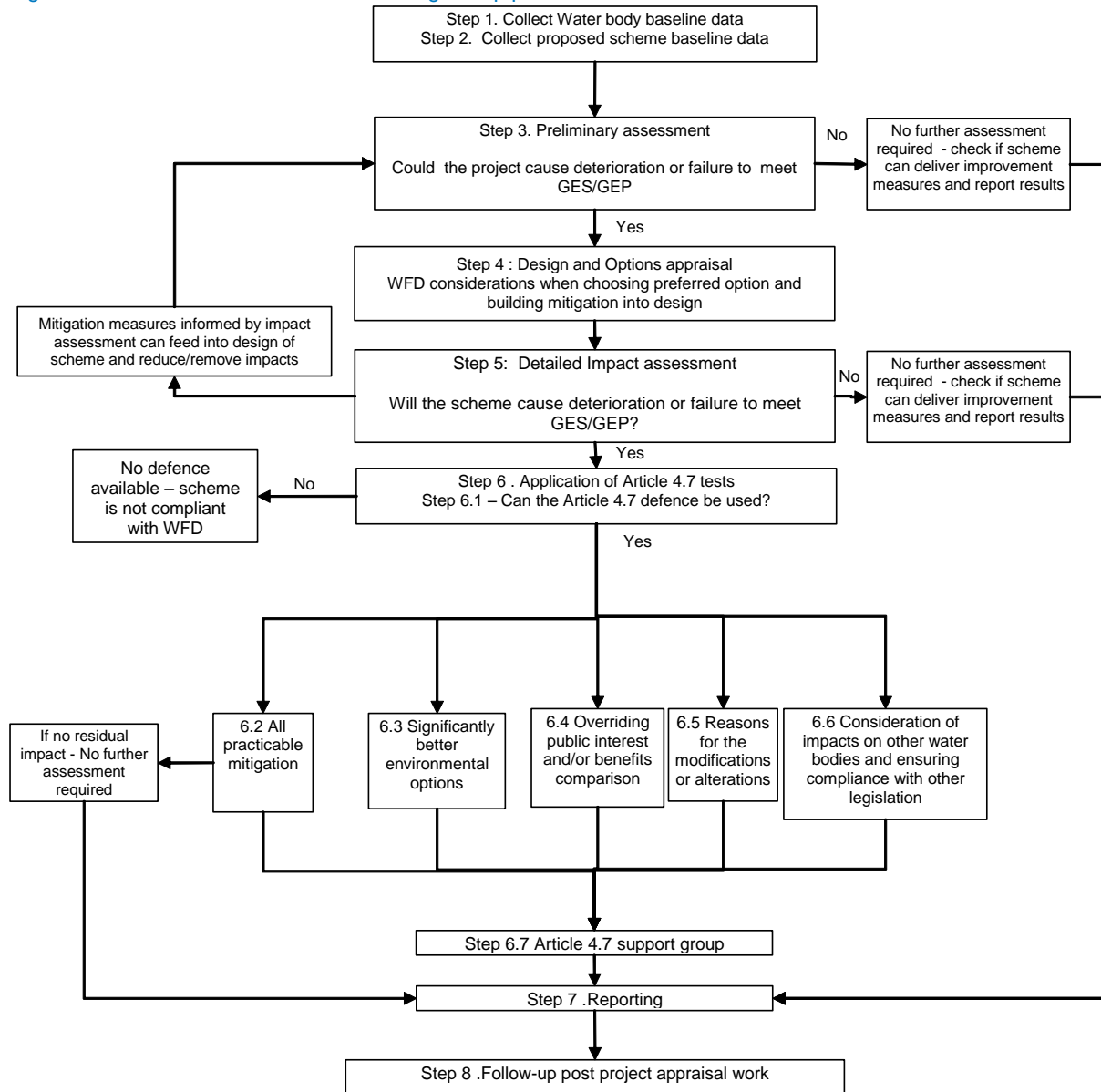
1.4 WFD Assessment Methodology

This assessment considers the preferred option for MU 52.2 along the seawall frontage against the WFD status and objectives for water bodies within this Unit or adjacent to it.

The Environment Agency is the lead authority on the Directive in England and Wales and has produced guidance on assessing impacts of new schemes. This guidance, *Assessing new modifications for compliance with WFD* (EA, 2010), has been followed here.

The Environment Agency's guidance for assessing compliance with WFD describes an eight step process as presented in Figure 1.1. Steps followed in this assessment are described in the following sections.

Figure 1.1: Water Framework Directive eight step process



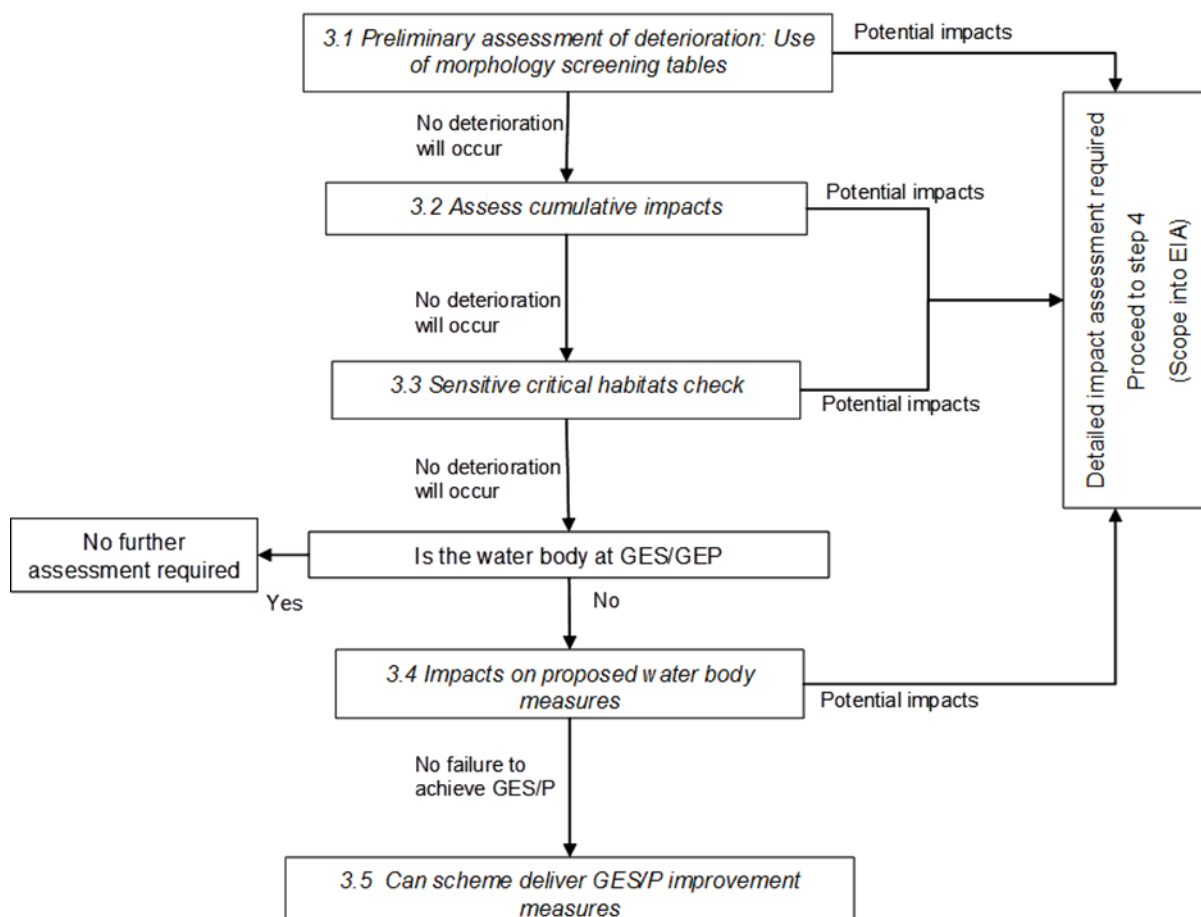
Source: Environment Agency, 2010.

The Preliminary WFD Assessment aims to identify if the proposed option to undertake advanced maintenance on the Robin Hood's Bay seawall could result in an unacceptable impact on WFD objectives.

The assessment tests the option to undertake advanced maintenance of the existing concrete seawall defences against the WFD Objectives for each water body. This step is being done alongside the EIA screening to assess which WFD quality elements need to be scoped into the EIA, if any.

If the option is not likely to result in significant deterioration across any WFD quality elements, and will not prevent achievement of its predicted or potential objectives, then there is no need for further WFD assessment. The preliminary assessment uses Step 3 in the Environment Agency's 8-step guidance on assessing WFD compliance as summarised in Figure 1.2.

Figure 1.2: Preliminary assessment steps



Source: Environment Agency 2010

The following sources were used to inform this assessment:

- River Basin Management Plan (RBMP) Humber River Basin District (Environment Agency, 2009);
- River Basin Management Plan (RBMP) Northumbria River Basin District (Environment Agency, 2009);
- Environment Agency's website: "What's In Your Backyard?";
- Mouchel, 2010a Robin Hood's Bay Coastal Strategy Study. Strategic Environmental Assessment. Produced for Scarborough Borough Council; and
- Mouchel, 2010b Robin Hood's Bay Coastal Strategy Study. Habitats Regulations Assessment: Screening Produced for Scarborough Borough Council;
- Multi Agency Geographic Information for the Countryside (MAGIC) website;
- Natural England website;
- Environment Agency website; and
- Joint Nature Conservation Committee.

2 Study Area Baseline

2.1 Study Area

The study site is located within Robin Hood's Bay, a coastal bay and historic fishing village situated 5 miles south of Whitby and 15 miles north of Scarborough (see Appendix A). The village is a popular tourist destination marking the end of the Coast to Coast walk from West Cumbria to the East coast.

The upper part of Robin Hood's Bay Village sits on the till slopes with a near vertical toe cliff which reduces in height to the south. New Road connects the upper part of the village to the lower village and it runs close to the crest of the regressing till slope.

The densely developed lower village is built on shoulders of land either side of the Kings Beck valley. Within the study area the easterly, seaward facing, shoulder is protected at the coast by a 14m high concrete sea wall (built in 1975), which is showing signs of deterioration, anchored into the cliffs and extending from Ground Wyke Hole to the slipway at the end of the village.

The slipway from the village within the site to the beach is a cobbled access with masonry side walls. The Bay Hotel and the Bay Town Dock are forming the boundary of the site on King Street at the entrance of the slipway. Properties on King Street that overlook the walkway along the North Wall promenade on the cliffs will form the boundary of the site, where access will be gained for repair works to the promenade.

The sea defences along the coastline of Robin Hood's Bay consist of a newly built sea wall with rock armour protection at the toe at the northern point of the bay. An undefended section of shale cliff face forms the transition zone between the newly built sea wall and the concrete wall within the site boundary. The concrete within wall has visually deteriorated and there is evidence of corrosion with associated cracking and rust staining.

The proposed works will cover an area approximately 0.2ha and comprises the footprint of the concrete sea defence wall and associated promenade and a section of the beach required for safe working.

The location of the study area is shown MMD-335681-Env-GIS-00-XX-0001 (Appendix A). The following sections describe the water bodies that may be affected by the proposed works.

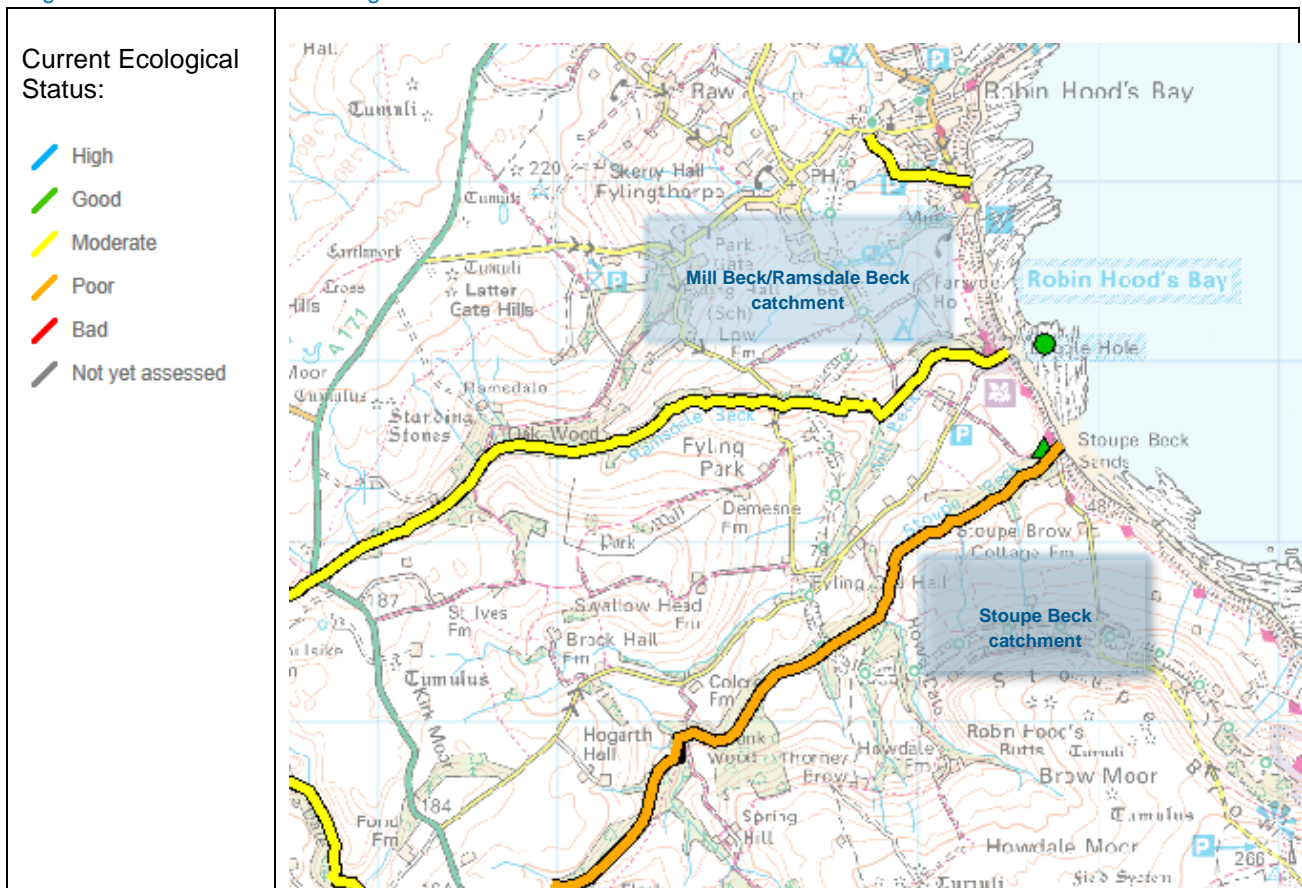
2.2 WFD Water Bodies

The proposed works have the potential to affect four different water bodies:

- Two surface water bodies (rivers)- the Mill Beck/Ramsdale Beck catchment and Stoupe Beck catchment;
- Groundwater – The Esk and Yorkshire Coast Ravenscar; and
- Coastal – Yorkshire North.

The locations of surface water bodies are presented in Figure 2.1.

Figure 2.1: Location and ecological status of the two surface water bodies



Source: Environment Agency website, accessed on the 6 of June 2014.

Within the study area, there are two river water bodies. The current overall ecological status is Moderate (Mill Beck/Ramsdale Beck catchment) and Poor (Stoupe Beck catchment), with an ecological status objective of Good by 2027. It is considered disproportionately expensive and technically infeasible to achieve Good Ecological Status (GES) by 2015; consequently, as required by the WFD, for both water bodies the objectives of achieving GES was set for 2027. Details of the two water bodies are provided in Table 2.1.

Table 2.1: Current status and objectives of the two surface water bodies potentially affected by the proposed option

Information	Stoupe Beck catchment (tributary to the North Sea)	Mill Beck/Ramsdale Beck catchment (tributary to the North Sea)
Water body ID	GB104027068660	GB1040027068670
Current Overall Status	Poor	Moderate
Status Objective (Overall)	Good by 2027	Good by 2027
Ecological Status Objective	Good by 2027	Good by 2027
Chemical Status Objective	-	-

Ecological Status	Good	Moderate (uncertain)
Protected area designation	Freshwater Fish Directive, Habitats Directive, Nitrates Directive.	Bathing Water Directive, Habitats Directive, Freshwater Fish Directive, Nitrates Directive
Hydromorphological designation	Not designated	Not designated
Biological Elements		
Invertebrates	-	-
Macroalgae	-	-
Phytoplankton	-	-
Fish	Poor (very certain)	-
Supporting conditions		
Quantity and dynamics of flow	Supports good	Supports good
Morphology	Supports good	Supports good
Chemical Status	Does not require assessment	Does not require assessment
Mitigation measures	Not addressed	Not addressed

Source: River Basin Management Plan: Northumbria River Basin District (Environment Agency, 2009)

There is one groundwater body in the study area. This is the Esk and Yorkshire Coast Ravenscar. Details are provided in Table 2.2. The current ecological of this water body is Good.

Table 2.2: Current status and objectives of the groundwater body potentially affected by the proposed Option

Information	Esk and Yorkshire Coast Ravenscar
Water body ID	GB40402G702300
Current Overall Status	Good
Status Objective (Overall)	Good by 2015
Quantitative Status Objective	Good by 2015
Chemical Status Objective	Good by 2015
Current Quantitative Status	Good
Current Chemical Status	Good
Saline Intrusion Current Status	Good
Protected Area Designation	Drinking Water Protected Area
Pressures	None mentioned

Source: River Basin Management Plan: Northumbria River Basin District (Environment Agency, 2009)

The study area is within the Yorkshire North coastal water body. The current overall ecological status of this water bodies is Good with some biological and chemical elements achieving High. Details are provided in Table 2.3.

Table 2.3: Current status and objectives of the coastal water body potentially affected by the proposed Option

Information		Yorkshire North
Water body ID		GB650301500003
Current Overall Status		Good
Status Objective (Overall)		Good by 2015
Quantitative Status Objective		Good Ecological Potential by 2015
Chemical Status Objective		Good by 2015
Current Ecological potential		Good
Biological elements	Invertebrates	Good
	Macroalgae	Good
	Phytoplankton	High
Supporting elements	Dissolved Inorganic Nitrogen	Good
	Dissolved Oxygen	High
	Arsenic	High
	Copper	High
	Iron	High
Current Chemical Status		Good
Chemical elements	Cadmium and its compounds	High
	Lead and its compounds	High
	Mercury and its compounds	High
	Nickel and its compounds	High
Protected Area Designation		Drinking Water Protected Area, Habitats Directive, Freshwater Fish Directive.
Pressures		None mentioned

Source: River Basin Management Plan: Northumbria River Basin District (Environment Agency, 2009)

2.3 Planned Measures for Water Body Improvement

Under the River Basin Management Plans for each river basin district, measures are identified and planned which contribute to improvement of the water body. These measures can include actions to be undertaken by the water industry, agriculture, angling and conservation, government bodies or the Environment Agency. The measures aim to address pressures such as nutrients, hazardous substances, physical modification and habitat manipulation. However, no measures have been identified for any of the water bodies which may be affected by the proposed option.

2.4 Designated Sites

Part of the coastline including Robin Hood's Bay is designated as a Site of Special Scientific Interest (SSSI). The section from just south of Robin Hood's village to just north of Hundale Point is designated as a Special Area of Conservation (SAC): Beast Cliff – Whitby (Robin Hood's Bay). The entire MA is designated as Heritage Coast.

2.4.1 Beast Cliff – Whitby (Robin Hood's Bay) SAC

This SAC is designated for “Vegetated sea cliffs of the Atlantic and Baltic coasts”, for which this is considered to be one of the best areas in the United Kingdom. The cliffs suffer from active erosion, in particular in areas of soft clay undergoing a natural cycle of erosion, landslip and colonization. In certain more stable areas parts of the cliff are colonized by scrub and woodland.

Management of these cliffs is difficult due to their unstable nature, but they are sometimes grazed in conjunction with adjacent cliff-top pastures. More southerly sections of cliff are relatively stable, but due to their steep and inaccessible nature are virtually unmanaged. Any intensification in management may influence the vegetation communities present.

Any coast protection proposals may interfere with natural coastal erosion processes. There is a current Shoreline Management Plan for this section of the coast in which the preferred coastal defence option is outlined as 'do nothing', which should contribute to maintaining active coastal processes.

The SAC was considered through the provision of a Habitats Directive Assessment in 2010, the screening assessment of which concluded that:

“There will be no impact on the integrity of the European sites and their conservation objectives due to the distance of the sites from the Management Area”.

(Mouchel, 2010b)

3 The Robin Hood's Bay Concrete Seawall Defence

3.1 Option Details

The option which is being assessed in this report is identified as 'Capital Maintenance'. Cracks and spalled areas of concrete are to be repaired.

The access for the proposed works at the seawall will be from the existing spillway and access to the promenade during construction will also use the existing walkway access.

The works utilities and equipment will be carried from the beach, and it is estimated the working area would extend 10m seaward. A section of the beach (approximately 1000m²) and sections of the promenade will be cordoned off temporarily during the construction phase as safety exclusion zones.

The wall will be monitored on a three yearly cycle to test for potential deformation, indicating failure of ground anchors. Monitoring of the concrete will also be repeated on a three yearly cycle to test for any areas of loose concrete that might pose a safety risk to beach users. It is expected that further maintenance works will be required at 30 year intervals. At these intervals the condition of the wall will be reassessed taking into account the results of monitoring and future techniques and technologies.

A detailed and finalised programme for the proposed development works is not available at this stage in the design process however it is proposed that the works will start in July 2015 and last for approximately 7 months.

A Construction Environmental Management Plan (CEMP), detailing the construction works will be developed, in accordance with best practice guidance including CIRIA C692 guidance- Environmental good practice on site, and the Environment Agency's Pollution Prevention Guidelines: PPG5 - Works and maintenance in or near water. The plan will identify the procedures to be adhered to through the maintenance phases, detailing the specific methods of construction and the mitigation measures to be followed to reduce potential nuisance from the following, for instance:

- Construction traffic
- Safety exclusion zones;
- Changes to access and public rights of way;
- Noise and vibration;
- Dust generation; and
- Waste debris generation

Details will be provided on vehicle types visiting the site; routes to and from the site; the safety of other road users; the frequency of deliveries anticipated at each phase of the proposed development (including those expected of sub-contractors); how materials will be managed and stored, pollution control measures; and if there are to be any off-site compounds.

4 Assessment Results

4.1 Preliminary Assessment

The preliminary assessment takes into account the water quality elements which might be affected by the strategy options. In the current assessment only the option for active management at the seawall in Unit 52.2 is assessed. These take into account the existing conditions within each water body. Where a quality element is not likely to be affected, it can be screened out of any further assessment.

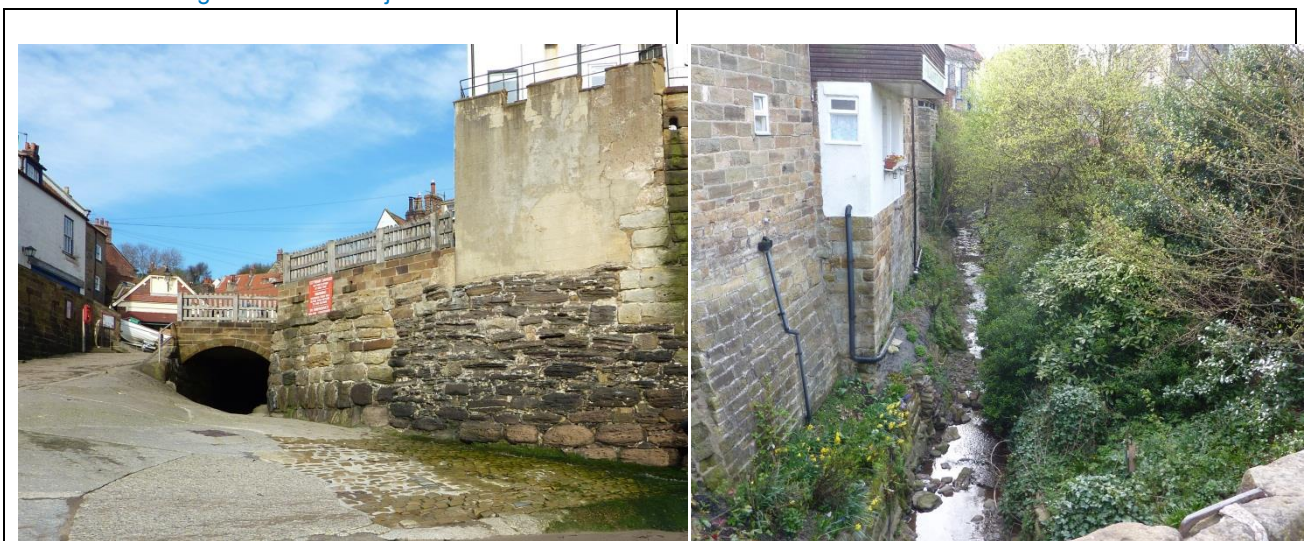
Mill Beck/Ramsdale Beck catchment (GB1040027068670)

The King's Beck (part of the Mill Beck/Ramsdale Beck catchment) discharges within Robin's Hood bay to the south end of the proposed area for works (Photo 4.1). The water body is currently in Moderate Status with an objective to achieve Good Status by 2027. No information or status is provided for each biological element.

The proposed works are localised and planned to be carried out within a short time scale, it is proposed that the work will be finished beginning of 2016. Given that the works will be carried out from the beach it is not envisaged that there will be any impacts likely to affect the Mill Beck/Ramsdale Beck catchment. It is not expected that the methods chosen to undertake the improvements at the seawall will have an effect on the ecological and chemical elements of the water body.

Therefore it is concluded that the proposed option will not prevent achievement of the WFD objectives in this case.

Photo 4.1: King's Beck where it joins the sea



Stoupe Beck catchment (GB104027068660)

This water body is currently in Poor Ecological Status, and the WFD objective for this water body is to achieve Good Ecological Status by 2027. Stoupe Beck is approximately 1.5km south of the proposed area of works. Due to the distance between the site and this water body and the small scale of the proposed works there is no potential for the proposed work to affect this water body.

Therefore it is concluded that the proposed option will not compromise compliance with WFD objectives in this case.

Esk and Yorkshire Coast Ravenscar Groundwater body (GB40402G702300)

This groundwater body is currently in Good Status.

The proposed works will be carried out following best practice guidance including CIRIA C692 guidance- Environmental good practice on site, and the Environment Agency's Pollution Prevention Guidelines: PPG5 - Works and maintenance in or near water. The CEMP will identify and detail the procedures to be adhered to through the maintenance phases, detailing the specific methods of construction and the mitigation measures to be followed to reduce potential effects from any spills that may happen while using different types of machinery. Furthermore the works will be carried out at the beach and therefore the likelihood of saline water transporting any pollutants that will percolate to the aquifer is considered very limited.

It is therefore considered that the works will not affect the Esk and Yorkshire Coast Ravenscar Groundwater Body.

Yorkshire North Coastal Water Body (GB650301500003)

The current status is Good Ecological potential with the objective to remain at Good Ecological Potential by 2015. The scale of the works in light of the coastal water body area is minor and therefore any potential effects on the Yorkshire North Coastal Water Body are considered to be insignificant. Maintenance of the defences at this location means that the contribution of sediments to the coastal water body at this location is reduced but it doesn't constitute a change from current conditions and therefore it is not considered that will results in a deterioration of the ecological potential.

Therefore it is concluded that the proposed option will not result in a deterioration of Good Ecological Potential in this water body.

4.2 Preliminary Assessment of Deterioration - Summary

The methods proposed to deliver the option of maintaining the seawall defences at Robin Hood's Bay are not considered to result in a deterioration of the ecological status or ecological potential of the water bodies within the study area.

4.3 Cumulative Impacts

No other project or plans have been identified that could impact the water bodies in-combination impacts.

4.4 Critical/sensitive Habitats

The section from just south of Robin Hood's village to just north of Hundale Point is designated as a SAC, i.e. the Beast Cliff – Whitby (Robin Hood's Bay) SAC, located south to Robin Hood's Bay and distant approximately 200m at its closest point from the proposed works. The site is designated for "Vegetated sea cliffs of the Atlantic and Baltic coasts". A Habitats Regulations Assessment (HRA) Test of Likely Significance has been undertaken (Mouchel, 2010b) which assessed the potential likely significant effects from the proposed options under the Robin Hood's Bay CSS. It was concluded that the strategy options would not affect the integrity of the European site. The findings of this WFD Assessment are broadly consistent with this conclusion.

4.5 Is the water at Good Ecological Status or Good Ecological Potential?

No pressures or mitigation measures have been identified for any of the water bodies which are not of Good Ecological Status or Good Ecological Potential; therefore an assessment of the effects of the proposed option on improvement measures cannot be undertaken.

5 Conclusions

The proposed option to undertake Advanced Maintenance at Robin Hood's bay seawall are localised and planned to be carried out within a short time scale (to be finished beginning of 2016). Given the small scale of the works it is not envisaged that it will affect significantly any of the water bodies identified within the study area:

- Mill Beck/Ramsdale Beck catchment: It is not expected that the methods chosen to undertake the improvements at the seawall will have an effect on the ecological and chemical elements of the water body and consequently it is not expected that the proposed works will prevent achievement of Good Ecological Status by 2027.
- Stoupe Beck catchment: Due to the distance between the site and this water body and the small scale of the proposed works there is no potential for the proposed works to affect this water body. Therefore it is concluded that the proposed option will not compromise compliance with WFD objective of achieving Good Status by 2027.
- Esk and Yorkshire Coast Ravenscar Groundwater body: The proposed works will be carried out following best practice guidance including CIRIA C692 guidance and the Environment Agency's Pollution Prevention Guidelines. Given that the works will be carried out from the beach, the likelihood that saline water transporting any pollutants will percolate to the aquifer is very limited. It is therefore considered that the proposed works will not affect the Esk and Yorkshire Coast Ravenscar Groundwater Body.
- Yorkshire North Coastal Water Body (GB650301500003): The seawall proposed for maintenance borders this coastal water body. The scale of the works in light of the coastal water body area is minor and therefore any potential effects on the Yorkshire North Coastal Water Body are considered to be insignificant. Maintenance of the defences at this location means that the contribution of sediments to Yorkshire North Coastal Water Body at this location is reduced but it does not constitute a change from current conditions. Therefore it is not considered that the proposed works will result in a deterioration of Good Ecological Potential of the Yorkshire North Coastal Water Body.

An assessment on the potential effects of the proposed option on improvement measures, as set in the WFD objectives for the water bodies, cannot be undertaken as no mitigation measures have been identified for the water bodies. As the proposed option is not expected to cause significant impacts to any of the water bodies that could potentially be affected, no further assessment is required.

References

Environment Agency, 2009. River Basin Management Plan: Northumbria River Basin District.

Environment Agency, 2010. Assessing new modifications for compliance with WFD. Operational instruction 488_10.

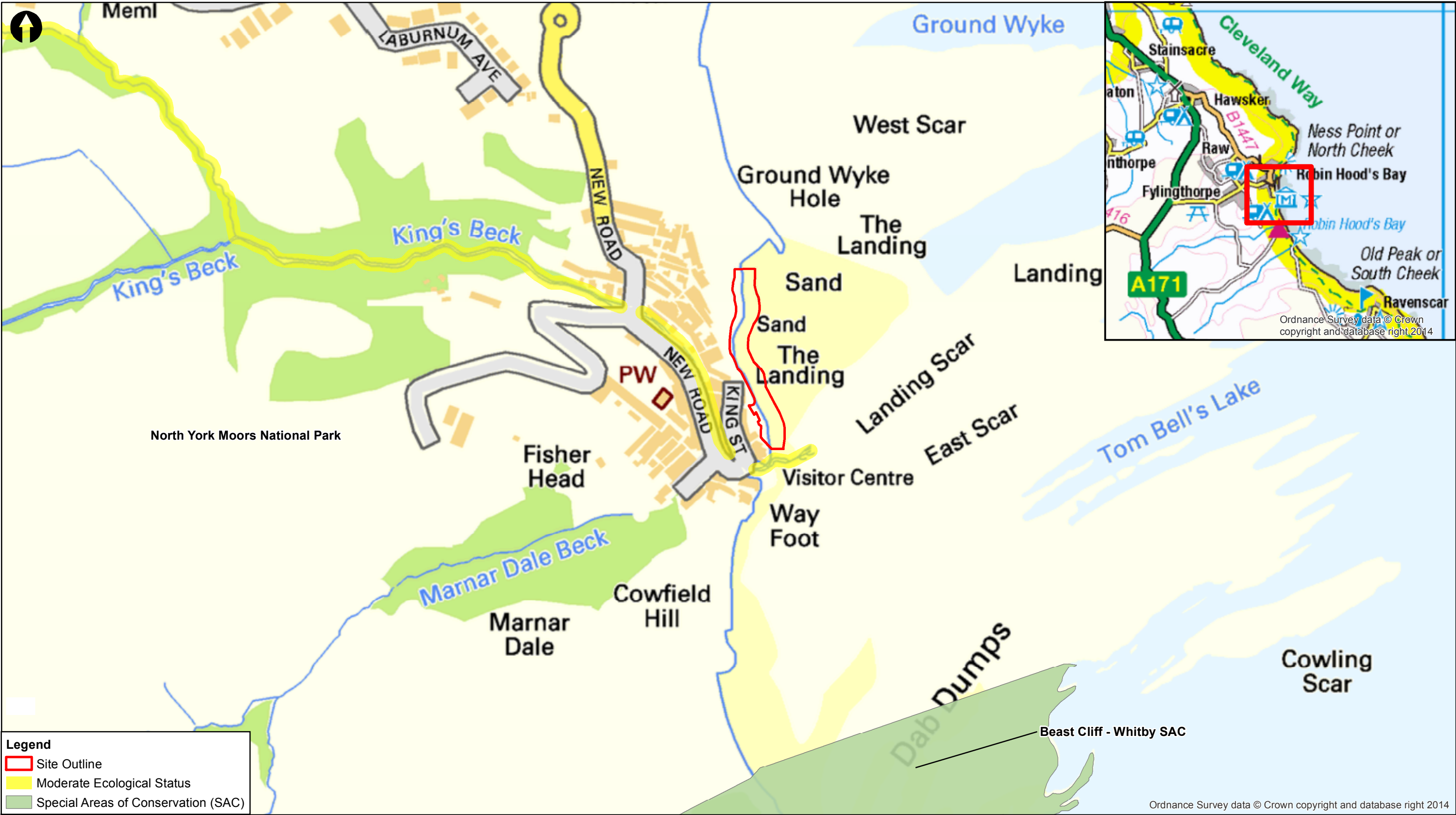
Mouchel, 2010a Robin Hood's Bay Coastal Strategy Study. Strategic Environmental Assessment.
Produced for Scarborough Borough Council.

Mouchel, 2010b Robin Hood's Bay Coastal Strategy Study. Habitats Regulations Assessment: Screening
Produced for Scarborough Borough Council.

Appendices

Appendix A. Site Location	20
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Appendix A. Site Location





Legend

- Site Outline
- Moderate Ecological Status
- Special Areas of Conservation (SAC)

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		01	26/06/14	HDC	For Information	SP	HLB		Checked	SP
									Approved	HLB
		Scale at A3 1:3,000								
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