Runswick Bay Coastal Protection Scheme

Non-Technical Summary - July 2017
Town and Country Planning
(Environmental Impact Assessment)
Regulations 2011
The Marine and Coastal Access Act (MCAA) 2009
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Revision History

<table>
<thead>
<tr>
<th>Revision Ref / Date Issued</th>
<th>Amendments</th>
<th>Issued to</th>
</tr>
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<tr>
<td>03/07/2017 / S1-P02</td>
<td>none</td>
<td>Scarborough Borough Council</td>
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</tbody>
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Contract
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Purpose
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Non-Technical Summary

Purpose
Scarborough Borough Council is promoting the Runswick Bay Coastal Protection Scheme. The proposed Runswick Bay Coastal Protection Scheme is designed to reduce the risk of coastal erosion, deterioration of the sea wall, wave overtopping and flooding to Runswick Bay Village. This Non-Technical Summary is produced to support the Environmental Statement submitted for the Runswick Bay Coastal Protection Scheme. The Environmental Statement has been completed under the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 and The Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2011, which govern the requirement for scope and process of an Environmental Impact Assessment.

Location
Runswick Bay is located along the North Yorkshire coast 5 miles north of Whitby and set within the North Yorkshire Moors National Park (NYMNP). The site forms part of the North Yorkshire and Cleveland Heritage Coast (NY&CHO). The bay is approximately 2 km long and is situated between Clandron Cliff (north) and Keelness (south). Runswick Bay Village is located in the north-western part of the bay, between the Nettledale and Runswick Beck valleys.

Proposed Scheme
The proposed scheme shown in Figure 1 comprises construction of a rock armour fillet (rock armour) in front of the existing sea wall located between the Yorkshire Water pumping station to the south, past the outlet of Runswick Beck and around the sea wall at Caudron Cliff, extending approximately 15 metres north of the sea wall. The total length of the new rock armour is approximately 180m. The proposed rock armour is approximately 2.5 metres high and rises approximately two thirds up the height of the sea wall. The rock armour will be placed with a slope of 1 in 3 towards the beach, creating an overall width at the base of approximately 8 metres. The total footprint of the works is approximately 2600m².

Figure 1: Site location, Runswick Bay
The rock armour is a collection of large boulders placed against the sea wall. The purpose of the boulders is to prevent the sea from eroding the sand from the seawall which may result in damage. The rock armour also means that the waves will break at the toe of the new rocks rather than against the seawall.

The EIA Process
EIA is a tool for identification, examining and assessing the predicted impacts and effects of a proposed development on the environment. The output of an EIA is an Environmental Statement (ES). The ES provides:

- a description of the development, including any alternatives considered;
- a description of the existing environment at the site and the surrounding areas;
- a prediction of the potential impacts on the existing human, physical and natural environment (environmental topic areas) and assessment of subsequent effects;
- a description of the mitigation measures that will be implemented to remove, avoid or reduce predicted effects.

Figure 1: EIA Process
The EIA has been subject to a Screening and Scoping Opinion from the North York Moors National Park Authority in 2015. This process decides if an EIA is required (screening) and then helps to focus the content of the ES on topic areas that are identified as most important (scoping). This will make sure that the mitigation will manage the effects of greatest importance and aim to reduce environment impacts.

Impact assessment
Impact Assessment aims to determine the significance of impacts through a combination of the sensitivity or value of the baseline conditions, as well as the magnitude of the potential impacts. The professional bodies for certain topic areas (e.g. Landscape Institute, Chartered Institute for Ecology and Environmental Management) will have their own assessment guidelines for impact assessment. Impacts and mitigation are described in the following sections.

Determination of significance is shown in Figure 2.
**Alternatives**

Alternatives, or other courses of action, to manage the problem of coastal erosion have been considered. Alternatives have been described in Table 1.

<table>
<thead>
<tr>
<th>Description</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do nothing</td>
<td>Retained - on the basis that it would be a baseline option. However, not considered a viable option as the SMP policy is ‘Hold the Line’.</td>
</tr>
<tr>
<td>Do minimum (repair works to the seawalls)</td>
<td>Retained - on the basis that it would be a minimum baseline. However, not considered an ideal option.</td>
</tr>
<tr>
<td>Rock armour apron to sea wall toe</td>
<td>Retained - on the basis that the option would technically perform well and because there is already existing rock armour within the bay that has been accepted by the village.</td>
</tr>
<tr>
<td>Sea wall buttressing</td>
<td>Discounted - based on adverse impacts on visual amenity.</td>
</tr>
<tr>
<td>Stepped concrete revetment to sea wall</td>
<td>Discounted - it may become slipperly due to attracted algae/bio-fouling; it would form a dominant, stark and severe visual feature; anticipated poor performance due to the prevailing wave climate.</td>
</tr>
<tr>
<td>Rock armour fillet to sea wall</td>
<td>Retained - it will be less intrusive than other options.</td>
</tr>
<tr>
<td>Reduced length rock armour fillet to sea walls with rock groyne</td>
<td>Retained - on the basis that it would provide the same level of protection.</td>
</tr>
<tr>
<td>Shingle recharge</td>
<td>Discounted - on the basis that it is unlikely that the material would stay in place and therefore, require frequent topping up and maintenance.</td>
</tr>
<tr>
<td>Shingle recharge with rock groynes</td>
<td>Discounted - on the basis that the groynes are not a preferred option on amenity beaches and it would require a lot of maintenance.</td>
</tr>
<tr>
<td>Rock berm to protect exposed cliff</td>
<td>Discounted - on the basis that the option would not provide sufficient protection to the village.</td>
</tr>
<tr>
<td>Fishtail groyne and offshore breakwaters</td>
<td>Discounted - due to high cost, health and safety implications, and environmental and aesthetic/landscape/visual amenity impacts.</td>
</tr>
</tbody>
</table>

The preferred option was decided following discussions with the local residents, the wider community, Government bodies including the Marine Management Organisation, Environment Agency and Natural England and the National Park.

**Environmental Effects**

Following scoping the topic areas that are reviewed in the EA are summarised in Table 2.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Reasoning</th>
</tr>
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<tbody>
<tr>
<td>Population and Local Community</td>
<td>The risk of coastal erosion may affect the local population, local amenity and recreation facilities during construction. The tourism industry is a large part of the local economy, and coastal erosion may adversely affect future tourism.</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>The Scheme may affect habitats and associated species by the loss of foreshore habitat or disturbance during construction.</td>
</tr>
<tr>
<td>Landscape, seascape and Visual Amenity</td>
<td>The changed coastline as a result of the Scheme has the potential to affect the landscape, townscape, seascape and visual amenity.</td>
</tr>
<tr>
<td>Cultural, Architectural /</td>
<td>The Village of Runswick Bay has been inhabited since before Roman times.</td>
</tr>
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</table>
The following sections describe the environmental baseline, the predicted effects of the work at Runswick Bay and how the impacts have been reduced through the design and mitigation that will be implemented.

**Population and Local Community**

The village covers an area of approximately 670ha with a population of 2,315. It has a low resident population, with the remainder of the population being made up from tourists and visitors, mainly in the summer months. Tourism is important to the local community, with holiday accommodation comprising caravan and camping sites, bed and breakfasts, hotels, and a number holiday cottages for private rental available in the area. Works will not be undertaken during the summer or holiday periods.

Impacts predicted during the operational phase are beneficial, with a reduction in the risk of loss of 96 properties, reduction in stress levels, community disruption and the protection of livelihoods. The implementation of the scheme secures the economic benefits of recreation to the local community. The following mitigation measures have been considered within the design:

- Public access to beaches has been maintained for residents, leisure pursuits and visitors, the existing steps from the promenade are incorporated in to the design;
- Construction works have been programmed between December 2017 and May 2018, timed to avoid adverse impacts on, local residents, visitor’s amenities, local businesses, and the tourist economy; and
- Close liaison with local residents and businesses to minimise noise disruption from construction activities.

**Biodiversity**

The site lies within North York Moors National Park. Two geological Sites of Special Scientific Interest (SSSIs) (Runswick Bay SSSI and Staithes - Port Mulgrave SSSI) fall within 2km of proposed coastal works. Runswick Bay became a Marine Conservation Zone (MCZ) in January 2016.

Works will be taking place within the MCZ. Intertidal habitats are likely to be temporarily impacted by works during construction. Disturbance will be created because of delivery of the rock by boat, workforce movements across the intertidal zone, temporary storage of the rock on the intertidal area and movement of the rock into place by machinery. Some of the existing rocks along the intertidal areas will need to be relocated to allow for the placing of the new rock armour. The 180m long rock armour fillet will cause the loss of 10-13m of intertidal habitat in front of the existing wall, representing approximately 2600m² in total.

General intertidal zones are shown in Figure 3.
The following mitigation measures will be implemented:

- To minimise impacts on Runswick Bay MCZ during the construction phase of the rock armour, workforce and machinery movements will avoid the ecologically sensitive parts of the beach, with specific care to avoid rockpool biotopes in these zones;
- Boulders moved during construction shall be replaced when works are completed, especially those that are heavily colonised with vegetation / fauna;
- Large, heavily colonised with vegetation / fauna boulders shall be placed within the new rock armour to allow seeding of the new rock armour and to encourage fast colonisation of the new material; and,
- Increasing the textural complexity of the granite blocks by drilling and scraping will also be undertaken to encourage faster colonisation of the new rock armour.

The proposed construction and operational works at Runswick Bay will not have a significant adverse impact upon the sensitive ecology of the site if mitigation is undertaken in line with recommendations detailed in the bullet points.
Environmental Enhancements

Material imported for coastal defence is smooth and lacks the roughness usually present on natural rocky shores that helps colonisation by typical marine organisms. Actions are proposed that will provide better conditions for rapid colonisation. Actions include dressing the rock armour with grooves and drilled holes, Figure 5.

Figure 5: Ecological enhancements

These enhancements will add to the mitigation proposed, including the placing of large heavily colonised boulders within the new rock armour to allow seeding of the new rock armour and to encourage fast colonisation of the new material.

Landscape, seascape and Visual Amenity

The lower village at Runswick Bay is a Conservation Area. There are several listed buildings within the village and public footpaths and rights of way that radiate from the village and shoreline area, including the Cleveland Way. These provide important amenity value and offer access into the surrounding countryside or to the beach. A Landscape and Visual Impact Assessment (LVIA) has been undertaken.

No specific mitigation is proposed for Landscape and Visual amenity over and above programming of the works outside the tourism season, distressing of the rock armour. Over time, this and the general weathering of the boulders should result in a less stark appearance and reduce visual impacts. The coastal protection scheme will protect the listed building and maintain the access of the public footpaths for the future.

In conclusion, the proposals would not significant impact the landscape and visual receptors. Impacts would be very localised and restricted to mainly the footprint of the scheme and certain focused views. In all cases, these localised impacts should be considered against a ‘do nothing’ option, whereby the village and wider character of the bay would be under threat from loss or damage through coastal erosion.

Cultural, Architectural / Archaeological Heritage

There are six Listed Buildings within the study area, all within the village of Runswick Bay. These are all cottages and houses of 18th or 19th-century date, sited within the built fabric at the northern end of the village. Runswick Bay is designated as a Conservation Area. The boundary encompasses the whole of the settlement, and extends into the open space around the village.

There are no Scheduled Monuments within the 1km study area. A further 44 non-designated heritage assets were identified through searches of the North York Moors HER and the Historic England archives. These range from prehistoric cropmark sites to World War II monuments.

The setting of the majority of the listed buildings within the village would be affected only slightly, restricted to impact on the partial views of the buildings as they are seen within the settlement. The setting of two buildings - Thatched Cottage and Chapel Garth - would be affected to a greater degree, as these buildings occupy a more open, prominent location directly above the proposed site of the rock armour. Again, the ability to appreciate their architectural and aesthetic value would not be affected, Figure 6.
In conclusion, the proposals would not cause substantial harm to any known designated or non-designated heritage assets. The National Planning Policy Framework states:

*Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use*

The impact of the impacts on setting should be weighed against the benefits of the proposed scheme in preventing coastal erosion of the village, which would in turn cause much more harm to the settlement.

**Water Resources**

Construction works generally pose a risk to the water environment through excavation, fabrication of laying of concrete and storage of materials:

- pollution from poor/inappropriate management of ballast water and/or fuels from barge vessels;
- import of marine non-native invasive species;
- exposure of bare ground, earth movement, stockpiling material, mobilising of sediment into surface water receptors through runoff from the site especially during the delivery and movement of material;
- wheel washing run-off, or muddy run-off from construction access tracks within the site;
- pollution due to vandalism of stores or plant, poor/inappropriate storage of materials and chemicals/fuels and wastes such as on permeable surfaces, adjacent to watercourses or without sufficient bunding capacity; and
- accidental spillages of fuels and polluting materials such as concrete.

The following mitigation measures are to be incorporated into the construction method and operation of the site:

- All work shall be undertaken in accordance with CIRIA Coastal and Marine Environmental Management Site Guide (CIRIA, 2003). The adoption of good practice means that all possible measures to limit the significance of a pollution incident will be implemented. With adherence to the above mitigation, there would be a residual impact of negligible significance on the surrounding environment.
- The contractor shall produce a site Bio-security Risk Assessment considering the source of the rock and the method of delivery. Bio-security aspects shall be incorporated into the site induction process and site procedures.
Soils and Geology
Detailed Site Investigation works have been undertaken to support the design. To minimise the risk of disturbance to the existing sea walls and the unstable ground beyond, it is recommended that the excavation of the trench and subsequent construction of the revetment should be carried out in short bays of between 5-10m in length (parallel to existing concrete wall), with a suggested length of 8m.

Construction Activities
Construction activities will be implemented through an agreed Construction Environmental Management Plan (CEMP). The CEMP will describe specific actions to manage construction related impacts. These shall include:

- The plant and equipment shall be selected to minimise noise where practical and given technical specifications. Construction will not start work until 7:30am and cease no later than 5:30pm. Vibration will be minimal as no major demolition works. Any demolition involving pneumatic hammers will be programmed sympathetically during the day, any significant noise and vibrations will be communicated to the surrounding properties.
- Traffic Management will be controlled on the outside of the site by a traffic management scheme and site access signs. Traffic Management Signage, Barriers, Cones and fencing will be used to segregate & direct site vehicles, public & customer vehicles and pedestrian access. Rock armour shall be delivered by barge during high-tide and stored for placement during low-tide.
- Care will be taken to avoid fuel spillages and in to avoid contamination of the drainage network and watercourses. Bonded fuel storage tanks will be used. Plant will be fitted with bio-degradable hydraulic oil. Spill kits and booms will be kept on site at all times close to the potential source of contamination.
- The public and local community will be made aware of our activities via Scheme sign board with updates on progress posted on a website, and businesses affected will be informed by a letter drop. Any changes to the programme or activities will be updated via communication systems above.

Cumulative Impacts
A qualitative cumulative effects assessment has been undertaken which considers the impacts from the proposed scheme with other proposed projects in the study area and the interaction of the topic areas. Yorkshire Water Services has undertaken improvement works to the existing sewer pipe running along Runswick Bay village. These involved the construction of a c.115 m long sewer pipe and two manholes. These works have been completed in advance of the proposed new rock armour. The new sewer boxing will be covered by the rock armour. Post construction there is anticipated to be no impact.

The scheme design has considered the interaction of ecology, landscape and cultural heritage of Runswick Bay.
For more information about the Scheme please contact:

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