



**Cell 1 Regional Coastal Monitoring Programme
Post Storm Walkover Inspection Surveys 2023
(Hartlepool Headland)**

Hartlepool Borough Council

Post Storm Walkover Inspection Surveys 2023

Contents Amendment Record

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¹ Scarborough Borough Council is acting as client on behalf of all Local Authorities within 'Coastal Cell 1'.

Preamble

The Cell 1 Regional Coastal Monitoring Programme covers approximately 300km of the north east coastline, from the Scottish Border (just south of St. Abb's Head) to Flamborough Head in East Yorkshire. This coastline is often referred to as 'Coastal Sediment Cell 1' in England and Wales (Figure 0-1). Within this frontage the coastal landforms vary considerably, comprising low-lying tidal flats with fringing salt marshes, hard rock cliffs that are mantled with glacial till to varying thicknesses, softer rock cliffs, and extensive landslide complexes.

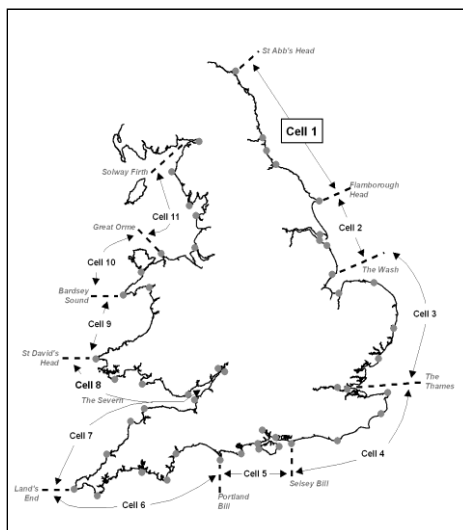


Figure 0-1 - Sediment Cells in England and Wales

The programme commenced in its present guise in September 2008² and is managed by Scarborough Borough Council on behalf of the North East Coastal Observatory. It is funded by the Environment Agency, working in partnership with the following organisations:



² Prior to 2008, coastal monitoring was undertaken on a consistent basis across Northumberland and North Tyneside as part of the (then) Northumbrian Coastal Authorities Group's monitoring programme which commenced in 2002, whilst several authorities between the River Tyne and Flamborough Head undertook their own local monitoring programmes.

Royal HaskoningDHV has been appointed to provide Analytical Services in relation to the present phase of the Cell 1 Regional Coastal Monitoring Programme, between 2016 - 2027.

The main elements of the Cell 1 Regional Coastal Monitoring Programme involve:

- beach profile surveys
- topographic surveys
- cliff top recession surveys
- real-time wave data collection
- bathymetric and sea bed characterisation surveys
- aerial photography
- walkover inspection surveys

During late October / early November 2023, the UK was subject to a period of stormy weather where three named storms occurred within a 4-week period (Figure 2). To assess the impact of these storms on the coastline, the client commissioned a series of targeted **Post Storm Walkover Inspections** as part of the Cell 1 Regional Coastal Monitoring Programme. The report presents one of the Post Storm Walkover Inspection surveys undertaken.

Name	Date named	Date of impact on UK and/or Ireland and/or Netherlands
Agnes	25 September 2023	27 - 28 September 2023
Babet	16 October 2023	18 - 21 October 2023
Ciarán	29 October 2023	1 - 2 November 2023
Debi	12 November 2023	

Figure 2 UK Named storms 2023 ([UK Storm Centre - Met Office](#))

1. Introduction

1.1 Study Area

Hartlepool Borough Council's frontage is approximately 12.5km in length, extending from Crimdon Beck in the north to the North Gare Breakwater at the mouth of the Tees estuary in the south, shown in **Figure 1-1**. It comprises natural dunes, towns defended by sea walls and revetments, and key maritime structures such as port and harbour breakwaters. The quay walls within Victoria Harbour and Hartlepool Marina were not inspected as they are not classified as coastal defence assets and they are located within privately owned areas. The frontage includes approximately 40 coastal assets, 37 of which are man-made assets while 3 are natural assets. Detailed maps showing the location of each of these assets are presented in **Appendix A**.

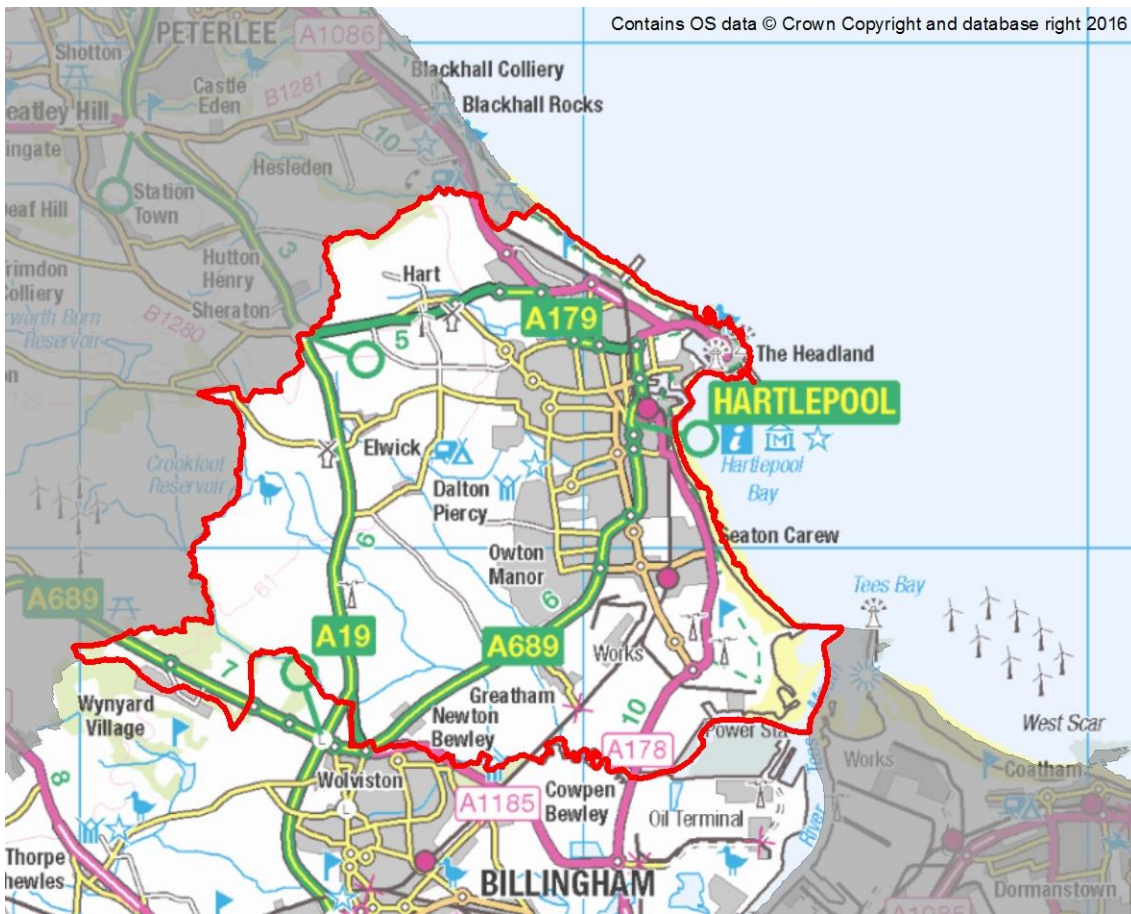


Figure 1-1: Hartlepool Borough Council study area

1.2 Methodology

This section presents the approach taken by the asset inspectors for the Hartlepool Headland section of the Hartlepool Borough Council coastal frontage.

The walkover inspection survey for the Hartlepool Headland section of the Hartlepool Borough Council frontage was undertaken on 29th November 2023. The weather experienced during the inspections was clear and dry and there were no access or visibility problems.

The frontage has been split into a number of 'asset lengths' (Appendix A), as defined in the National Flood and Coastal Defence Database (NFCDD) that was established by the Environment Agency.

The walkover inspections cover both built defence assets and natural defence assets such as cliffs, slopes and dunes. All assets were visually inspected, photographed and graded based on their condition and an estimate made of their residual life.

For built assets the grading classification was undertaken in accordance with the Condition Assessment Manual (EA, 2012), with estimates made of the urgency of any necessary repairs. An extract of the grading classification for built assets is presented in **Table 1-1**. For ease of reference the built asset photographs presented in this report have also been bordered with the colours key indicated below.

Grade	Rating	Description
1	Very Good	'As built' condition or cosmetic defects that have no effect on performance.
2	Good	Minor defects that will not reduce overall performance of the asset.
3	Fair	Defects that could reduce overall performance of the asset.
4	Poor	Defects that would significantly reduce overall performance of the asset.
5	Very Poor	Severe defects resulting in overall performance failure of the asset.

Table 1-1: Condition assessment grading for man-made assets.

In addition to the above grading classification, for natural assets such as cliffs and slopes the same five point activity scale used in previous walkover inspections within Cell 1 was used. This grading classification is presented in **Table 1-2**. For ease of reference the natural asset photographs presented in this report have also been bordered with the colours key indicated below.

Grade	Class	Description
1	Dormant	Features with no interaction with marine processes.
2	Inactive	Features with no visible evidence of erosion or landsliding activity.
3	Locally active	Features with localised evidence of small erosion or landsliding activity.
4	Partly active	Features with widespread evidence of small erosion or landsliding activity or areas of intense erosion or landsliding.
5	Totally active	Features with large-scale or intense erosion or landsliding.

Table 1-2: Condition assessment grading used for natural assets (cliffs/ slopes).

This report provides an overview of the findings from the walkover inspections, summarising each locality in general but also specifically identifying individual assets in 'poor' or 'very poor' condition. It is anticipated that this summary will help identify areas for maintenance or capital investment. Full details of the inspection of each asset are provided in **Appendix B**.

In addition to this report, full details of the inspection and a selection of appropriate photographs have been entered into the SANDS (Shoreline And Nearshore Database System) database and provided along with this report with SANDS viewer software.

2. Overview

The walkover inspection identified limited changes in the condition of the built and natural defence assets along the Hartlepool frontage since the previous formal inspections in Summer 2020. A summary of the main differences is provided below;

- **Marine Drive and Hartlepool Headland** – The works to the seawall around the headland are in fair to poor condition. There are a number of defects including; missing, displaced and damaged coping stones, missing joint sealant, missing and damaged handrailing and damage to access steps. A project to rejuvenate the Elephant Rock amphitheatre, located on the lower promenade and forming a secondary defence remains in as-built condition.
- **Old Pier (Pilot pier)** - Cracking between the deck and parapet wall on the Old Pier roundhead does not appear to have worsened since 2022.
- **Town Wall** – The masonry wall is in fair condition. Repointing undertaken prior to 2022 appeared in good condition. A significant defect reported in 2022 had been repaired. However, a more significant defect was noted in the same abutment (the easternmost) but on the opposing edge. There were a large number of blocks missing props were in use to support the blockwork above. The works to the rear of the historic wall were in good condition.

3. Condition Assessment

3.1.1 Marine Drive and Hartlepool Headland

In 2019, the construction works to the Hartlepool Headland seawall were completed. The works, ranging from the Heugh Breakwater in the south through to Thorpe Street beach access ramp in the north (401C03 to the southern section of 303C01), consisted of the encasement of the original seawall with pre-cast concrete units, including new coping units. The wall to the south is also fronted by a shallow profiled, rock armour revetment.

The 2022 inspection reported that “the structure generally remained in ‘as built’ condition with the exception of the sealant which, as reported in 2020, is being washed out from between the precast units and precast copestones”.

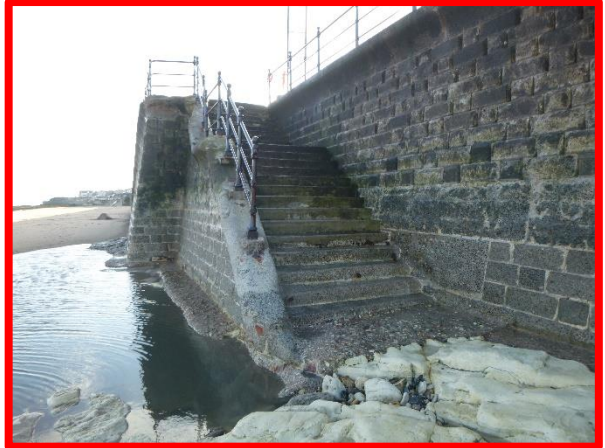
Following the post-storm inspection in 2023, the structure has been downgraded from very good condition to fair condition due to the presence of defects which could reduce the overall performance of the asset. Some sections of the structure, most notably the area around Corporation Road could be classed as poor condition due to the presence of defects which would significantly reduce the overall performance of the asset. There are six major defect types identified below;

1. **missing coping stones:** there are approximately 11 coping stones which have been completely lost from the wall and slipways. It is believed these have been intentionally pulled from the wall to reduce the risk of them falling uncontrolled.
2. **evidence of movement in coping stones:** in addition to the missing coping stones, there is approximately 50m length of coping stones, spread across four sections, where there is significant lateral movement in the coping stones where there is a risk that these will fall. The amount of movement within the coping stones indicates that the ties which hold the stones in place are insufficient and have likely severed along some of this length.
3. **Damage to coping stones:** there is localised evidence of damage to the face of the coping stone, notably the L-shaped lip, which hold the coping stone in place.
4. **missing sections of hand rail:** there are several sections of handrailing which is missing or damaged. This principally seems to be driven by loss or movement in the coping stones. However, there are some sections on the lower reaches of the slipways where the coping is not damaged and the handrail has been damaged due to wave impacts.
5. **missing flexible joint sealant:** as reported in the 2022 inspection report, it is estimated that approximately half of the flexible joint sealant is missing from the wall. Joint sealant was found to missing between facing panels and between coping stones. Most critically it was found to be missing between every single coping stone on the apex of the headland at Moor Parade. This is significant because the gap between each coping stone is splayed out in a seaward facing direction due to the curvature of the wall.
6. **damage to access steps:** a set of access steps located east of Town Moor have been badly damaged and have now failed, with one of the panels having been displaced.

The approximately 200m of seawall north of Thorpe Street that was not included in the recent works, remains in fair condition overall, dropping to poor and very poor in places. The lower courses of the masonry wall are heavily abraded along the frontage. The access ramp and steps adjacent to Thorpe Street are in particular poor condition with significant damage to the cope stones and handrails noted locally. A short (approximately 30m) length of rock armour remains towards the northern end of the wall.



Historic repair to access ramp coping stone in fair condition (/C0303C01)



Local damage to coping/handrails at Thorpe Street access steps (/C0303C01)



Rock armour in fair condition (/C0303C01)



Evidence of abrasion to wall (/C0303C01)

The photos below show examples of each of the six major defects identified on the new headland wall.



Missing coping stones (/C0303C01)



Evidence of movement of coping stones (/C0303C02)



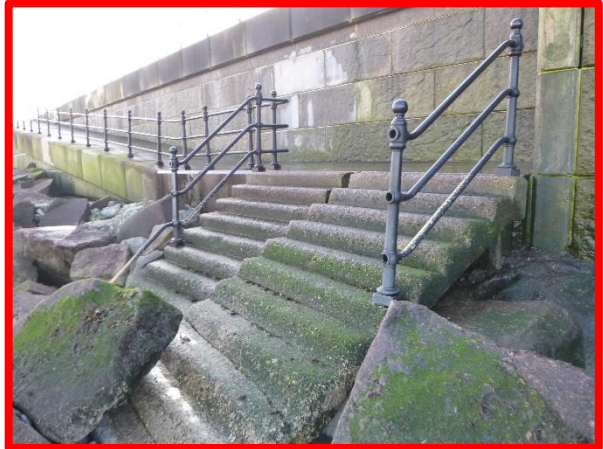
Damage to coping stones (/C0303C02)



Missing section of handrail (/C0303C04)



Missing flexible joint sealant (/C0303C02)



Damage to access steps (/C0303C02)

There are also a number of other more minor defects noted along the length of the new wall, including undercutting of wall toe and open joints. The rock armour revetment has poor interlock and a shallow profile. There is evidence of rock movement particularly around the failed access steps.



Outflanked toe feature (/C0303C01)



Exposed toe of wall (/C0303C01)



Shallow profile rock armour but shows good interlock (/C0303C02)



Extensive evidence of rock movement notably around failed access steps. (/C0303C04)

Due to the significance of the defects and the fact that there is evidence of them occurring along this full frontage, it is recommended that a thorough design review is undertaken. A strategy for addressing existing defects is urgently required, and this should also be extended to identify an approach for reducing the risk of future defects occurring, which may involve capital works. In particular this should focus on addressing issues with the coping stone connection detail.

In 2021 a project to rejuvenate the Elephant Rock amphitheater, located on the lower promenade and forming a secondary defence, was complete. It remains in as built condition.



Elephant Rock – Outdoor Event Area (/C0303C02)



Elephant Rock – Outdoor Event Area (/C0303C02)

3.1.2 Heugh Breakwater

The privately owned Heugh Breakwater is not accessible to the public beyond halfway along its length, enforced with fencing and signage present. It is understood the seaward end of this structure, past the fencing, has been in failing condition for many years, thought to be as a result of differential settlement from varying founding material. The landward section of the structure generally appeared to be in fair condition when inspected from the foreshore. Some cracking/abrasion was observed in the deck slab and parapet wall. The handrails were also experiencing minor corrosion. Numerous previous repairs were visible on the deck of the structure. No notable change in the 2023 post-storm inspections.



Spalling of concrete (/C0401C01)



Cracking to the deck slab (/C0401C01)



Northern aspect of the Heugh Breakwater (/C0401C01)



Southern aspect of the Heugh Breakwater (/C0401C01)

3.2 Heugh Breakwater to Little Scar (MA12)

3.2.1 Block Sands

Block Sands, located between Heugh Breakwater and Pilot Pier, is backed by a tiered defence formed of concrete recurve wall between beach and lower prom and a vertical masonry wall between lower and upper prom.

The concrete recurve wall is generally in fair to poor condition. Local cracking and spalling were observed to the face and recurve cope along extensive sections of the wall. Minor undercutting and voiding were also observed locally. The rear masonry wall was generally in fair condition throughout, with voids/loss of mortar observed locally, and several areas where historic repairs have taken place.

Numerous outfalls are present at the interface between assets /C0401C04 and /C0401C05. It was noted of the five outfalls, three have no protection, one has a WaStop non-return valve which appeared in working condition and the final outfall has a failed flap valve. It is recommended that the protection to these outfalls is reviewed, and the flap valve replaced if necessary.



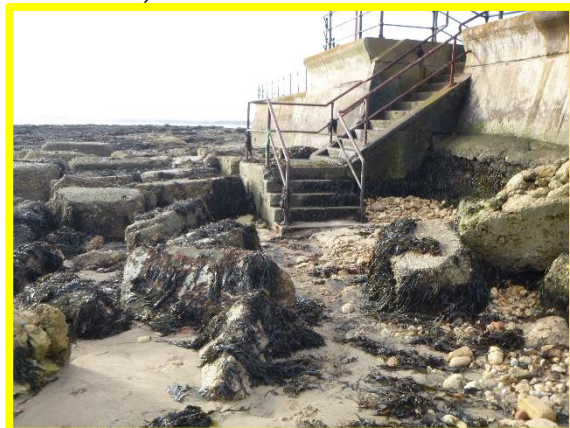
Healthy beach levels at Block Sands adjacent to Heugh Breakwater (/C0401C03)



Rear masonry wall in fair to good condition (/C0401C03)



Damaged cope around handrailing fixing (/C0401C04)



Access steps in fair condition (/C0401C04)

A steep, cobble beach with good vegetation cover is present where the seawall is offered protection by the rocky outcrop. Minor cliffing to the vegetation shelf was previously reported, however continued vegetation growth has continued seaward of this erosion line.

Cracks were observed in the masonry wall and access steps above the historic public conveniences, but these defects have not deteriorated since 2018.

At the interface with the Old Pier the wall had sustained damage to the concrete recurve. A large crack extended the full height of the wall, potentially suggesting a global movement of the structure; however, no distress was evident in the promenade immediately above this section of wall. Undercutting was identified at the interface with Old Pier in 2016, however has not been visible since due to high beach levels. This location should be monitored with consideration given to infilling/repairing the existing undercutting/voids. There was no notable change to the condition of the wall during the autumn 2023 post-storm inspections/



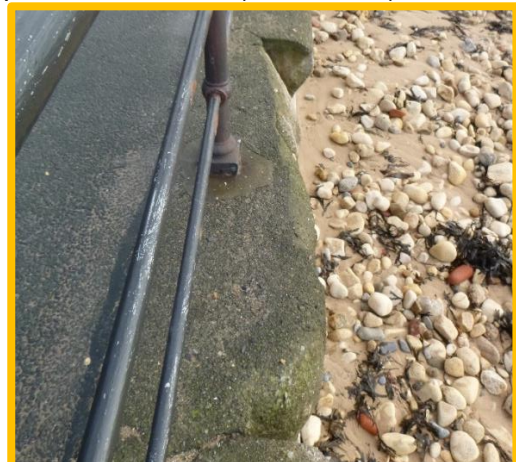
Damaged recurve cope (/C0401C05)



Steps in fair condition (/C0401C05)



Steep pebble beach fronting vegetated area (/C0401C05)



Historic damage to coping stone (/C0401C05)

3.2.2 Old Pier (Pilot Pier)

The masonry and concrete structure generally appeared to be in fair condition. The Accropode armour units at the head of the structure appeared to maintain a good profile. Some larger voids were noted suggesting potential displaced units.

As recorded in previous inspections, an approximately 30m crack is present between the concrete parapet wall and main slab around the roundhead. This cracking may indicate settlement of the structure or seaward rotation of the parapet rather than local damage. These defects have been present since the 2014 survey, although appear to have worsened since the previous inspection. It was noted in the 2018 inspection that strain gauges were installed on the lighthouse structure which suggests monitoring of the structure is ongoing.

The inner face of the structure (Pilot Pier) generally appears in fair condition with some abrasion noted to the masonry blocks. Significant vegetation growth may be concealing more defects. Local bulging of the wall has been reported previously but does appear to have worsened since the previous inspection. There was no notable change in the autumn 2023 post-storm inspection.



*Southern aspect of the Old Pier (Pilot Pier)
(/C0401C34)*



*Inner face of North Pier – uneven profile
suggesting potential settlement of masonry
blocks (/C0401C06)*



*Cracking in parapet wall and deck
(/C0401C34)*



Cracking in parapet wall and deck (/C0401C34)

3.2.3 Town Wall and Fish Sands

The beach level at Fish Sands appeared healthy and within the range observed during previous inspections. The abrasion and voiding to the access ramp adjacent to Old Pier was largely obscured by marine vegetation growth and beach sediment.

The masonry Town Wall, and supporting abutments, incorporate a multitude of historic *ad hoc* repairs but generally remains in fair condition. The wall has benefitted from recent local repointing works. During the 2022 inspection a significant defect was noted to the most easterly stone abutment where several blocks were missing. It was unclear whether this was a previous repair that had unraveled or whether the repair was in progress. It is recommended that this is addressed immediately to prevent further deterioration compromising the structure. A number of the other masonry abutments are heavily abraded and rounded at the toe. This defect appeared to have been rectified in the 2023 inspection, however another similar (but more significant) defect has occurred in the same abutment.

The masonry and concrete groynes were in good to fair condition. Beach levels increased with progression along the frontage to the west, with a sudden change at the westernmost groyne, in the lee of which the beach level drops by approximately 2 to 3m with this level then consistent to the western extent of the Town Wall.

The more recent repairs work to the concrete outfall, concrete abutment and footway promenade to the rear of the seawall, reported in 2018, remain in good condition.



Town Wall benefiting from recent repointing works (/C0401C35)



Town Wall benefiting from recent repointing works (/C0401C35)



Significant defect to masonry abutment (/C0401C35)



Recently constructed outfall and abutment. (/C0401C35)



Repaired footpath and flood wall in good condition (/C0401C35)



Promenade and rear wall in good condition (/C0401C35)

The narrow pedestrian access steps, providing access onto the foreshore from Town Wall Road, were repaired prior to 2020 with new concrete treads and a reinstated timber handrailing the steps have not deteriorated since the previous survey although it was noted the handrail is slightly loose and should be monitored. During the 2023 inspection the steps were closed off, although it was unclear why as they appeared to be in fair condition with no obvious deterioration since 2022.

The steps at the former passenger ferry landing marking the southern extent of the asset remain in poor condition with loose and displaced masonry and heavily corroded steel ties. Public access to this structure, from the road, is prevented by a masonry wall and signage.



Beach access steps (/C0401C35)



Beach access steps closed off (/C0401C35)



Damage to steps at former passenger ferry landing (/C0401C35)



Wall generally in fair condition (/C0401C35)

4. Comparison with Previous Assessment

The previous formal assessment across the whole study frontage was undertaken in July 2022.

Generally, the condition of many of the hard defences along the frontage is broadly similar to the 2022 inspections, with only very localised areas of deterioration. However, the Hartlepool Headland wall has experienced more significant deterioration and has a large number of concerning defects which were not reported in 2022. It is recommended that a thorough review of the asset is undertaken, and a strategy put in place for pro-actively addressing the issues, most critically the coping stone connection detail.

Defects identified in the current inspection were generally similar to those observed in previous surveys which have remained or experienced further deterioration in the interim period.

Defects were predominantly local defects which would not adversely affect the overall performance of assets, but which would benefit from focused maintenance activity.

5. Problems Encountered and Uncertainty in Analysis

The end of the Heugh Breakwater is closed to the public, enforced with security signage and fencing, and therefore were inspected from the foreshore or adjacent structures only.

The seaward extent of the Heugh Breakwater is permanently submerged and therefore cannot be inspected.

The quay walls within Victoria Harbour and Hartlepool Marina were not inspected as they are not classified as coastal defence assets and they are located within privately owned areas.

7. Conclusions and Recommended Actions

Further to the visual inspection of all assets, specific conclusions and recommendations for individual assets are given in **Appendix B**. The main urgent recommendations are:

- **Hartlepool Headland wall** – undertake detailed design review of asset following extensive damage. Produce strategy for addressing existing defects and to reduce risk of future defects occurring.
- **Town Wall** – Repair significant defect to most easterly masonry abutment.

All condition assessment data and selected photographs have been uploaded to SANDS (Shoreline and Nearshore Database System). This includes all data and photographs from the previous inspections since 2002 that were originally held on an MS Access Databases that had become obsolete.

Appendices

Appendix A

Asset Location Maps



Legend

- Coastal Asset location
- NFCDD Asset Number

© HaskoningDHV UK Ltd.
 World Imagery: Maxar, Microsoft, Hybrid Reference Layer: Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc, METI/NASA, USGS,
 OpenStreetMap: Map data © OpenStreetMap contributors, Microsoft, Esri Community Maps contributors, Map layer by Esri

Client:	Project:
North East Coastal Group	Cell 1 Regional Coastal Monitoring Programme

Title:

Figure 1 - Map 1

COASTAL ASSET LOCATIONS

Hartlepool Borough Council Frontage

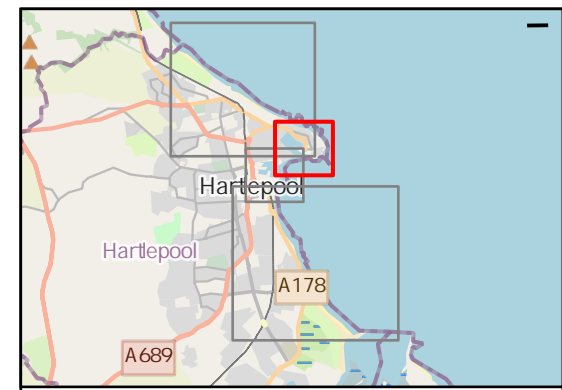
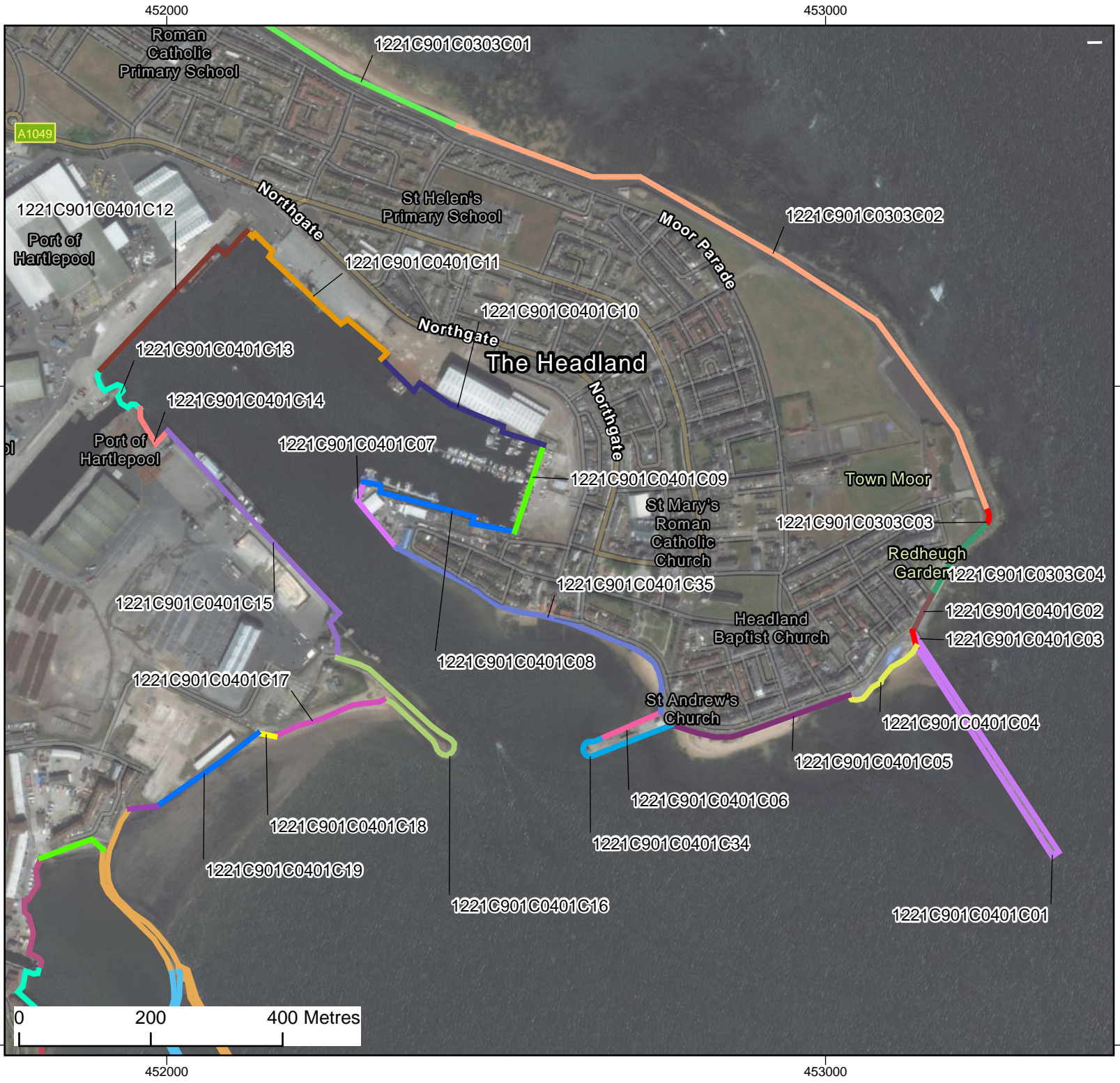
Report:

Asset Inspection Report

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	n/a	TC	NJC	A4	1:20,000

Co-ordinate system: British National Grid





Legend

- Coastal Asset location
- NFCDD Asset Number

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 World Imagery: Maxar, Microsoft, OpenStreetMap: Map data © OpenStreetMap contributors, Microsoft, Esri Community Maps contributors, Map layer by Esri, Hybrid Reference Layer: Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, GeoTechnologies, Inc, METI/NASA, USGS

Client:	Project:
North East Coastal Group	Cell 1 Regional Coastal Monitoring Programme

Title:

Figure 1 - Map 2

COASTAL ASSET LOCATIONS

Hartlepool Borough Council Frontage

Report:

Asset Inspection Report

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	n/a	TC	NJC	A4	1:8,000

Co-ordinate system: British National Grid



533000
534000

533000
534000

452000

453000

452000

453000

Appendix B Asset Condition & Recommendations

Asset Name	Description	Type	Sort by N	Length	Inspection Date	Inspector	Comments	Overall Condition	Residual Life	Recommendations	Urgency
1221C901C0303C01	Concrete block wall	Seawall	534700	691	29/11/2023	Royal HaskoningDHV	The construction works to the Hartlepool headland seawall were complete in 2019. The works ranged from the Heugh Breakwater to the south through to Thorpe street beach access ramp to the north and consisted of the encasement of the original seawall in pre cast concrete units including new coping units. North of Thorpe street beach access ramp, the wall (excluded from recent works) is in fair condition, dropping to poor and very poor in places . The lower courses of masonry wall are heavily abraded. The ramp and steps adjacent to Thorpe Street have significant defects to the concrete cope stones. The newly constructed sections of asset C0303C01 has been downgraded from "as-built condition" to "fair" condition with come sections being in "poor" condition. The new sections have suffered damage including; missing coping stones, displacement of coping stones. damage to coping stones, loss of flexible joint sealant, damage to hand rails and failure of beach access steps. There are other more minor defects including movement of armour stones and exposed toe details.	3	11 - 20	Urgent: undertake urgent repairs to damaged or displaced coping stones. Fix hand rail. Consider options for covering exposed toe. Install flexible joint sealant where it has been lost. Local repairs to concrete cope (in area excluded from recent construction activities)	urgent

Asset Name	Description	Type	Sort by N	Length	Inspection Date	Inspector	Comments	Overall Condition	Residual Life	Recommendations	Urgency
1221C901C0303C02	Encased seawall with precast concrete units	Wall	534390	1038	29/11/2023	Royal HaskoningDHV	<p>The construction works to the Hartlepool headland seawall were completed in 2019. The works, ranging from the Heugh Breakwater to the south through to Thorpe street beach access ramp to the north, consist of the encasement of the original seawall in pre cast concrete units including new coping units. The asset has been downgraded from "as-built condition" to "fair" condition with some sections being in "poor" condition. The new sections have suffered damage including; missing coping stones, displacement of coping stones. damage to coping stones, loss of flexible joint sealant, damage to hand rails and failure of beach access steps. There are other more minor defects including movement of armour stones and exposed toe details. The wall to the south is also fronted by a shallow profiled, rock armour revetment.</p> <p>In 2021 a project to rejuvenate Elephant Rock amphitheatre was complete.</p>	3	11 - 20	<p>Urgent: undertake urgent repairs to damaged or displaced coping stones. Fix hand rail. Consider options for covering exposed toe. Install flexible joint sealant where it has been lost.</p> <p>Repair damaged access steps</p>	urgent

Asset Name	Description	Type	Sort by N	Length	Inspection Date	Inspector	Comments	Overall Condition	Residual Life	Recommendations	Urgency
1221C901C0303C03	Encased seawall with precast concrete units	Wall	533780	33.1	29/11/2023	Royal HaskoningDHV	The construction works to the Hartlepool headland seawall were completed in 2019. The works, ranging from the Heugh Breakwater to the south through to Thorpe street beach access ramp to the north, consist of the encasement of the original seawall in pre cast concrete units including new coping units. The asset has been downgraded from "as-built condition" to "fair" condition with some sections being in "poor" condition. The new sections have suffered damage including; missing coping stones, displacement of coping stones. damage to coping stones, loss of flexible joint sealant, damage to hand rails and failure of beach access steps. There are other more minor defects including movement of armour stones and exposed toe details. The wall to the south is also fronted by a shallow profiled, rock armour revetment. The structure largely appeared in as built condition except the continued washout of sealant between coping unit. As there were no signs of significant damage along this asset length however due to missing joint sealant and the damage which has occurred in the adjacent asset which is of the same formation the grading has been adjusted to "good".	2	11 - 20	Urgent: undertake urgent repairs to damaged or displaced coping stones. Fix hand rail. Consider options for covering exposed toe. Install flexible joint sealant where it has been lost.	urgent

Asset Name	Description	Type	Sort by N	Length	Inspection Date	Inspector	Comments	Overall Condition	Residual Life	Recommendations	Urgency
1221C901C0303C04	Encased seawall with precast concrete units	Apron	533680	133	29/11/2023	Royal HaskoningDHV	The construction works to the Hartlepool headland seawall have been completed. The works, ranging from the Heugh Breakwater to the south through to Thorpe street beach access ramp to the north, consist of the encasement of the original seawall in pre cast concrete units including new coping units. The wall to the south is also fronted by a shallow profiled, rock armour revetment. The asset has been downgraded from "as-built condition" to "fair" condition with some sections being in "poor" condition. The new sections have suffered damage including; missing coping stones, displacement of coping stones. damage to coping stones, loss of flexible joint sealant, damage to hand rails and failure of beach access steps. There are other more minor defects including movement of armour stones and exposed toe details. The wall to the south is also fronted by a shallow profiled, rock armour revetment. As there were no signs of significant damage along this asset length however due to missing joint sealant and the damage which has occurred in the adjacent asset which is of the same formation the grading has been adjusted to "good".	2	11 - 20	Urgent: undertake urgent repairs to damaged or displaced coping stones. Fix hand rail. Consider options for covering exposed toe. Install flexible joint sealant where it has been lost.	urgent

Asset Name	Description	Type	Sort by N	Length	Inspection Date	Inspector	Comments	Overall Condition	Residual Life	Recommendations	Urgency
1221C901C0401C02	Encased seawall with precast concrete units	Wall	533620	62.2	29/11/2023	Royal HaskoningDHV	The construction works to the Hartlepool headland seawall have been completed. The works, ranging from the Heugh Breakwater to the south through to Thorpe street beach access ramp to the north, consist of the encasement of the original seawall in pre cast concrete units including new coping units. The wall to the south is also fronted by a shallow profiled, rock armour revetment. The asset has been downgraded from "as-built condition" to "fair" condition with some sections being in "poor" condition. The new sections have suffered damage including; missing coping stones, displacement of coping stones. damage to coping stones, loss of flexible joint sealant, damage to hand rails and failure of beach access steps. There are other more minor defects including movement of armour stones and exposed toe details. The wall to the south is also fronted by a shallow profiled, rock armour revetment. As there were no signs of significant damage along this asset length however due to missing joint sealant and the damage which has occurred in the adjacent asset which is of the same formation the grading has been adjusted to "good".	3	11 - 20	Urgent: undertake urgent repairs to damaged or displaced coping stones. Fix hand rail. Consider options for covering exposed toe. Install flexible joint sealant where it has been lost.	urgent
1221C901C0401C03	Concrete and masonry wall poor in places. Protected by breakwater. Amenity area then wall to road and property behind.	Wall	533600	23.5	29/11/2023	Royal HaskoningDHV	Short section of protected wall at root of breakwater. No change in 2023.	2	>20	Routine inspection & maintenance	routine

Asset Name	Description	Type	Sort by N	Length	Inspection Date	Inspector	Comments	Overall Condition	Residual Life	Recommendations	Urgency
1221C901C0401C01	Old breakwater, some repair carried out in 1990 but major problems foreseen particularly at seaward end. Important protection to areas South.	Breakwater (Heugh Breakwater)	533280	791.9	29/11/2023	Royal HaskoningDHV	Heugh Breakwater. Seaward end/inside face not inspected. No public access past fencing at mid length. Landward end in fair condition. Some cracking/abrasion was observed in the deck slab and parapet wall. The handrails were also experiencing minor corrosion. Numerous previous repairs were visible on the deck of the structure. No change in 2023.	3	11 - 20	Structural inspection incl. boat/dive survey	routine
1221C901C0401C04	Concrete recurve wall Fronting Bock Sands paddling pool.	Wall	533530	141	29/11/2023	Royal HaskoningDHV	Recurve wall generally in fair to poor condition. Cracking and spalling to face and recurve cope along extensive sections. Minor undercutting and voiding observed locally to toe. Broken flap valve on one outfall. Rear masonry wall in fair condition with localised cracking and spalling. No change in 2023.	3	11 - 20	Infill voids/undercutting. Scour protection beneath outfalls. Repair flap valve.	routine
1221C901C0401C05	Concrete recurve wall.	Wall	533480	282.5	29/11/2023	Royal HaskoningDHV	Steep cobble beach with vegetation growth in centre - protected by rock outcrop. Erosion observed to vegetation shelf. Spalling/cracking of recurve concrete crest notably at each end. Vertical crack in proximity to Old Pier. Undercutting noted in 2016 not observed due to high beach levels. Cracking in historic public convenience building and access steps. Rear masonry wall in fair condition. No change in 2023.	3	11 - 20	Local repairs to concrete. Infill void/undercutting.	routine
1221C901C0401C06	Old Pier (Pilot Pier) Inner Masonry Wall .	Wall	533460	101.2	29/11/2023	Royal HaskoningDHV	Settlement of masonry blocks (historic) adjacent to accropodes. Generally fair condition. Some bulging of wall evident. No change in 2023.	3	11 - 20	Continue to monitor. Structural inspection of Old Pier.	routine

Asset Name	Description	Type	Sort by N	Length	Inspection Date	Inspector	Comments	Overall Condition	Residual Life	Recommendations	Urgency
1221C901C0401C34	Old Pier (Pilot Pier) outer face and roundhead. Fishing breakwater with armoured head. Important protection to inner area.	Breakwater	533450	181.3	29/11/2023	Royal HaskoningDHV	Old Pier. Accropodes revetment at head appeared in good condition overall, although some larger voids were noted suggesting potential displaced units. Cracking in deck and through parapet wall may indicate settlement of the structure. Parapet wall appears to be rotating away from deck. It was noted in the 2018 inspection that strain gauges have been installed in the deck of the structure. Evidence of recent cement & grout repairs. No change in 2023.	3	>20	Structural survey. Fill cracks, continue to monitor.	routine
1221C901C0401C35	Town Wall. Masonry apron to toe of wall over mid section.	Wall	533750	509.1	29/11/2023	Royal HaskoningDHV	The masonry Town Wall, and supporting abutments, incorporate a multitude of historic ad hoc repairs but generally remains in fair condition. The wall has benefitted from recent local repointing works since the 2020 inspection. A significant defect was noted to the most easterly stone abutment where several blocks were missing. A number of the other masonry abutments are heavily abraded and rounded at the toe. Concrete apron in good condition. Loss of mortar/recessed mortar throughout esp. to lower courses – undercutting of concrete buttress at outfall/concrete wall section. The crest wall is in poor condition with missing masonry and mortar to its landward side. Recently constructed outfall, concrete abutment and footway promenade in good condition. No change in 2023.	3	>20	Local repair/infill voids at slipway. Repointing/repair of crest wall. Address defect to abutment immediately to prevent further deterioration compromising the structure.	routine Urgent