

FORESHORE AND CLIFF ACTION MANAGEMENT PLAN

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WHAT BENEFITS WILL THESE PROPOSALS BRING TO COPELAND RESIDENTS?

The report presents to members a 'Foreshore and Cliff Action Management Plan' ('the Plan') which forms a consolidated statement of the problems being experienced with those foreshores and cliffs in the Council's ownership. It sets out a proactive approach to future maintenance and identifies potential associated costs and puts budget in place for dealing with such costs. The Plan is aimed at enhancing the safety of residents and protecting their property.

WHY HAS THIS REPORT COME TO THE EXECUTIVE?

(eg Key Decision, Policy recommendation for Full Council, at request of Council, etc.)

The Plan highlights future actual and potential expenditure in excess of the key decision level. It also recommends delegating to officers authority to spend such provision set aside when required in respect of matters identified by the Plan and latent defects requiring an immediate response.

RECOMMENDATIONS:

- (a) that the Foreshore and Cliff Action Management Plan ('the Plan') annexed to the report be approved;
- (b) that the sum of £356,873 currently forming three risk based balances within the Council's general fund be transferred to ear marked reserves (and listed as 'coastal management/environmental') and utilised for latent defects and the expenditure identified in section 3 of the Plan;
- (c) that the decision of the Executive on the 5th April 2011 be amended to enable (i) the works to area 2 on the plan at section 2.3 to Atkins report of December 2010 to take place and (ii) the works to areas 6 and 7 on the said plan (creation of rock bund with planting and/or fencing) to take place; both (i) and (ii) being met from the budget previously approved and put in place by the Executive at that



meeting and with any part of such budget not being used being added to the sum referred to in (b) above;

(d) that the items of expenditure identified in section 3 of the Plan which are identified as being required within the next 10 years be approved such cost (other than staffing costs) being borne by the sum referred to in (b) above and the surplus referred to in (c) above;

(e) that the Chief Executive, in consultation with the Corporate Director – Resources and Transformation, be authorised to approve any other expenditure arising (not referred to in (d) above) of up to £50,000 at any one time from the sum and surplus referred to in recommendation (d) above provided that (1) the expenditure is similar to works identified in the Plan or is for a latent defect; (2) the defect relates to an area discussed in the Plan and (3) legal advice at that time confirms that the Council's legal position remains the same and that the Council has a duty of care to remediate the defect;

(f) that the Chief Executive, in consultation with the Leader, Portfolio Holder and the Corporate Director – Resources and Transformation, be authorised to approve expenditure of £50,000 and above at any one time from the sum referred to in recommendation (d) above provided that the conditions in recommendation (e) are met; and

(g) that (i) the Plan be reviewed annually by officers such review taking into account the results of periodic site inspections in the previous year and the levels of budget existing; and (ii) that such annual review be reported annually to members of the Executive.

1. INTRODUCTION

1.1 Over the last 2 years the Council has experienced various difficulties with coastal land in its ownership. Areas affected have included Saltom Bay, South Beach and Bransty. The problems at Saltom Bay continue and are caused by moving colliery spoil. Problems in other locations are primarily caused by environmental factors. On each occasion the Council has been left with significant costs in remediating the dangers.

1.2 As part of prudent asset and financial management it is advisable to have in place a strategy specifying how the areas will be maintained over a reasonable period. Risk assessments supported by periodic inspections enhance good health and safety provision. Budget being put in place removes the difficulties of having to find budget when an emergency arises. Proper delegation of decisions, where there is little choice but to act, speeds up the management and resolution of remedial works.

- 1.3 A plan has been drafted and this forms an appendix to this report. It deals with each area of land in the Council's ownership along the coast and addresses the current stability of the area, any outstanding works and the financial position of each area. It also identifies the cyclical nature of inspections and the cost of replacement works for future years.
- 1.4 Members are asked to approve the attached plan as a working document for inspecting and maintaining the coastal areas in the Council's ownership. It looks ahead over a period of 40 years. It consolidates the outstanding actions and identifies further problems which may be encountered with Saltom Pit and Bransty. The Plan should be reviewed annually by officers with a five year review by members, or earlier by members should lack of budget reserve dictate such.

2.0 PLAN SUMMARY ON SPECIFIC AREAS

2.1 Haverigg

Safe, some additional safety signage would be beneficial having an initial cost of £200 and an annual maintenance cost of £200.

2.2 Seascale

Safe, save for outstanding repair to one gabion basket at a cost of £200. Some additional safety signage would be beneficial having an initial cost of £1,200 and an annual maintenance cost of £200.

2.3 St Bees

Some issues relating to additional safety signage near rocks and cliff collapse area and with foreign objects anchored to sands. Initial signage cost of £1,000 with an annual maintenance cost of £200 and cost for removing foreign objects of £500.

2.4 Saltom Pit/Haig coastline

Area struggling to be kept safe. Colliery spoil continues its trek seawards causing likely collapse of Saltom Pit within 2 years which in itself causes problems for the Council in terms of previous grant awards. The footpath to Saltom continues to crack. Complications with a previous English Heritage grant exist and need to be resolved or waived by English Heritage. English Heritage's initial response is positive in that grant conditions can be waived subject to the outcome of a joint site visit arranged for the 16th November 2011. Expenditure over the next 10 years depends on how this matter is resolved. The area will only become safe

again when the spoil has stopped moving and becomes settled. This may allow a new beach access footpath to be established. The Cumbria County Council is considering how best to deal with the footpath issue to the beach.

2.5 South Beach

Unsafe. Closed to the public. Annual maintenance cost for fencing and signage of £500.

2.6 North Shore promenade

Safe. No costs.

2.7 Bransty cliffs.

Will be safe once all ongoing works have been completed. Substantial long term future expenditure anticipated for this area in terms of consultant's reports verifying safety and for the cost of undertaking replacement works. Over a period of 40+ years expenditure could amount to £800,000 as existing rock bolting, netting and panelling fails.

In respect of area 2 on the plan to Atkins' report dated December 2010 members will recall providing a conditional approval to works being undertaken if Network Rail confirmed that they would not do the works. Network Rail have replied stating that they are not prepared to do the works to this area as trajectory projections indicate that there is no risk to the railway. Works have been designed and are in the process of being commissioned. As a temporary measure signage has been erected. Previously the sum of £180,000 was set aside. It is likely that this expenditure might be contained within £100,000 due to a revised equally safe scheme being agreed with the consultants by the Council's Properties Officer.

In respect of areas 6 and 7 the Atkins report recommended a rock bund in this area at a cost of up to £50,000. Alternative options of fencing and planting have been considered for this area and Atkins have now proposed that the rock bund continues using rocks removed from area 2 at a minimal cost to the Council.

Once these works are completed the Bransty cliffs within the Council's ownership should be safe in terms of patent defects.

It is recommended that the money saved from the modified works to areas 2, 6 and 7 is added to the new earmarked reserve referred to in

recommendation (b) possibly creating a new reserve of around £430,000 for future cliff management.

In respect of areas outside the Council's ownership Network Rail has confirmed that they will carry out repairs to areas 9 and 10 referred to the plan to the Atkins report to existing rock netting installed by British Rail in 1986.

2.8 Lowca

Safe. Outstanding associated land transaction needs to be completed at nil cost.

3. RECOMMENDATIONS

- 3.1 A variety of expenditure is proposed. Some immediate and some longer term up to 50 years. Of the immediate expenditure some of this may be met from elsewhere as part of a signage review/existing beach works. In the longer term costs can only be estimated based on previous costs plus an increase equivalent to the retail price index increases. In the longer term we can only estimate when retaining wall, rock netting, bolting, steel panelling, etc will fail. In addition latent defects will appear. When defects do appear the position is largely the same – the law dictates that the Council either through occupier's liability, health and safety or preventing loss of support to adjacent properties must do the works. Choice only exists in how the defect is remediated rather than whether it should be remediated.
- 3.2 The attached Plan takes the matter as far as we can. Additional documentation will be put in place by officers – revised risk assessments and a procedure plan for responding to defects when they arise. It is important that the Council has in place the proper management procedures for responding to defects quickly.
- 3.3 Taking into account paragraph 3.1 and 3.2 it is recommended that existing reserves (which are no longer wholly required) are reallocated to cover the works set out in the attached plan. The three reserves are:
- (a) Sea walls – North Shore: £30,790. If expenditure is required for such sea walls it will fall to be dealt with as part of the Plan and expenditure authorised under recommendation (e);
 - (b) Environmental warranty – North Shore call centre: £139,883. This relates to environmental insurance taken out in 2001 to cover warranties provided by the Council to the developer of this site at that time. The initial insurance cost was £70,000 and last for 10

years. It was renewed in 2011 at a cost of £9,301 and will last for a further 10 years. The earmarking of the new reserve as 'coastal management/environmental' will allow the next premium in 2021 to be taken from this reserve. At that time the Council's liability in respect of the warranties will also be reviewed.

- (c) Environmental insurance: £186,200. It is not clear why this reserve was originally created. It was established in 2004 with an initial balance of £750,000 with £418,978 being used at that time to cover an overspend relating to a 'one off cost associated with stock transfer' with the subsequent balance, since that time, being transferred piecemeal to General Fund balances.

Reallocating these three reserves will put budget in place for expenditure other than staffing costs which will be borne by service revenue budgets. Actual works costs and consultants' costs will be borne by the reserve. In respect of insuring the risks this is not possible. The Council's insurers have advised that buildings are insurable but not land itself.

It is important the Council reacts quickly to defects as they arise and it is proposed that any spend of this sum be delegated to officers with consultation depending on the amount involved. This will avoid delays which are experienced by the urgent action procedure and reporting to Executive. The Executive by endorsing the attached plan knows what is coming. If a latent defect arises it will be dealt in the same manner as previously and as the value is likely to be high it is proposed that there will be consultation with the Leader, Portfolio Holder and the Corporate Director – Resources and Transformation.

- 3.4 Finally it is recommended that the Plan be reviewed annually by officers so that any adjustments can be made which result from the periodic inspections. This will be reported annually to members who can, if necessary, adjust the budgetary requirements/set aside.

4. STATUTORY OFFICER COMMENTS

- 4.1 Monitoring Officer's comments are: The Council's legal position is fully considered in section 1.4 of the Plan.
- 4.2 Section 151 Officer's comments are: section 3 of the Plan and the recommendations above set out the position. The movement of earmarked reserves allows the Council to fund some future works without any effect on the Council's overall financial position. The review mechanism will allow for the budget reserves to be monitored.
- 4.3 Other consultee comments, if any: None.

4.4 EIA comments: The proposals ensure the safety of residents. Indirectly contributes to equalities in ensuring that in most cases footpaths remain open rather than less commodious routes having to be taken.

5. HOW WILL THE PROPOSALS BE PROJECT MANAGED AND HOW ARE THE RISKS GOING TO BE MANAGED?

Inspections will be carried out by staff from the Contracts and Property and Environmental Health teams supported by geotechnical consultants as and when required. Works are carried out by specialised contractors.

6. WHAT MEASURABLE OUTCOMES OR OUTPUTS WILL ARISE FROM THIS REPORT?

Enhanced safety to the general public using the areas concerned.

List of Appendices

Appendix A - Draft Foreshore and Cliff Action Management Plan.

List of Background Documents:

As referred to in Plan.



Appendix A.
Exe 221111
Item 17



Proud of our past. Energised for our future.

COASTAL & CLIFF ACTION MANAGEMENT PLAN

Revision: A (04.10.11)





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1 INTRODUCTION

1.1 BACKGROUND

This report provides a framework for the proactive safety management of those parts of the coastline and foreshore within the Council's area and which are owned by the Council. It allows an action plan to be established for dealing with future maintenance and inspection requirements. By doing so it will inform the Council's budgetary framework in estimating future expenditure and necessary risk based reserve.

For each area of land the Council owns along the coast it will explain recent problems with the area, what works have recently been carried out or are planned, procedures for future maintenance and expected costs of doing so.

The report is restricted to health and safety issues and ensuring that risk to members of the public is minimised. It does not deal with conservation, recreation or the health of coastal waters and beaches.

1.2 RELATIONSHIP WITH OTHER PLANS

This report is intended to stand alone. It does however link with the non-statutory Shoreline Management Plan ('SMP'), the Haig Colliery 5 year Site Management Plan 2008-2013 and the Council's Asset Management Plan. The plans inform each other.

The SMP is a non-statutory plan aimed at producing sustainable policies for coastal defence of the shorelines. The Council's last such plan was approved by the Executive on the 27th September 2010. It informs this plan to the extent that some savings might be made here if shoreline defence works are to be undertaken. A different pace is involved though. This plan deals with health and safety and liability to the public and requires an immediate response. The SMP protects the coast from erosion and moving at a gentler pace plans ahead in 0-20 years, 20-50 years and 50-100 years stages. Where the SMP does result in works being undertaken they are likely to be of substantial value involving major capital works rather than repairing gabion netting as has been identified at Seascale.

The Haig Colliery 5 year Site Management Plan 2008-2013 was prepared as part of the restoration of the Haig Colliery Site carried out in 2007/08. It contains proposals to manage part of the former colliery site by the Land Trust who have taken a long lease of the land from the Council. The Council has not leased the coastline or cliff or certain structures on the restored site. How the Council manages these areas has an impact on the restored site in terms of intrusive signage, fencing and restricting access.

The Council's Asset Management Plan is a plan which sets out the Council's aspirations for the use of its property assets. It has three key criteria –

maximising income and capital receipts, promoting development and seeking to identify and highlight community benefits.

1.3 COMMUNITY PARTICIPATION

This report deals with land safety and as such is limited in terms of what participation can take place. As stated below the safety of the public is paramount followed by the liability of the landowner, both in terms of civil and criminal law. Community wishes not to erect fences or signage become secondary to those matters.

However where unsafe land adjoins places of natural beauty or amenity land the Council will take steps, as far as is reasonably possible, to mitigate or reduce any adverse affect to that amenity.

In respect of the Saltom/Haig site this adjoins the Haig Restoration Park and Haig Mining Museum. Community participation takes place on the development of these sites and in the former case is reflected in the Haig Colliery 5 year Site Management Plan.

1.4 LEGAL POSITION

In determining whether works should be carried out it is necessary to consider the Council's position in terms of civil and criminal liability.

Where the public are invited on to Council land – either expressly or by implication – responsibilities will exist to ensure that they are safe while on the land. The extent of that duty is to ensure that they are safe while undertaking what they were invited on the land to do. If they exceed their licence, for example paragliding of a cliff when instructed not to, then no legal liability will exist. (Tomlinson v Congleton Borough Council [2003] UKHL 47 and Harvey v Plymouth City Council [2010] EWCA Civ 860 refer). This area of law derives from the Occupiers Liability Acts 1957 and 1984.

Civil liability can also derive from the principles of private nuisance relating to the right of support that one area of land provides to another. If land slips resulting in loss of support to an adjacent area then liability will exist in nuisance.

Criminal liability arises either under the Corporate Manslaughter Act or under health and safety legislation.

Each of the above areas is considered in more detail below.

Civil liability

The areas referred to in section 2 and, with the exception of South Beach, Whitehaven, are open to the public. The public have a licence to be on the land for the purpose which the land exists for, usually recreation. Provided

that they do not exceed that licence they are visitors and the Occupiers Liability Act 1957 sets out the extent of the landowner's duty to them.

Section 2 of that Act imposes a duty to 'take such care as in all the circumstances of the case is reasonable to ensure that the visitor will be reasonably safe in using the premises for the purposes for which he was invited or allowed to be there'. The circumstances include expecting children to be less careful than adults and some people 'in the exercise of his calling' will be more careful than others, for example, a lesser duty will be owed to a surveyor inspecting the cliffs than a visitor fishing on the foreshore.

Whether the Council has discharged its duty to the visitor depends on various things. A warning notice in itself will not discharge the duty unless in all the circumstances it was enough to enable the visitor to be reasonably safe. Work undertaken by a competent contractor may absolve the landowner from responsibility if an accident occurred. Finally if a risk is willingly accepted by a visitor then this might absolve the owner.

The principle is that where the public are allowed on the land the Council should ensure that the purposes for which they are on the land can be carried out safely. As children are allowed on the areas of land concerned the highest duty will apply.

The duty applies to defects we are aware of should reasonably have been aware of. A combination of repairing defects as they arise as soon as possible, regular inspections to ensure safety and in respect of continual slippage (Haig) periodic geo-technical inspections should discharge this duty.

In respect of trespassers a lower duty is owed. In this case the Occupiers Liability Act 1984 states that whether a duty exists depends upon whether the owner knows of the risk or has reasonable grounds to know it exists, he knew or had reasonable grounds to believe the trespasser was in the area and the risk is one which in all the circumstances the owner might reasonably be expected to offer the trespasser some protection. Where a duty does exist a warning might discharge the duty. Risks willingly accepted will discharge the duty.

The Bransty area, in addition to the above duties, brings an additional area of liability. This is in respect of the area of law known as private nuisance and more specifically the removal of the right of support. One landowner owes another a right of support and if he removes the support deliberately, for example, by quarrying causing the adjacent land to collapse then he will be liable. Where the removal is not deliberate but through natural collapse the landowner will still be liable but subject to a 'measured duty' based upon knowledge of the hazard, ability to foresee the consequences and the ability (including financial means) to abate it. The same principles apply to land.

Criminal liability

The Corporate Manslaughter and Corporate Homicide Act 2007 clarified the law on whether a public authority can be guilty of corporate manslaughter. Such guilt is now based on the ways in which an organisation's activities are managed and organised. An organisation will be guilty if the way in which its activities are managed or organised causes a person's death and amounts to a gross breach of a relevant duty of care owed by the organisation to the individual. In other words a duty exists to persons on our land by express or implied invitation. If they were killed as a result of a gross breach of that duty and that breach was down to poor senior management then an organisation may be guilty.

A raft of health and safety legislation also creates liability in terms of employees and contractors.

In terms of both civil and criminal liability it is important that legal advice is obtained at the earliest possible stage so that the extent of the liability can be considered and how best the defect arising should be dealt with.

1.5 MARINE AND COASTAL ACCESS ACT 2009 AND THE COUNTRYSIDE AND RIGHTS OF WAY ACT 2000

These Acts are aimed at allowing the public to have free and largely unrestricted access to the countryside and coastal way. The later Act requires Natural England and the Secretary of State to secure objectives relating to providing a route for the whole of the English coast which allows the public to make recreational journeys on foot or by ferry and to provide in association with that route (to be called the 'English coastal route') a margin of land along the route which the public can enjoy. Certain lands are excepted and in determining the coastal route Natural England must have regard to the safety and convenience to those using the route, the desirability of the route adhering to the periphery of the coast and providing views of the sea and reducing interruptions to a minimum along the route. They must aim to strike a fair balance between the interests of the public and those having an interest in the land through ownership. Natural England is exploring a proposed route from South Beach to Lowca and a dialogue with them continues. This is referred to in the action plan.

The earlier Act specifies various types of land as access land. Where not specified a landowner can dedicate the land as access land. Coastal route land is likely to become access land. The benefit of it being designated access land is that the liability under the Occupiers Liability Acts referred to above is reduced. A person accessing such land is not a visitor for the purposes of those Acts. No liability attaches to any risks resulting from natural features of the landscape or any river, stream, etc or for improper use of walls, fences or gates. A landowner will still be liable for risks intentionally created or where he is reckless to such a risk being created. In determining whether a duty is owed regard is to be had to the fact that the access rights

should not place an undue burden, financial or otherwise, on the owner and the fact that the character of the countryside should be maintained and any guidance issued by the Secretary of State.

The interaction between the various legislation needs to be considered further to determine whether the Council could benefit from making parts of its land access land or part of the coastal route. The problem lies in the fact that some parts – Haig and South Beach – are unsafe and declaring them open is not feasible. Interaction with existing public footpath routes needs further clarification.

1.6 THE WAY FORWARD

Part 3 of this report sets out a composite action plan for outstanding actions and also acts as an instruction and guide for future periodical inspections and maintenance. The report will establish the framework for such for the next five years.

Inspection records of the sites will form supplementary documents to it leading to an annual review. Such review will consider whether the cycle of inspections is adequate or not and whether budget estimates for patent and latent defects are reasonable or whether, against the evidence of the previous year's records, can be reduced or need to be increased.

It must be stressed that this report can only deal with patent defects and setting up periodical inspections to ensure that no further defects have arisen. Latent defects will emerge from time to time and these will be dealt with as appropriate.

2 AREA DETAIL

There are eight areas of land which the Council owns which are in close proximity of the shore line and which suffer from the effects of coastal erosion and which the public have access to. These are:

Haverigg beach;
Seascale beach;
St Bees beach;
Saltom Pit ancient monument / Haig Community Park;
South Beach (public access now closed);
North Shore promenade;
Bransty to Parton cyclepath; and
Lowca (limited public access).

Each area is considered detail and follows the format of:

(a) a table providing a summary of the key issues including current maintenance position and budget requirements;

(b) detailed findings;

and contained in Appendix A

(c) a plan showing the extent of the Council's ownership; and

(d) a photograph of the area in question.

2.1. HAVERIGG

Description of area:	Haverigg Beach, Haverigg, Millom being of largely flat terrain comprising of a grassed area and shingle beach.
Ownership plan: Photograph:	Appendix A, A1. Appendix A, A2.
Land ownership position:	The Council owns the freehold having purchased it on the 22 nd July 1975.
Current condition:	The land is reasonably safe but subject to uneven ground. A final design for beach footpath improvements is expected in December 2011 and uneven ground will be levelled at that time. Adjoining land appears safe and does not pose any risk to the Council's land.
Outstanding actions and cost:	The Council has no outstanding actions in this area.
Shoreline management plan position:	Hold the line for entire stretch of Haverigg coastline for periods 0-20 years, 20-50 years and 50-100 years. The area is to be monitored every 5 years. The monitoring is to include a walk over the site and detailed inspection of the rock armour.
Future monitoring requirements:	Annual inspection.
Future monitoring and works costs:	The monitoring survey will take approximately four hours officer time. If the uneven ground works do not occur then signage should be installed warning of uneven ground. A review of signage along beach areas is currently being undertaken and it might be possible to incorporate additional signage into any signage works resulting from that review. That signage is expected to be externally grant funded. Annual maintenance costs may arise.
Overall budget requirements:	Staffing costs contained with the Contracts and Property budget.

	If the signage works referred to about do not materialise new sign cost of £300 with annual maintenance costs of £200.
Associated reports:	None.

Detailed findings:

The land is owned by the Council and generally consists of grassed land leading to the beach. Around the site are further grassed areas to the south-west, an access road to the north-west, a river to the east and beach to the south.

The land is flat to the north-west and raised to the south. The raised/ hilled area to the south leads to the beach. The areas are grassed with the grass being cut on the flatter areas on a regular basis. The grass is not cut on the hilled area where a number of foot paths to the beach lead to.

Wire mesh has been laid under some of the flatter areas of the site prior to grass seeding. The reason and extent of this is unknown. It is however visible to the north west boundary of the site.

Rock armour is present to the east and south-east of the site. Along the east boundary the rock armour follows the gradient of the bank and leads to the sandy beach at the base of the protection. The rock armour to this area appeared to be in good condition. The rock armour to the south-east of the site extends onto the beach to protect the land from the river. The condition of this rock armour is also good.

2. SEASCALE

Description of area:	Seascale Beach, Seascale, Cumbria comprising of car park, grassed areas and public toilets.
Ownership plan: Photograph:	Appendix A, B1. Appendix A, B2.
Land ownership position:	<p>The Council owns the freehold title having purchased it on the 3rd March 1993.</p> <p>The grassed areas and the toilets (shown shaded yellow within the area edged red on the plan at B1) are leased by the Council to Seascale Parish Council for a period of 20 years from the 1st April 1997, expiring 31st March 2017. In the lease there are obligations on the Parish Council to keep the land in good and tenable repair and condition and to insure against third party liability. There is an obligation on this Council to pay the Parish Council £1,000 per annum to be used in respect of the premises leased.</p> <p>This Council has two roles – ensuring that the Parish Council complies with the terms of the lease in respect of repairs and to ensure that the areas not leased are kept safe.</p>
Current condition:	Subject to one gabion basket being repaired the land is safe and in respect of the areas leased is well maintained by the Seascale Parish Council.
Outstanding actions and cost:	<p>There are two outstanding actions in respect of the land owned. A gabion basket is in the process of being repaired and signs should be erected advising members of the public of the risk associated with using the gabion baskets to access the beach. The cost of the signage would initially cost £1,200.00 to install the signage and an annual sum of £200.00 to maintain the signage and replace damaged and broken signs. As Haverigg it is hoped that this new signage can be consolidated with new signage resulting from the review.</p>
Shoreline management plan position:	<p>Hold the line for periods 0-20 years, 20-50 years and 50-100 years.</p> <p>Shore is owned by the Nuclear Decommissioning Authority.</p>

	A bid has been made for DEFRA funding for the 2015/16 financial year to examine whether the existing sea defences, on land not owned by the Council, need to be improved to maintain the current standard of protection.
Future monitoring requirements:	A full walk over survey of the site is to be carried out annually which is to include a detailed survey and audit of the gabion baskets.
Future monitoring and works costs:	It is estimated that the walk over survey will take approximately 2 hours to complete and the gabion inspection will take a further 2 hours. Other than the gabion baskets and possible signage no works costs exist.
Overall budget requirements:	The gabion baskets require remedial work which is expected to cost £200. If not separately funded the erection of signage to the site will cost £1,200.00 and will need to be maintained and reinstated if damaged/ removed which it is expected to cost £200.00 per annum. Other than the above, officer time in inspecting periodically. The car park surface is in a reasonable condition and safe. No patent work costs identified.
Associated reports:	None.

Detailed findings:

The land is owned by the Council and consists of grassed sloping areas and a public car park with public conveniences owned and located within the site. An ancient building is located centrally on the grassed area within the Council's ownership. The grassed area is sloped with the steepest gradient located towards the north-east of the site. The grassed areas are well kept and used extensively by the public.

The land with the exception of the public car park is currently leased out. The Council manage and maintain the public car park.

There are a number of large man-holes to the south of the site. It is unknown why these have been installed and what they are used for. United Utilities have been contacted to provide clarification.

The land within the Council's ownership appears to be in good condition and it is not expected that any movement will occur within these areas.

Retaining the land along the beach boundary to the west of the site are gabion baskets. It is understood that these are not within the Copeland Borough Council's boundary. However the Council has been repairing and maintaining these for some time possibly due to an historic agreement. The condition of the gabion baskets is currently fair although remedial work is required to some areas where the gabion netting has failed. Due to the location of the gabion baskets annual inspection is required. It is understood the maintenance of the gabions can be funded from the NWDA Coastal Initiatives Fund. These points are being considered further as part of shoreline management.

Visitors to the site appear to be walking over the stepped gabion baskets to gain access to the site. This should not be used as an access to the beach as there are risks associated with walking on the gabions and from sharp metal wire should the meshing have failed. It is advisable to erect signs requesting that visitors to the site use designated beach access routes.

3 ST BEES

Description of area:	St Bees Beach, St Bees, Cumbria being a slightly sloped area comprising of car park, grassed area with play area, promenade and other man made features, stones and shale and flat sand area.
Ownership plan: Photograph:	Appendix A, C1 Appendix A, C2
Land ownership position:	Land is owned by the Council, partly freehold and partly long leasehold it having been acquired on the 13 th April 1957 and 16 th December 1963.
Current condition:	<p>The land owned by the Council is safe. This land is a well used beach and areas of it are only accessible with caution. The rock areas along the northerly boundary are particularly hazardous and warning signs advise of this.</p> <p>The headland adjacent the area owned by the Council is subject to land slip onto the Council's land. Little can be done about this other than, from time to time, realigning the public footpath running along the top of the adjacent land by that land owner and Cumbria County Council.</p> <p>The promenade is considered safe.</p> <p>Objects lie within the sand part of the beach, for example, steel wire bedded into the sand. Further investigation needs to take place to determine whether these can be removed.</p>
Outstanding actions and cost:	The Council intends putting signage on the public access areas to the beach to advise of the dangers from the coastal slopes. It is anticipated that the cost of this would be initially £1000.00 to install the signage and an annual maintenance sum of £200.00.
Shoreline management plan position:	<p>Hold the line for 0-20 years and 20-50 years; For years 50-100 there should be 'managed realignment'. Key points are:</p> <ul style="list-style-type: none"> (a) the current scheme to protect corroding sheet piling along the north face adjacent to Rottington Beck is underway; (b) the groynes were appraised in 2011 which recommended minimal work for the time being with a further assessment due in 10 years with six monthly safety inspections; (c) the current promenade is around 50 years of age and is

	likely to have another 50 years life; and (e) the SMP action plan calls for studies into the long terms solutions for the area in order to support plans for maintenance and inform the next SMP review; a bid has been made for DEFRA funding for these studies for the 2016/17 financial year. An early indicative allocation has been received.
Future monitoring requirements:	A full walk over survey is to be carried out every 4 months and any changes to the land are to be recorded. Should any significant concerns be raised as part of this process further monitoring and investigation may be required.
Future monitoring and works costs:	The monitoring survey currently takes approximately 2 hours per inspection resulting in officer time of 6 hours per annum.
Overall budget requirements:	The erecting of signage to the site will cost £1000.00 and will need to be maintained and reinstated if damaged/ removed which it is expected to cost £200.00 per annum. This signage cannot be incorporated in the review of signage. Removal of foreign objects within sands: £500.
Associated reports:	None.

Detailed findings:

The land owned by the Council generally consists of beach land (sand) and shingles (stone). There is a concrete promenade to the east which spans approximately a third of the length of the land. The shingle area adjacent to the promenade is separated by timber groins.

The western area of the site is below the mean high tide line and is only visible on low tide this area consists of single and sand.

Costal slopes are present to the northern and south-east boundaries of the site. These areas are owned and maintained by others. The coastal slopes are generally earth and to these areas there is little evidence of a rock face.

The land owned by the Council appears to be in a sound condition.

The coastal slope to the north of the site suffered a land slip in February 2011. As a result of this land slip a large quantity of material was displaced onto the beached

area beneath which is owned by the Council. Cumbria County Council responded to the slippage and temporarily closed the foot path along the top of the cliff before permanently relocating it.

This area currently displays cracking and evidence of loose material and it is expected that further slippage will occur in the future due to the natural erosion of the slope face. There is little that can be done about this other than placing warning signs in the area. Cordoning the foot of the cliff off is not an option as any structure would be damaged/washed away by the sea.

There will always be a risk to visitors on the land owned by Copeland Borough Council from the costal slopes and it would be prudent to erect signage along the boundary of the Council's land to advise visitors of the risk.

4 SALTOM/HAIG

<p>Description of area:</p>	<p>A headland with a steep embankment of colliery spoil on top of bedrock with footpaths, temporarily closed, traversing the land. The area contains land known as Fairy Rocks and Saltom Pit Head. Both will over future years be engulfed by the colliery spoil which continues to slip westward to the sea. A difficult area to manage with the closure of beach access imminent.</p>
<p>Ownership plan: Photograph:</p>	<p>Appendix A, D1. Appendix A, D2.</p>
<p>Land ownership position:</p>	<p>The Council owns the freehold of the land having purchased the land in parts between 1970 and 1994 the largest area having been acquired on the 28th October 1994 from the then British Coal Corporation. The headland being safest part and used as the Haig Restoration Park is leased to the Land Trust. The lease is for a period of 99 years from the 9th September 2008 until the 8th September 2107.</p>
<p>Current condition:</p>	<p>Area 1 (shown on the Ownership Plan D1) shows constant signs of degradation largely caused by the constant slippage of colliery spoil with sandstone from the Fairy Rocks continuing to move west threatening to engulf the former Saltom Pit Head building. The beach access path requires constant remediation work to remain open. The condition of this area is considered unstable and this impinges on day to day safety. If English Heritage accept the impending demise of this ancient monument then a dialogue needs to take place with the Cumbria County Council on the closure of the beach access footpath until the spoil has stopped moving and the land settled.</p> <p>Areas 2 and 3 (shown on the Ownership Plan D1) shows signs of degradation caused by the upper sandstone cliff receding under natural erosion with the colliery spoil beneath continuing to slip over the lower cliff. This causes progressive fractures and slope failures. The public footpaths and access has been closed in this area on a temporary basis due to the instability of the area. The condition of this area is unsafe.</p> <p>Area 4 (shown on the Ownership Plan D1) comprises of the area at the head of the cliffs known as Jonathon Swift's House and east of this point. It shows signs of settlement but little regression of the cliff itself. The toe of the cliff is colliery spoil</p>

	<p>with progressive fractures showing on-going signs of failure and continued erosion. There is no access to the public at the foot of this area. The condition of this area is unsafe.</p> <p>(The above areas correspond to the area considered in the Mouchel Parkman report referred to in the detailed findings below).</p>
Outstanding actions and cost:	<p>Permanent stopping up of the public footpath from the headland along the Haig coastline (not foreshore, nor Saltom path) is required. This is being undertaken by the Cumbria County Council who will recharge its costs to this Council and which will be in the region of £4,000.</p>
Shoreline management plan position:	<p>Saltom Pit: Hold the line for 0-20 years and 20-50 years provided this is technically feasible and affordable to do so; for 50-100 years the designation is for no active intervention.</p> <p>Remainder of this area: No active intervention.</p>
Future monitoring requirements:	<p>These areas are currently monitored and changes logged on a six weekly basis in the summer months and four weekly basis in the winter months. Unless there is a major change in topography or long periods of heavy rain fall the inspection regime will remain the same.</p> <p>If the public footpaths cannot be closed permanently, particularly the one leading to the beach, then a consultant input may be required to update previous reports on the timing of the colliery spoil slippage.</p>
Future monitoring and works costs:	<p>Monitoring will continue with the 10 annual inspections each lasting approximately 3 hours.</p> <p>If the public footpaths are not closed then further maintenance will be required. Over the next 2 years the public footpath will be overcome by the colliery spoil. Approximately £4-6,000 will be spent bi-annually on the path, becoming increasingly higher over future years as the more progressive the spoil damage becomes.</p> <p>Additionally existing fencing and signage along the headland will need to be maintained at a cost of approximately £1,000 per annum.</p> <p>Saltom Pit itself was restored with the aid of English Heritage</p>

	<p>('EH') grant of £97,505 in 2008/09. The grant approval imposes a 10 year maintenance obligation and a requirement to keep access open to the public. A failure to comply could lead to repayment of grant. Additionally the Council 'must reinstate any part of the [repair works] that is damaged or lost by any means whatsoever'. Discussions need to take place with EH with the aim of amending the grant approval. Initial reactions are positive subject to a site visit between English Heritage and officers in November 2011.</p> <p>(Note: in respect of the area leased the Land Trust has obligations to keep the land in good condition. The lease does not include the unsafe area nor does it include the Candlestick structure, mineshafts, specified boundary walls, steps and a bridge within the site).</p>
Overall budget requirements:	<p>Assuming EH grant conditions are waived: Closure of public footpath (headland to beach): £7,000; Securing/managing safe collapse of Saltom Pit: £25,000 Annual maintenance of fences and signs: £1,000</p> <p>If EH grant conditions not waived: Works for prevention of Saltom Pit collapse: £25,000 Maintenance of footpaths: £5,000 per annum Annual maintenance of fences and signs: £1,000 Securing/managing safe collapse of Saltom Pit post 2019: £25,000+RPI Closure of public footpaths post 2019 £7,000+RPI</p> <p>Officer time of 30 hours per year in inspecting the land.</p>
Associated reports:	<p>Mouchel Parkman report dated 2003/04; and Parkman report dated 2009.</p>

Detailed findings:

The site lies immediately south of Whitehaven, It covers an area of approximately 37 hectares, comprising 1.3km of potentially unstable cliffs, up to 65m high. The area is divided into four areas which coincide with previous geo-technical consultant reports for the area.

The geology of the area is principally hard Whitehaven sandstone over coal measured rocks. The sandstone in the cliffs was quarried prior to 1867 leaving a bench 30-40m wide in the cliffs. Spoil from the collieries was dumped over the edge of the cliff from at least 1948 and possibly earlier until the 1970's, covering much of the bench and overflowing the lower cliff to fall onto the foreshore. The base of this slope is slowly being eroded by the sea resulting in progressive failures in the spoil. In places, the

spoil extends right to the top of the cliffs. Where the sandstone is exposed in the upper cliffs, its stability is questionable with evidence of previous failures, principally toppling of rock onto the bench.

The area behind the cliffs is principally open space. It includes maintained open space with a rugby playing field, a former skip storage depot on the edge of the cliffs, Haig Mining Museum buildings and a small business park. Beyond this coastal strip lies housing associated with Kells, Whitehaven.

The width of this coastal strip above the cliffs varies from less than 50m towards the northern end to typically 200m wide over the southern half of the area.

The site contains three areas of historically significant structures; the remaining mine buildings of Saltom Pit (1731 to 1848), the house allegedly once inhabited by the author Jonathan Swift and the former Haig Colliery itself. Saltom Pit is located at the base of the sea cliffs to the south-west of the Haig Colliery (Area 1), with Jonathan Swift's house being located north of Haig Colliery on the headland overlooking Whitehaven Harbour (Area 4). The former pithead buildings associated with Haig Colliery, including the winding gear, are scheduled grade II listed buildings, which are now Haig Mining Museum.

Previous Site Study's

A desk study, (May 2003), reviewed the site setting, history, and published geology. Geo-morphological mapping was carried out and potentially unstable areas were identified. A ground investigation was recommended.

Ground Investigation

A comprehensive ground investigation was carried out in February/March 2004 by soil mechanics under the supervision of Mouchel Parkman. It included 53 shallow holes to investigate the superficial deposits plus 60 rotary cored boreholes to a maximum depth of 70 metres to investigate the geology and rock stability. In addition 31 piezometers, to monitor ground water levels, 29 inclinometers to monitor lateral ground movement with depth, and 13 sets of extensometers to monitor settlements over various depths, were installed. Geotechnical testing and contamination testing were also carried out on selected soil and rock samples.

Area 1

The investigation showed movement to the west-north-west (300°) occurring at about 18m depth at the interface between the colliery spoil and the Whitehaven sandstone and the underlying mudstone of the coal measures rocks on a sub-horizontal (8° - 12°) plane. Analysis of this slip, has suggested that it is a block, rather than a rotational failure, with the slip surface having a residual angle of internal friction of between 10° and 13°. Water within the permeable colliery spoil and sandstone has resulted in weathering of the impermeable mudstone to a clay, creating a potential failure surface. Any increase in groundwater levels, for example, during heavy rain, both increases the disturbing force and lubricates the failure surface.

Instrumentation has confirmed surface movements of around 13.5cm over the period August 2003 to March 2004 (i.e.—20cm per year) whilst inclinometers have shown around 1.6cm of movement occurring laterally between March and May 2004 (ie — 10cm/year). The latter movement has occurred at about 18m depth at the interface between the sandstone and the mudstone. The slip zone is approximately 130m wide and contains up to half a million tons of material. If left without intervention the slip is expected to continue to move at around the above rate unless accelerated by an extreme weather event. This will result in overspill of debris towards and around the structure of the Saltom Pit, including over the mineshaft location.

This structure was repaired to prevent structural collapse due to degradation in 2009, At that time the Parkman report suggested that it was expected to be between 10 and 20 years before the spoil would push the structure over. Following progressive walk over inspections over the last 24 months approximately at 6 week intervals following the movement of the spoil it is more likely the building would be overcome within the next 5 to 10 years.

The scarp at the top of the cliff (currently about 2m) will increase in height causing secondary slips within the colliery spoil until the buried rock face is exposed. Once this happens, a situation similar to that prevailing in Area 3 could be expected to develop, that is, toppling failures, resulting in regression at a rate of around 15 metres per century. It is difficult to predict with any accuracy when this process will start, but it could be as soon as 5 years from now.

Area 2

Colliery spoil is 12m thick in the bench below the upper cliffs and spills over the lower cliff with its toe being eroded by the sea, resulting in progressive failures. Analysis of the interaction of the dip, joints and fracture of the rock, using a method called stereonet kinetic analysis, suggest that planar and wedge failures are also possible with the rock strata in this Area. The colliery spoil on the bench area, north of Fairy Rock is 12m deep or more and is collapsing over the lower cliff into the sea. Stabilization is not economically justifiable and hence this area has been fenced off because of the danger of public access. Since the rock cliff is buried in this area regression as in Area 3 is unlikely, until it ultimately becomes exposed probably around 10 to 15 years from now

Area 3

Erosion of the spoil and weaker rock at the base of the lower cliffs, above the beach, will result in progressive failure of the cliff. This, however, is likely to be a slow process. Stability of the upper cliffs is related to the dip of the bedding allied to the orientation of joints. Groundwater within the Whitehaven sandstone will also have an impact by softening and eroding the mudstone below, so reducing the stability. Failures have occurred previously in this area and stereonet/kinetic analyses have confirmed the potential for wedge and toppling instability. Comparison of the cliff line over the past 100 years on Ordnance Survey maps, suggests a regression of the coastline of 15m to 20m in this area. Rock failures have occurred to the upper cliff in area 3 a little over 10 years ago (1997-8) and may continue to occur. Stabilization works would be

expensive and it is recommended that instead, a stand-off distance of say 20m (regression is occurring at a rate of 15 to 20 metres a century) from the cliff face is adopted for any new works (e.g. access routes) in this area, with the existing track moved back (eastwards) accordingly, and the cliff top fenced.

Area 4

Results around Jonathan Swift's house suggest some movement to the west, whilst the house itself shows signs of settlement. However, there is no apparent failure plane and further monitoring will be required to confirm the behaviour in this area.

5 SOUTH BEACH

Description of area:	Located at the end of West Strand, Whitehaven the area comprises of a grassed area, with adjacent car park, leading to a pebble and stone beach which is currently closed to public access
Ownership plan: Photograph:	Appendix A, E1 Appendix A, E2
Land ownership position:	The Council owns the freehold having purchased it in two parts on the 28 th June 1961 and 28 th October 1984.
Current condition:	<p>The area is a short Westphalian age consisting of mudstone, siltstone and sandstone with deposits of Flandrian (Quaternary) age, overlain by made ground. The bedrock geology of the site is described as a Pennine Middle Coal Formation of Carboniferous.</p> <p>The grassed area above the cliff was observed to be flat and therefore deemed likely to provide poor drainage. This, coupled with prolonged heavy rainfall may lead to the saturation of the spoil material. In addition, high tides and rough seas have eroded the cliff, and created a slope beyond the angle at which the material is stable.</p> <p>It is likely that this removal of support by wave action, coupled with the saturated ground, has caused the colliery spoil material to become unstable and fail in the past, and will also be the major cause of failure in the future.</p> <p>Due to the unstable nature of the colliery spoil in this area the Council has installed a 15 metre buffer zone by means of a fence at the top of the cliff with no public access being allowed on to the beach below. The public footpath running east to west has been closed</p> <p>Overall the condition of this area is unsafe.</p>
Outstanding actions and cost:	The Council has no outstanding actions in this area. Access by the public is prohibited and monthly monitoring is undertaken.
Shoreline management plan	No active intervention for years 0-20, 20-50 and 50-100.

position:	
Future monitoring requirements:	The cliff top area is currently monitored on a six weekly basis and is linked into the Saltom monitoring regime. It has been deemed too dangerous to walk the slope area and therefore unmanaged. The beach area is monitored every 4 months. The beach fence is monitored monthly. Unless there is a major change in topography or long periods of heavy rain fall the inspection, regime will remain the same.
Future monitoring and works costs:	Monitoring will continue as stated each inspection currently taking approximately one hour x 8 inspections per year in officer time.
Overall budget requirements:	Staffing costs plus maintenance of fences and upper cliff access paths including signage at a cost of approximately £500 per annum.

Detailed findings:

The south section of beach lies immediately to the south of the harbour wall. The sea cliff in this area is approximately 45 metres high and is backed by a flat area of grass, a small car park, and a slope backed by a cliff that appears to have been quarried. Most of this area appears to have been landscaped, disguising its industrial origin as an area of colliery spoil tipping dating back about 80 years. Immediately to the east of this area are the remains of the Wellington colliery, which include the large candlestick chimney and Wellington House as well as some retaining walls.

The bedrock geology of the site is described as Pennine Middle Coal Formation of Carboniferous. In January 2007 staff from the British Geological Survey carried out a walkover inspection of the site of a landslide which had occurred earlier that month. The purpose of the survey was to gather information about the nature of the landslide and the geological materials comprising it.

Following on from the survey, a number of observations were made of the geological succession near the site. The landslide occurred in colliery spoil material, which showed a distinct stratigraphy (layering), with four identifiable units. Brief descriptions of each unit, based upon inspection of material at the cliff face are given below

Unit	Field description
1	Dark-grey, up to coarse-gravel size, angular to sub-rounded, slightly stratified [MRCY – Land Raising Mine Fill (Colliery)]
2	Buff/light-grey/brown, loose, clasts of sandstone and colliery debris in gravel/sand/clay matrix. Up to cobble-size (250-300 mm) angular mass, slightly stratified, contains lenses of 1 [MRCY – Land Raising Mine Fill (Colliery)]
3	Dark-grey/black, semi-indurated - loose, coarse gravel-sized (60-80 mm) clasts of coal, shale, slag [MRCY – Land Raising Mine Fill (Colliery)]
4	Dark-grey/greenish-grey/light-grey, loose, coarse gravel-size clasts of shale and colliery debris, undulating stratification (tipped) to south, regular stratification to north [MRCY – Land Raising Mine Fill (Colliery)]



Due to the nature of the material and the mechanism of land sliding the landslide can be classified as a debris fall. Rainfall figures for November and December 2006 were 125 to 150% and 175 to 200% respectively above the 1961-1990 average (Met Office, 2006 & 2007). This high rainfall had saturated the colliery spoil material, increasing the pore water pressure and causing the material to become unstable. The grassed area above the cliff was observed to be flat and therefore deemed likely to provide poor drainage. This, coupled with prolonged heavy rainfall may have lead to the saturation of the spoil

material. In addition, high tides and rough seas have eroded the cliff, and created a slope beyond the angle at which the material is stable (angle of repose). It is likely that this removal of support by wave action, coupled with the saturated ground has caused the colliery spoil material to become unstable and fail.

Due to the unstable nature of the colliery spoil material; access to the area should be prevented. This involves no public access to the beach, and at least a 15 m fenced buffer zone along the cliff top. Based on observations in January 2007, it is likely that any future single cliff failure event will result in no more than 1-2 m recession of the cliff top. Constant monitoring of the cliff top is strongly recommended in order to maintain the 15 metre buffer.

Signage along the cliff top and in the immediate vicinity of the car park should warn the public of the risk posed by the landslide hazard in the area.

The report also made reference to the future management of the area should the area be kept open to the public, and stated that in the medium term and in order to manage the site effectively, it is necessary to understand the properties of the heterogeneous colliery spoil material in three dimensions. This would involve detailed geotechnical tests on the spoil material. In respect of the longer term it is recommended that a more detailed site investigation is undertaken before any long-term remedial measures are considered. This would involve the drilling of boreholes and/or a geophysical survey in order to determine the exact location and orientation of the pre-tipped bedrock profile currently obscured by the spoil. A better understanding of the properties and exact distribution of the colliery spoil is also necessary. Coastal processes (past and contemporary) should also be examined to establish the impact upon the current or future coastal section.

6 NORTH SHORE, WEST OF RAILWAY

Description of area:	This is an area to the rear of the Boatyard and Christopher Harding House. It runs alongside the beach area and consists of an un-adopted roadway, parking area and slip way and is separate from the stone and pebble beach by sea defence rock armour constructed in the early 1990's.
Ownership plan: Photograph:	Appendix A, F1 Appendix A, F2
Land ownership position:	The Council owns the freehold having purchased it on the 28 th June 1961.
Current condition:	The area is safe.
Outstanding actions and cost:	None
Shoreline management plan position:	Hold the line for years 0-20, 20-50 and 50-100.
Future monitoring requirements:	6 monthly inspections will be required of this area.
Future monitoring and works costs:	Twice a year inspections by officers. Occasionally maintenance of sea defence rock armour from the coast management budget of up to £1,000 per annum is required. Minor movement of the rock armour has occurred but this has been repaired with additional material. A one off expenditure of £5,000 has previously been necessary.

Detailed findings:

Latest risk assessment shows the site as safe.

7 NORTH SHORE, EAST OF RAILWAY AND BRANSTY

Description of area:	This is a large area stretching from Bransty Row to Bransty Toll Bar. It largely comprises of sandstone cliffs which are in places embanked by soil and other natural material. The area does not suffer from colliery spoil but heavy rainfall and poor drainage has caused problems in this area with rock erosion and soil saturation.
Ownership plan: Photograph:	Appendix A, G1 Appendix A, G2
Land ownership position:	The Council owns the freehold having purchased it on the 2 nd February 1959.
Current condition:	<p>The area is partially safe and partially unsafe. Where it is unsafe remedial works are either ongoing or are planned. Briefly:</p> <p>Area at the rear of 1-3 Bransty Road: works being designed and to start after completion of works behind 9-14 Bransty Road;</p> <p>Area at the rear of 9-14 Bransty Road: works ongoing;</p> <p>Retaining wall alongside U4440: poor condition but safe; remaining life span 10-15 years;</p> <p>Earth on top of retaining wall: might slip onto roadway in small quantities; no danger;</p> <p>Area at rear of Cumbria Steelstock and Lonsdale House: safe;</p> <p>Atkins area 2: high risk; design works nearly complete; warning signs erected; remedial works to start shortly;</p> <p>Atkins areas 3 to 7: minimal risk of rock fall onto footpath; additional preventative measures will be installed as part of works to area 2.</p>
Outstanding actions and cost:	Works at the rear of 9-14 Bransty Road and 1-3 Bransty Road and areas 2 to 7 Atkins plan – previously approved by Executive and funding in place.

Shoreline management plan position:	Not applicable as the land does not form part of the coastline.
Future monitoring requirements:	3 monthly inspections will be required of this area post completion of the works.
Future monitoring and works costs:	<p>Monitoring will continue as stated, each inspection currently taking approximately three hours x 4 inspections per year in officer time.</p> <p>Expenditure authorised so far with works currently being undertaken/planned in the near future: Land behind 1-3 Bransty Road – soil nailing (approved by Executive on the 27/09/11 and by an urgent action on the 22/09/11; to Council on 13/10/11); Land behind 9-14 Bransty Road – soil nailing (approved by Executive meetings on the 29/03/10 and 24/01/11 and an urgent action of the 23/12/10); Land behind Cumbria Steelstock – safe Land behind 1 Lonsdale House – safe Land behind 2 Lonsdale House/Area 1 North Shore, Atkins plan - safe Area 2 North Shore, Atkins plan – rock netting currently being designed. Executive approved spend of £169,000 at meeting on the 05/04/11; and Areas 3-7 North Shore, Atkins plan – minimal risk to footpath; alternative methods to rock bund/fencing being explored. Works to be carried out as part of area 2 works.</p> <p>Future budget requirements are:</p> <p>Replacement of retaining wall alongside U4440 on 10-15 years time with gabion baskets - £33,000 + RPI.</p> <p>For future geo-technical advice on rock condition for areas 1 – 8 on the plan at page 13 of the Atkins report dated March 2010 in 10 years time at a cost of £30,000.</p> <p>For future geo-technical advice on possible cliff slippage for the area behind 1 – 14 Bransty Road and the Cumbria Steelstock premises in 10 years time at a cost of £30,000.</p> <p>For remedial works to existing rock netting and bolting and panel fencing to the area at the rear of 1 Lonsdale House and the Cumbria Steelstock premises in 40 years time at an</p>

	<p>estimated cost of £500,000.</p> <p>For replacement rock netting to area 2 Atkins plan in 40 years time - £169,000 +RPI.</p> <p>For maintenance of rock bund/remedial works for areas 6 and 7 Atkins plan – contained with revenue budgets.</p> <p>Budget should be set aside of £250,000 for latent defects in this area which might occur over the next 25 years.</p>
Overall budget requirements:	<p>Staffing costs plus the total shown above of:</p> <p>Actual required now: areas 6 and 7 Atkins plan:</p> <p>Required within next 10 years: £60,000 + RPI</p> <p>Required within next 15 years: £33,000 + RPI</p> <p>Required within next 15-40 years: £669,000</p>
Associated documents:	Report by Atkins dated March 2010

Detailed findings:

Since 2000 this area has suffered significantly from coastal erosion, heavier than average rainfall and poor drainage. This has led to the following problems in this area:

Area A The most recent of incidents having come to light on the 22nd September 2011. Noticed originally in early 2011 this area has deteriorated quickly with further opening of a tension crack in the slope causing further damage to a wall at the rear of 1 Bransty Road. If the slope was left untreated during the winter of 2011 water infiltration in the tension crack and increased soil saturation is likely to increase the rate of slope deformation and its effects on 1 and 2 Bransty Road. Slope stabilisation measures are now being designed. Works will be carried out late 2011 to provide restraint to the movement and reduce the rate of deterioration to this area. These design and construction works were authorised by an urgent action and decision of the Executive on the 27th September 2011 at a total cost of up to £133,000.

Works will comprise of soil nailing with a life span of 100 years.
Footpath temporarily closed pending completion of the works.

Area B This area is a top of a retaining wall running alongside the U4440 Wagon Road. The embankment between this adopted road and numbers 1-14 Bransty Road has been the subject of slippage. This means that some soil rests on the top of the retaining wall. Further pressure from soil slippage further up the embankment could cause this soil lying on top of the retaining wall to slip onto the road. If this does occur it will only consist of small amounts of soil at any one time. The area needs to be inspected regularly and any soil falling from the wall removed. The wall itself is in poor condition but remains solid. It is expected that this wall will need to be replaced over the next 10-15 years at a cost of around £33,000.

Area C On the 24th December 2009 the embankment in this area suffered a land slip which caused a large amount of soil to slide towards the U4440 Wagon Road. Fortunately it was caught in the trees on the embankment and did not fall onto the road. Permanent soil nailing works are now being undertaken.

Area D: This is the area behind Cumbria Steelstock premises. It is safe following rock panelling being put in place approximately 10 years ago. It will require a detailed inspection in about 10 years along with the cliffs referred to in Areas A-C above at a cost of around £30,000. Works may be required following that inspection.

Area E: Rear of Lonsdale House. Safe following rock netting and bolting being carried out, which is likely to last for a further 40 years. Periodic inspections will be required.

Atkins areas:

- 1 Part of the former 2 Lonsdale House. Unsafe but now walled/fenced off and public excluded due to danger. No risk to public footpath.
- 2 Unsafe. Warning signage in place. Due to steep angle of rock face and jointing patterns and rapid weathering there is a risk of rock falls.
- 3 -7 Likely rock fall expected but cliff some distance from footpath which can be protected by rock bund and fencing measures.

8. Lowca

Description of area:	Steep cliff area covered in grass overlooking the Carlisle-Whitehaven railway which traverses the cliff.
Ownership plan: Photograph:	Appendix A, H1 Appendix A, H2
Land ownership position:	The Council owns the freehold at the top of the cliff. Network Rail owns the cliff itself.
Current condition:	The area is safe. Maintained by Network Rail.
Outstanding actions and cost:	An exchange of land with Network Rail remains to be completed. This has been outstanding for some time.
Shoreline management plan position:	Hold the line for 0-20, 20-50 and 50-100 years.
Future monitoring requirements:	6 monthly inspections will be required of this area post completion of the works.
Future monitoring and works costs:	None other than officer time in 2 inspections per year.
Overall budget requirements:	Staffing costs in respect of bi-annual inspections to be met from the Contracts and Property Services' revenue budget.

Detailed findings:

Reclamation works were carried out in the 1980's in this area with the aim of remediating original colliery spoil and mine workings. These works resulted in a new fence line being created between the former colliery land and the coastal edge. The coastal railway traverses the coastal edge and Network Rail take an active part in maintaining the whole of the cliff face, above and below the railway. The fence line moved the boundary between the Council and the then British Railways Board's land

resulting in a land exchange being required. Due to the legal status of the Board changing and difficulties in providing instructions by the Board/Network Rail to their solicitors the land exchange remains incomplete. This needs to be pursued as the only outstanding action for this area. The exchange is at a £1 consideration with each party bearing its own costs so no financial issues arise other than legal costs being met from Legal Services' revenue budget.

Other than the above no outstanding actions arise other than bi-annual inspection of the cliff top. No longer terms works in respect of patent defects are anticipated.

3. Action Plan

3.1 The plan below summarises the outstanding actions and financial implications. Financial costs are one-off costs unless shown as periodical. Paragraph 3.2 deals with the funding for such implications.

Area	Action	Financial cost	Total costs
1. Haverigg	1.1 Annual inspection 1.2 Signage – both purchase and maintenance dependent on ongoing signage review and uneven land works	1.1 Revenue 1.2 If needed separately cost of £200 and £200/annum maintenance	£200 one off possible £200/annum thereafter possible
2. Seascale	2.1 Annual inspection 2.2 Gabion repair 2.3 Gabion signage – purchase and maintenance dependent on ongoing signage review	2.1 Revenue 2.2 £200 to be contained with sea defence budget 2.3 If needed separately cost of £1,200 and £200/annum maintenance	£1,200 one off possible £200/annum thereafter possible
3. St Bees	3.1 Three inspections per annum 3.2 Cliff and rock signage 3.3 Removal of beach hazards	3.1 Revenue 3.2 £1,000 and £200/annum 3.3 £500	£1,500 one off required now £200/annum thereafter
4. Saltom/ Haig	4.1 Ten inspections per annum Either: 4.2 Closure of footpaths 4.3 Managing collapse of	4.1 Revenue 4.2 £7,000 4.3 £25,000	Within next 10 years either: £42,000 or £212,000

	<p>Saltom Pit</p> <p>4.4 Fences and signs</p> <p>OR</p> <p>4.5 Prevention of Saltom Pit collapse</p> <p>4.6 Maintenance of footpaths</p> <p>4.7 Fences and signs</p> <p>4.8 Eventual managed collapse of Saltom Pit</p> <p>4.9 Closure of footpaths</p>	<p>4.4 £1,000/annum</p> <p>4.5 £15,000/annum for 8 years</p> <p>4.6 £5,000/annum</p> <p>4.7 £1,000/annum</p> <p>4.8 £25,000+RPI</p> <p>4.9 £7,000+RPI</p>	
5. South Beach	<p>5.1 Eight inspections per annum</p> <p>5.2 Fences and signs</p>	<p>5.1 Revenue</p> <p>5.2 £500/annum</p>	£500/annum
6. North Shore	6.1 Bi-annual inspections	6.1 Revenue	Nil
7. Bransty	<p>7.1 Four inspections per annum</p> <p>7.2 Fences and signs</p> <p>7.3 Contingency for geo-technical inspection in 2020 (Areas 1-8)</p> <p>7.4 Contingency for geo-technical inspection in 2020 (Steelstock – Toll Bar)</p> <p>7.5 Contingency for replacement panelling, netting and rock bolting (Steelstock – Lonsdale House) in 2040</p>	<p>7.1 Revenue</p> <p>7.2 £2,000/annum</p> <p>7.3 £30,000+RPI</p> <p>7.4 £30,000 + RPI</p> <p>7.5 £500,000 + RPI</p>	<p>Immediate: £2,000/annum</p> <p>Long term: 2020 : £93,000+RPI 2040: £500,000+RPI 2050: £250,000+RPI</p>

	7.6 Contingency for replacement rock bolting and netting (Lonsdale House- Toll Bar) in 2050	7.6 £250,000+RPI	
	7.7 Replacement of retaining wall alongside U4440 on 10-15 years time with gabion baskets	7.7 £33,000+RPI	
8. Lowca	8.1 Two inspection per annum	8.1 Revenue	Nil
	8.2 Completion of land exchange	8.2 Nil	
9. General	9.1 Preparation of procedure for reacting to cliff slippage and updating of risk assessments	9.1 Revenue	Nil

3.2 It is proposed that the cost of inspections is met from the revenue budgets of the Contracts and Property Services' and Environmental Health Services' Teams.

3.3 In respect of capital outlay the repair of all known patent defects has been budgeted for as set out in the Detailed Findings of the relevant land section.

3.4 In respect of future potential outlay identified and for repairing latent defects it is proposed that the following risk based balances identified within the General Fund Balance 2011/12 be consolidated and transferred to ear marked reserves and used for coastal management/environmental:

(a)	Sea walls – North Shore:	£30,790
(b)	Environmental warranty – North Shore call centre:	£139,883
(c)	Environmental insurance:	£186,200

Total:	£356,873
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In respect of (a) and (b) it is understood that these were identified as part of the development of Christopher Harding House, North Shore. Both sea walls and environmental warranty (renewed until 2021) are being contained well within the risk based reserve and whilst it is inappropriate to delete the reserve altogether the amounts required for these items is less than that expected.

In respect of (c) little information exists on this reserve other than it being created in 2004/05 originally at £750,000 with £418,978 being used at that time with the subsequent balance, since that time, being transferred piecemeal to General Fund balances. No expenditure is anticipated on this risk based balance.

- 3.5 The sum of £356,873 can be ring fenced against expenditure arising under this report and for latent defects.

If no latent defects appear this sum should cover expenditure mentioned above for the worst scenario for the next 12 years. In terms of best scenario in respect of Saltom Pit, allowing for managed collapse, the sum should cover expenditure for the next 20 years. Of course one expensive latent defect arising and the calculations are distorted.

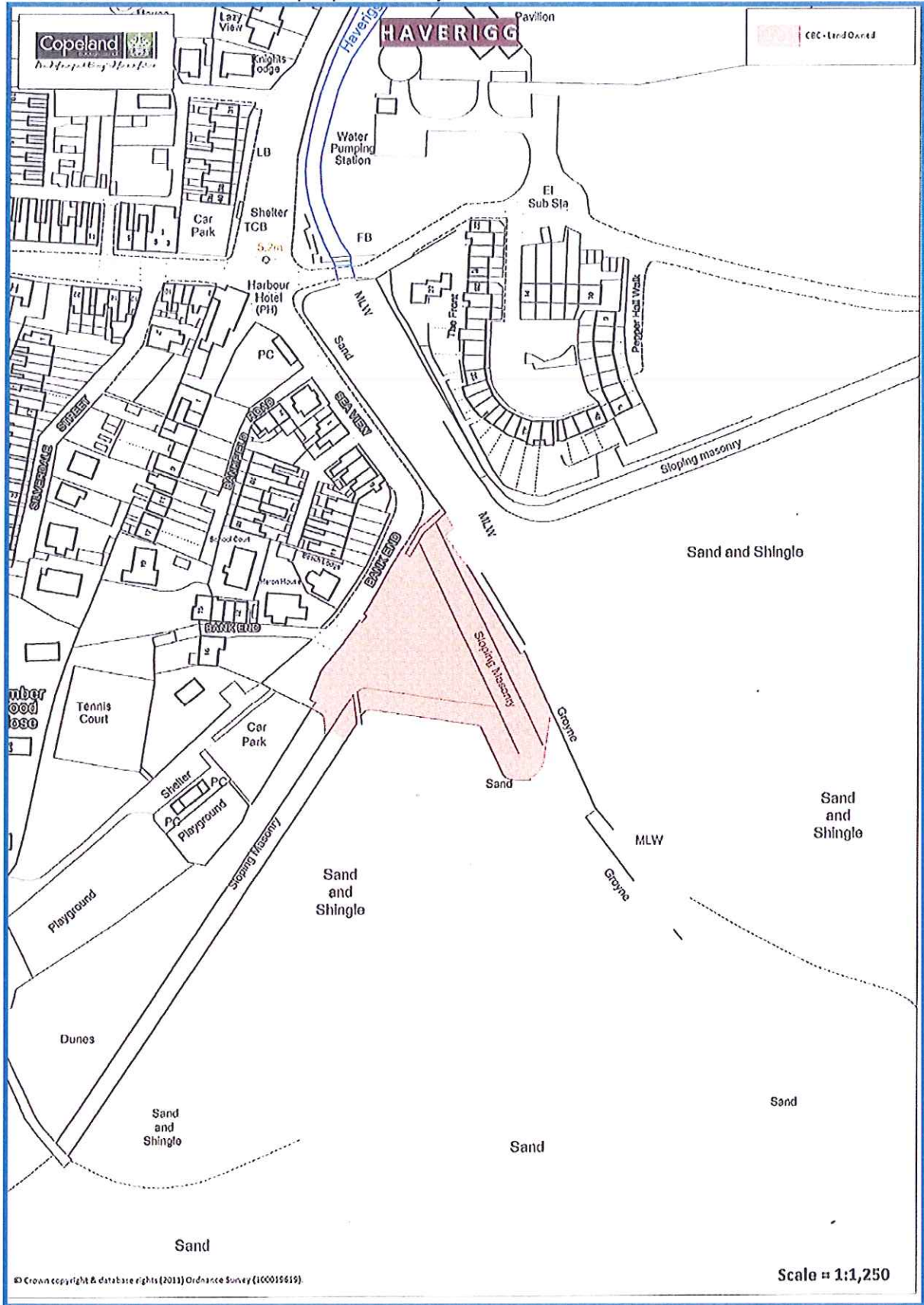
4. CONCLUSION

- 4.1 This report draws together incidents of cliff slippage and rock fall that the Council has experience over the last 5 years. It consolidates the expenditure currently authorised and works ongoing. It anticipates future expenditure in respect of works already undertaken or in the process of being undertaken.
- 4.2 The report does not and cannot predict what else might happen in respect of latent defects. Such will arise due to the severe impact of weathering on the cliffs over recent years. When it does happen the Council needs to react quickly. The covering report to the Executive makes some recommendations in this respect. Additionally there is a need for a reactive procedure to be established, based on experience gained over recent years, which will demonstrate that the Council properly manages and organises its response to such incidents. This additional work, being an officer tool, will be completed by December 2011.

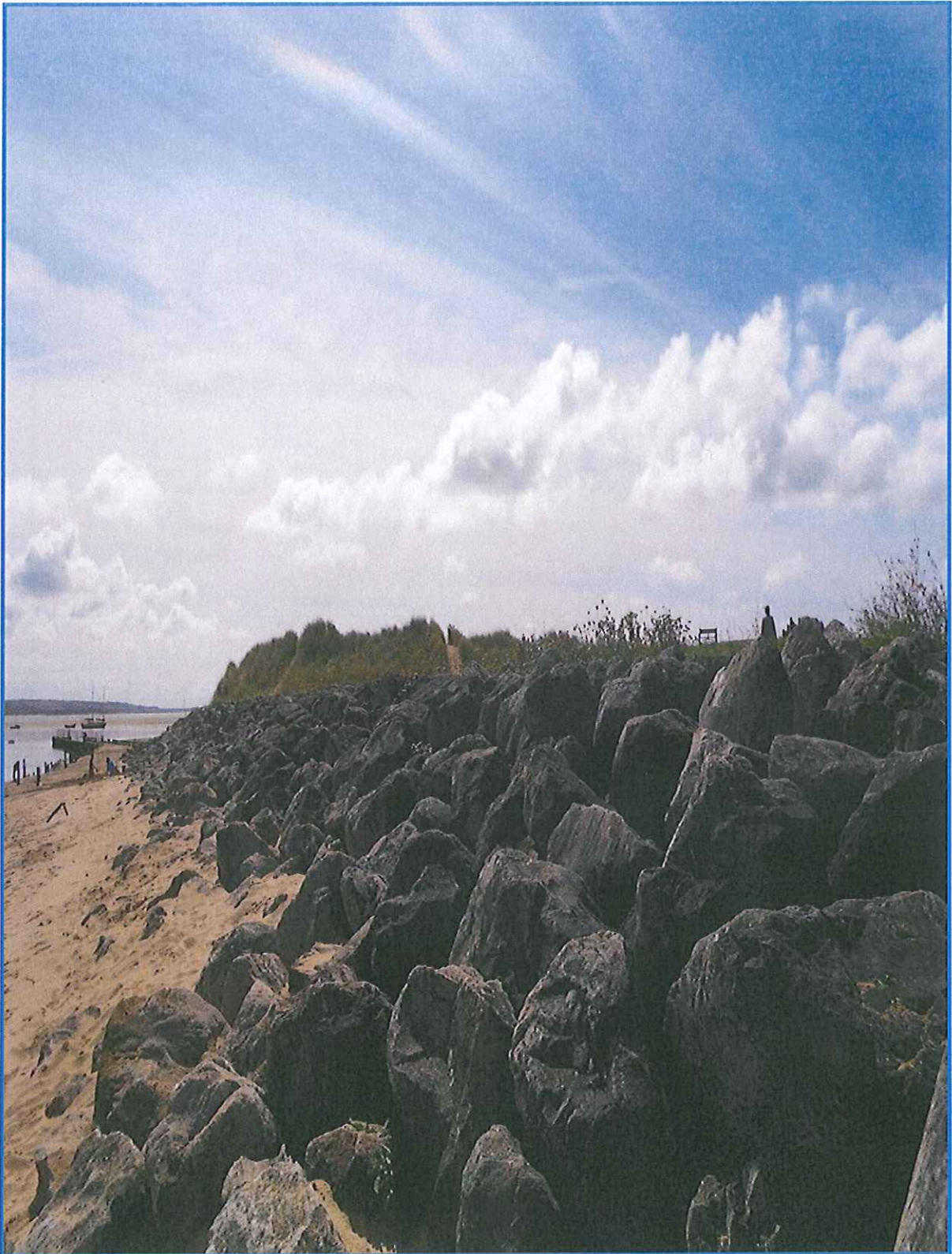
APPENDIX A

Ownership Plans and Photographs

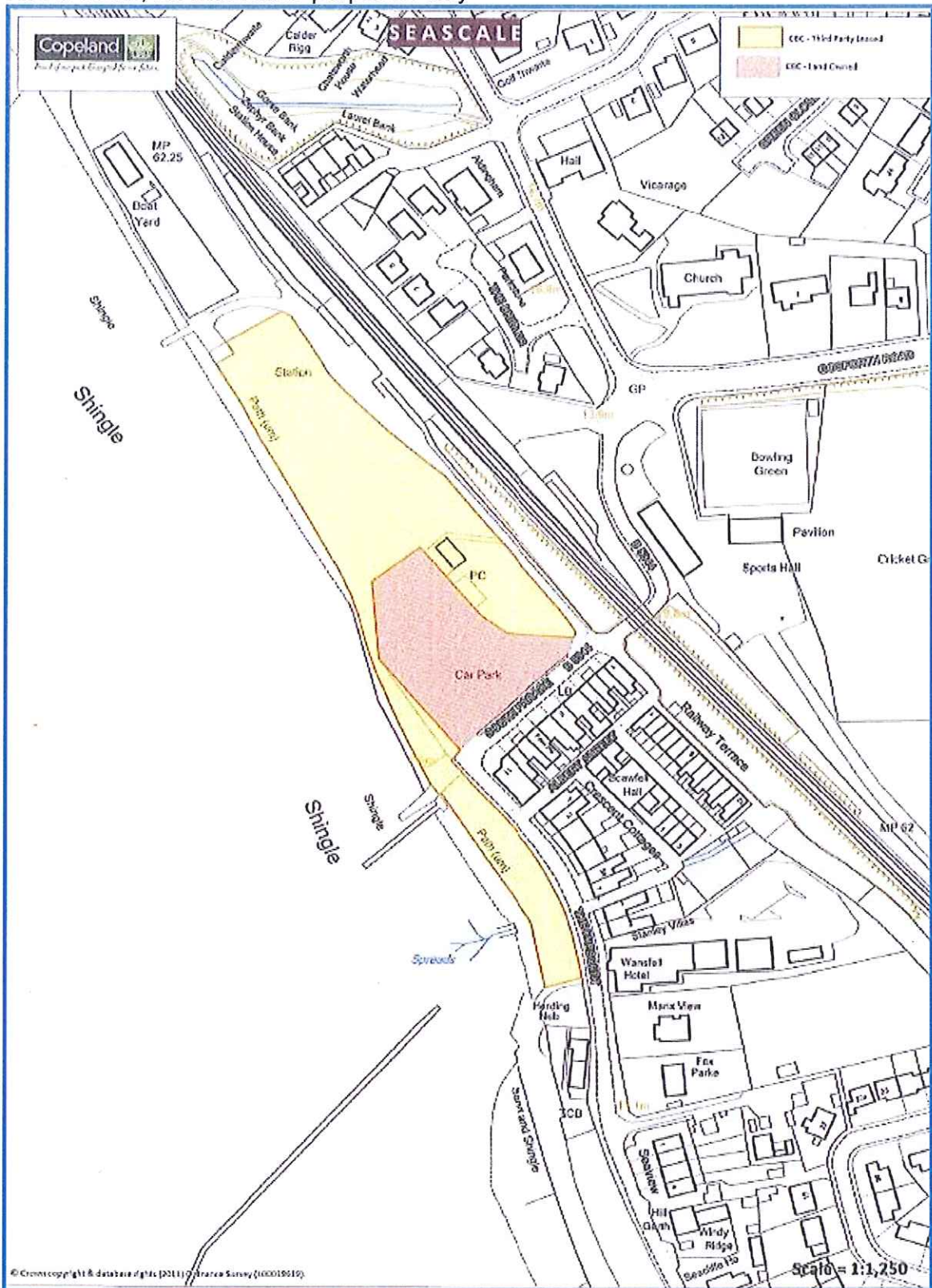
A1 - HAVERIGG OWNERSHIP PLAN
 Not to scale, for illustrative purposes only



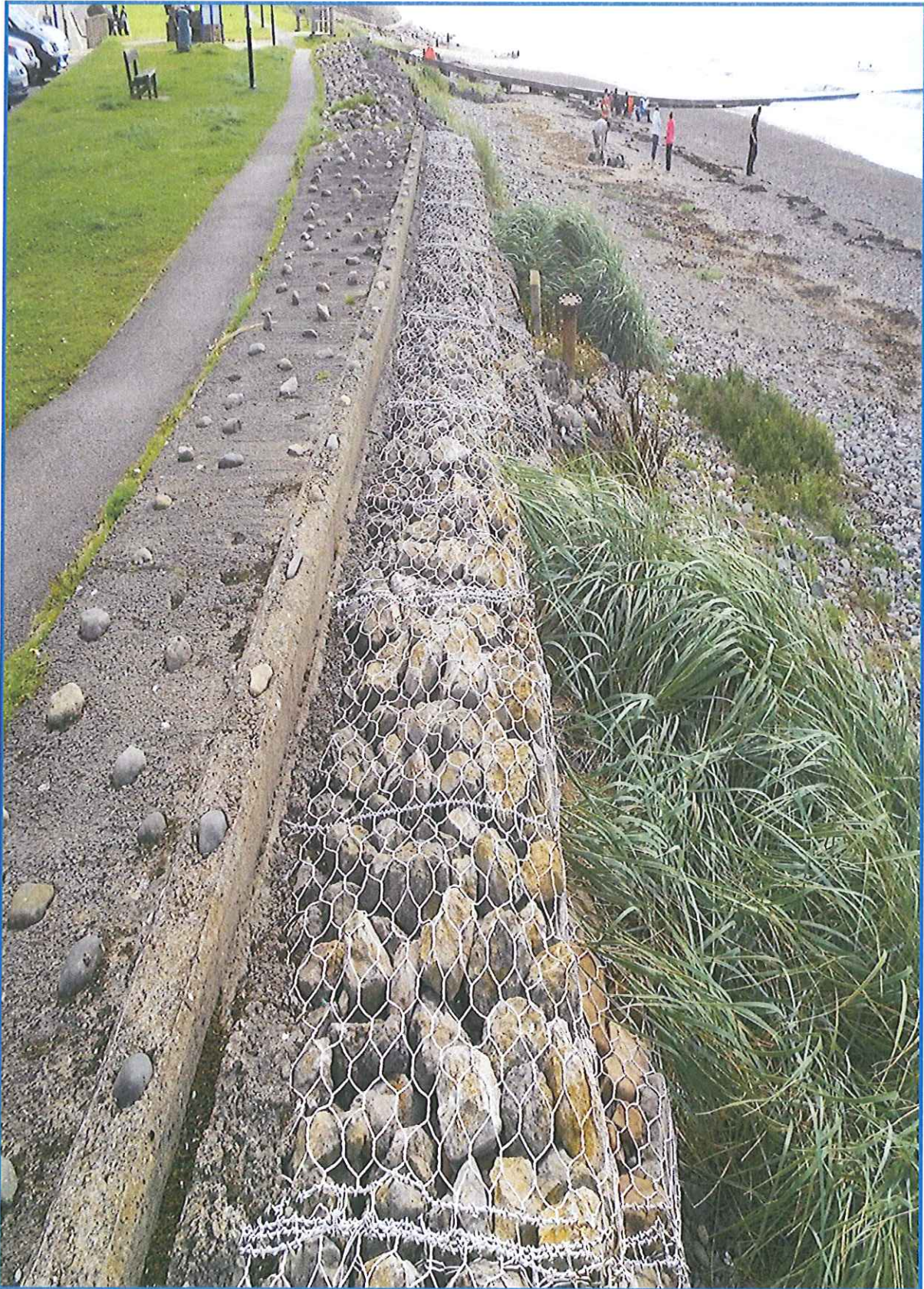
A2 - HAVERIGG PHOTOGRAPH



B1 - SEASCALE OWNERSHIP PLAN
 Not to scale, for illustrative purposes only

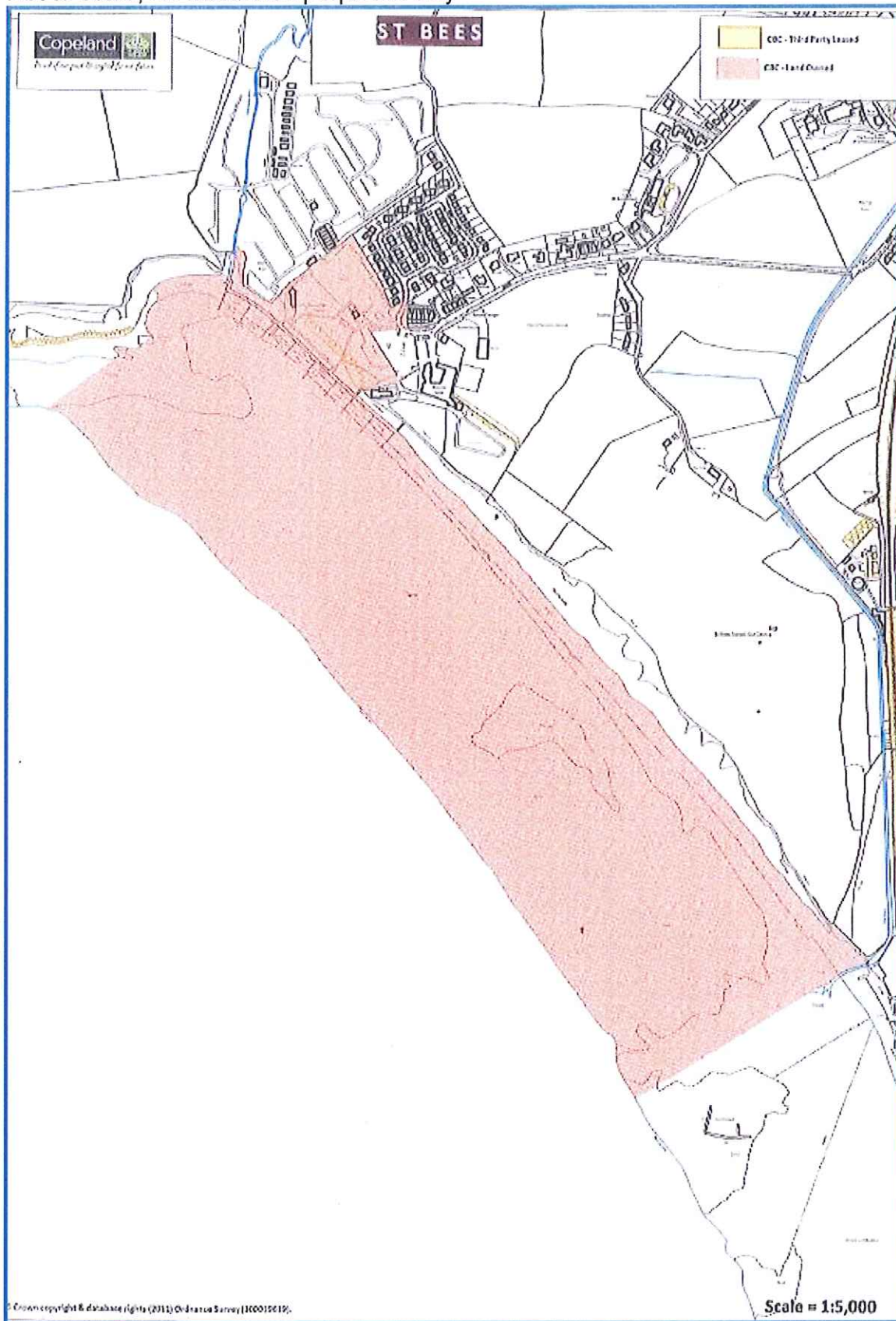


B2 – SEASCALE PHOTOGRAPH



C1 – ST BEES OWNERSHIP PLAN

Not to scale, for illustrative purposes only



C2 – ST BEES PHOTOGRAPHS

St Bees foreshore looking north

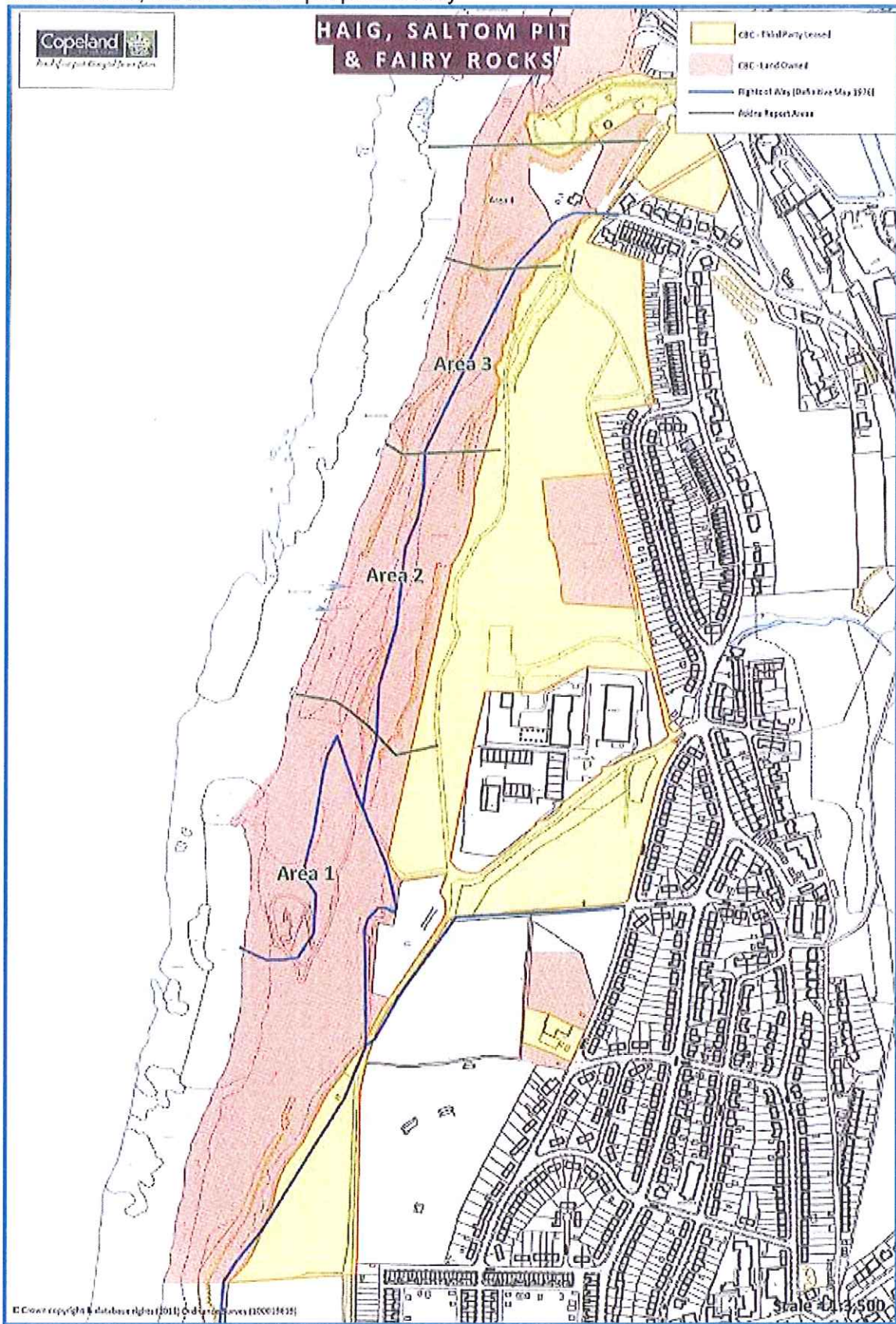


St Bees foreshore looking south

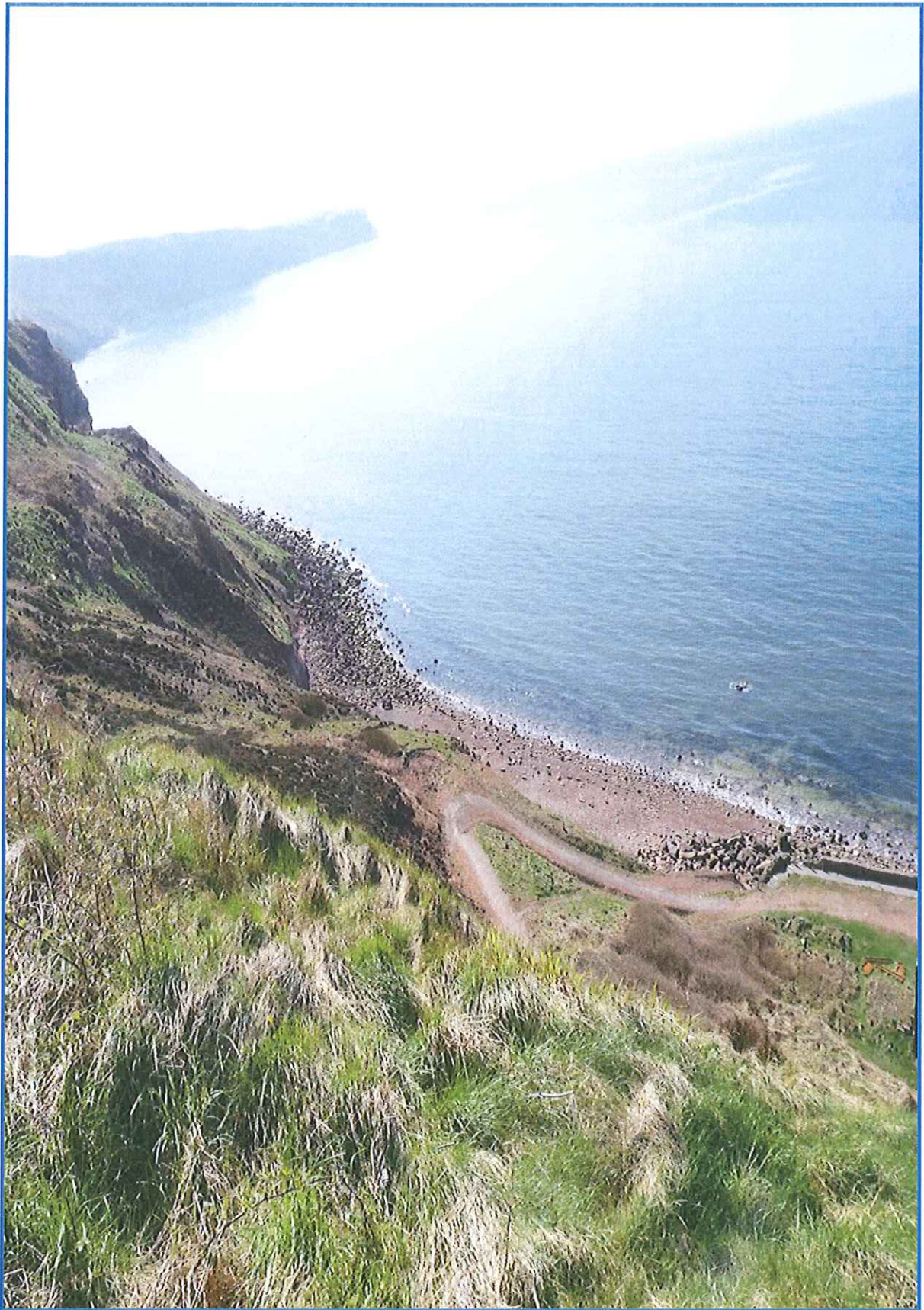


D1 – SALTOM/HAIG OWNERSHIP PLAN

Not to scale, for illustrative purposes only

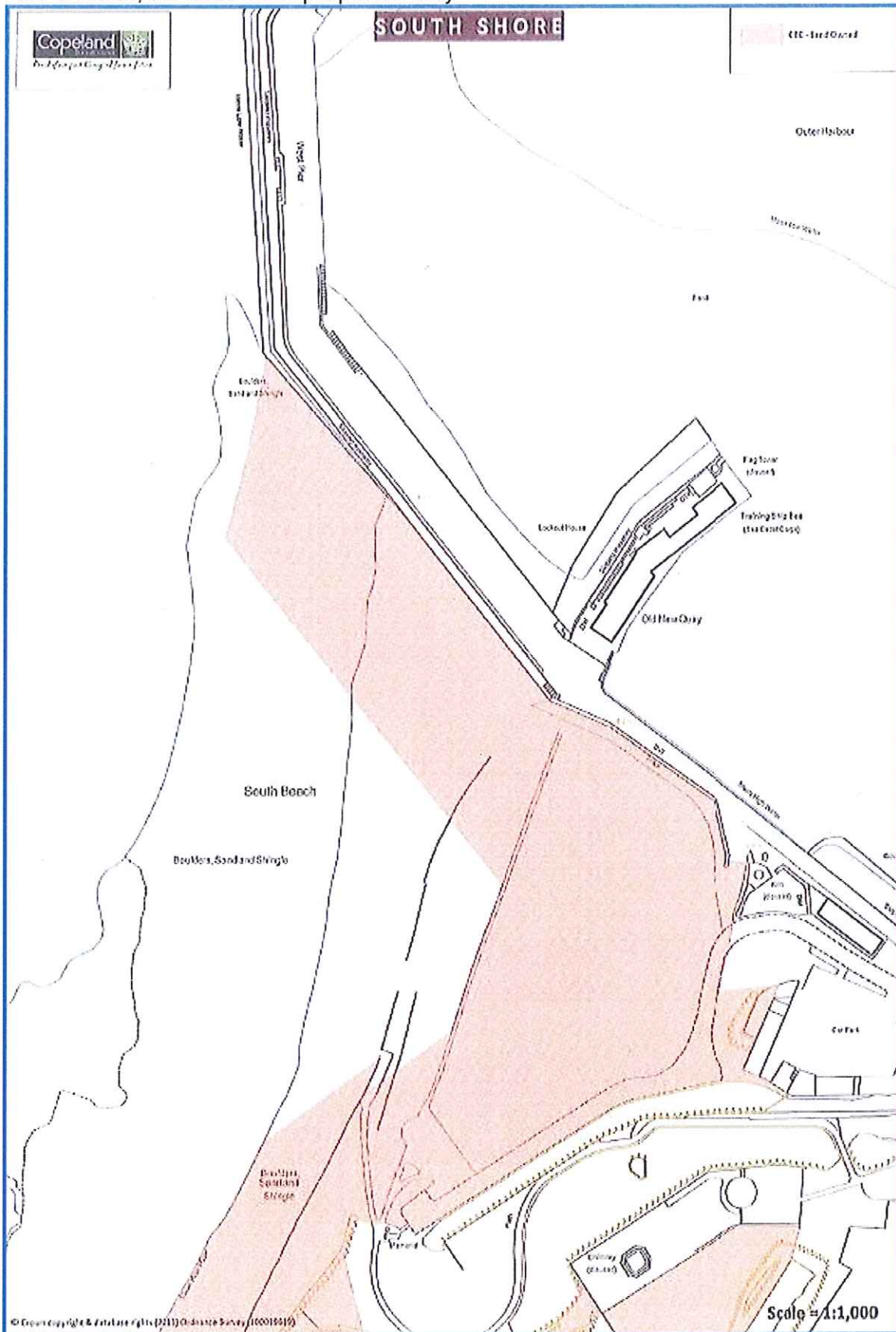


D2 – SALTOM/HAIG PHOTOGRAPH

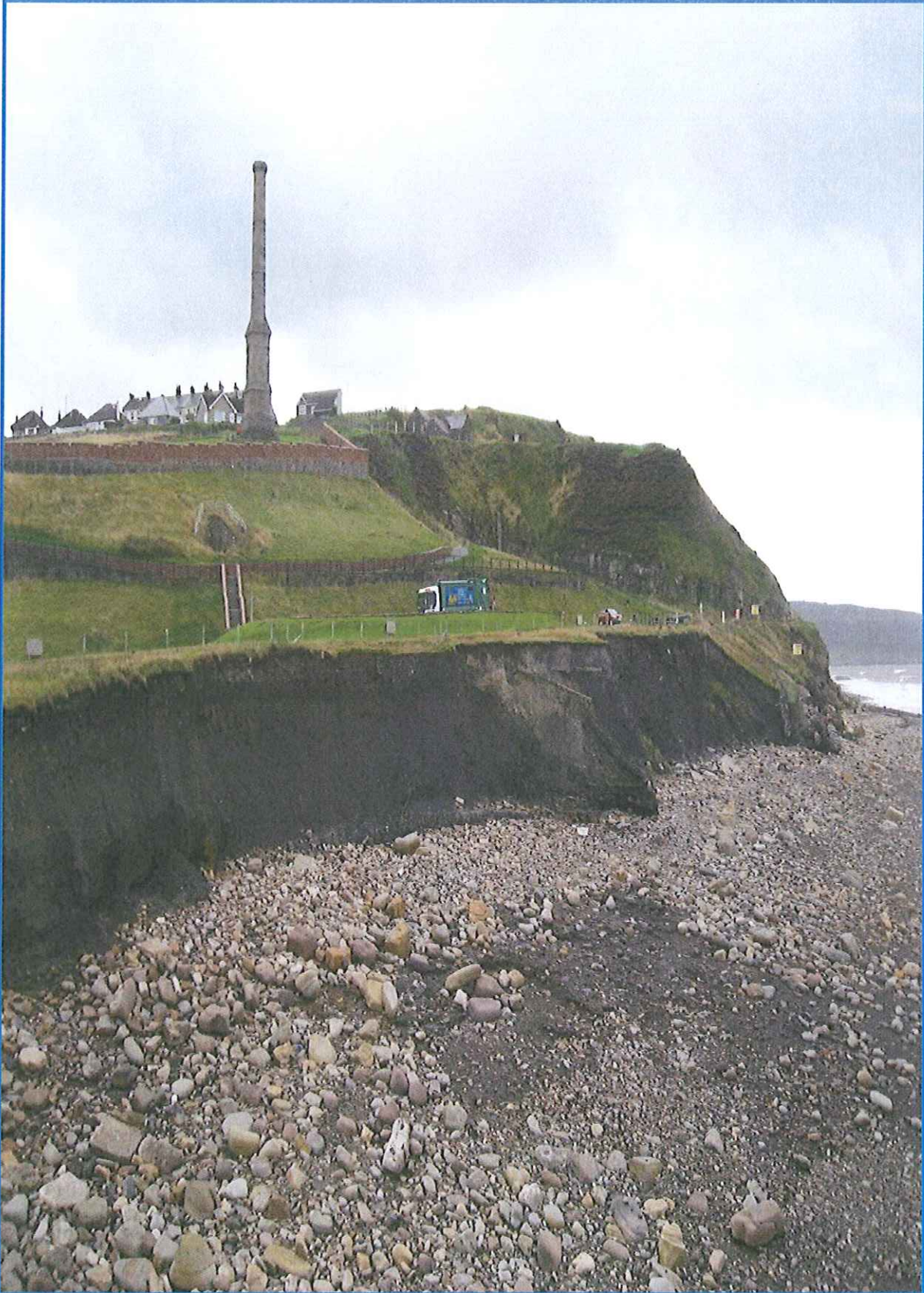


E1 – SOUTH BEACH OWNERSHIP PLAN

Not to scale, for illustrative purposes only



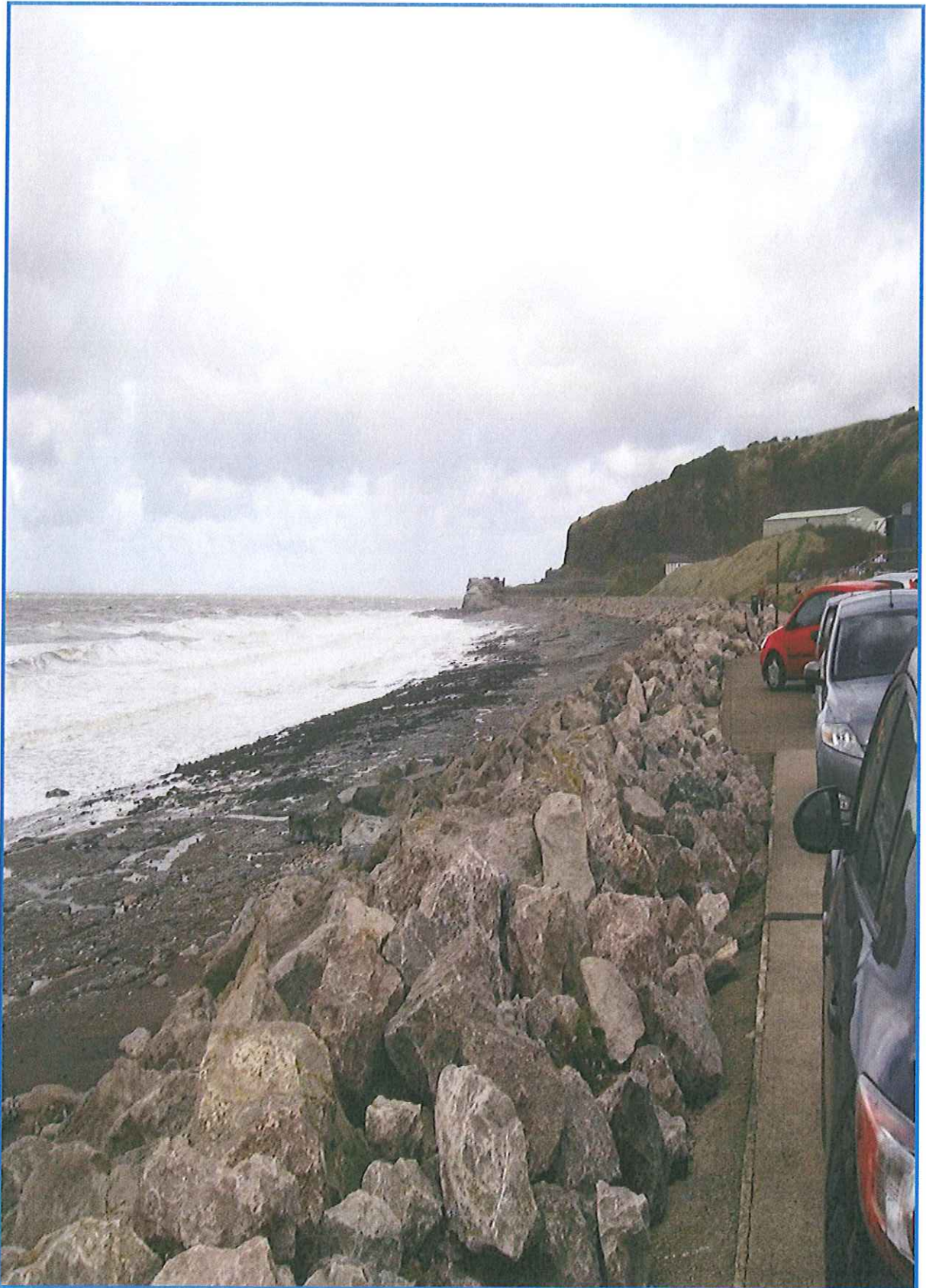
E2 – SOUTH BEACH PHOTOGRAPH



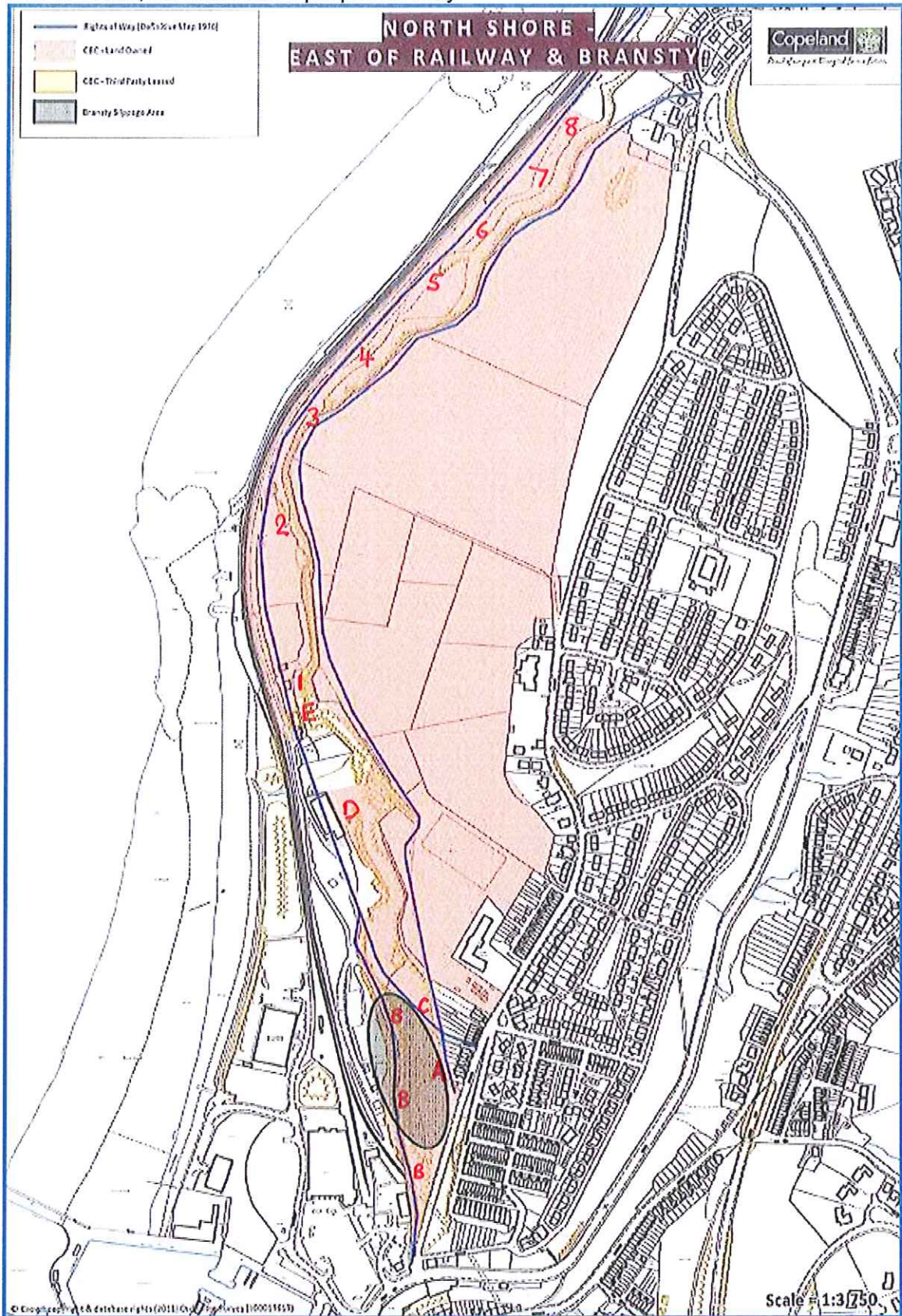
F1 – NORTH SHORE, WEST OF RAILWAY, OWNERSHIP PLAN
Not to scale, for illustrative purposes only



F2 – NORTH SHORE, WEST OF RAILWAY, PHOTOGRAPH



G1 - NORTH SHORE, EAST OF RAILWAY AND BRANSTY, OWNERSHIP PLAN
 Not to scale, for illustrative purposes only



G2 – NORTH SHORE, EAST OF RAILWAY AND BRANSTY, PHOTOGRAPH
East of railway looking south

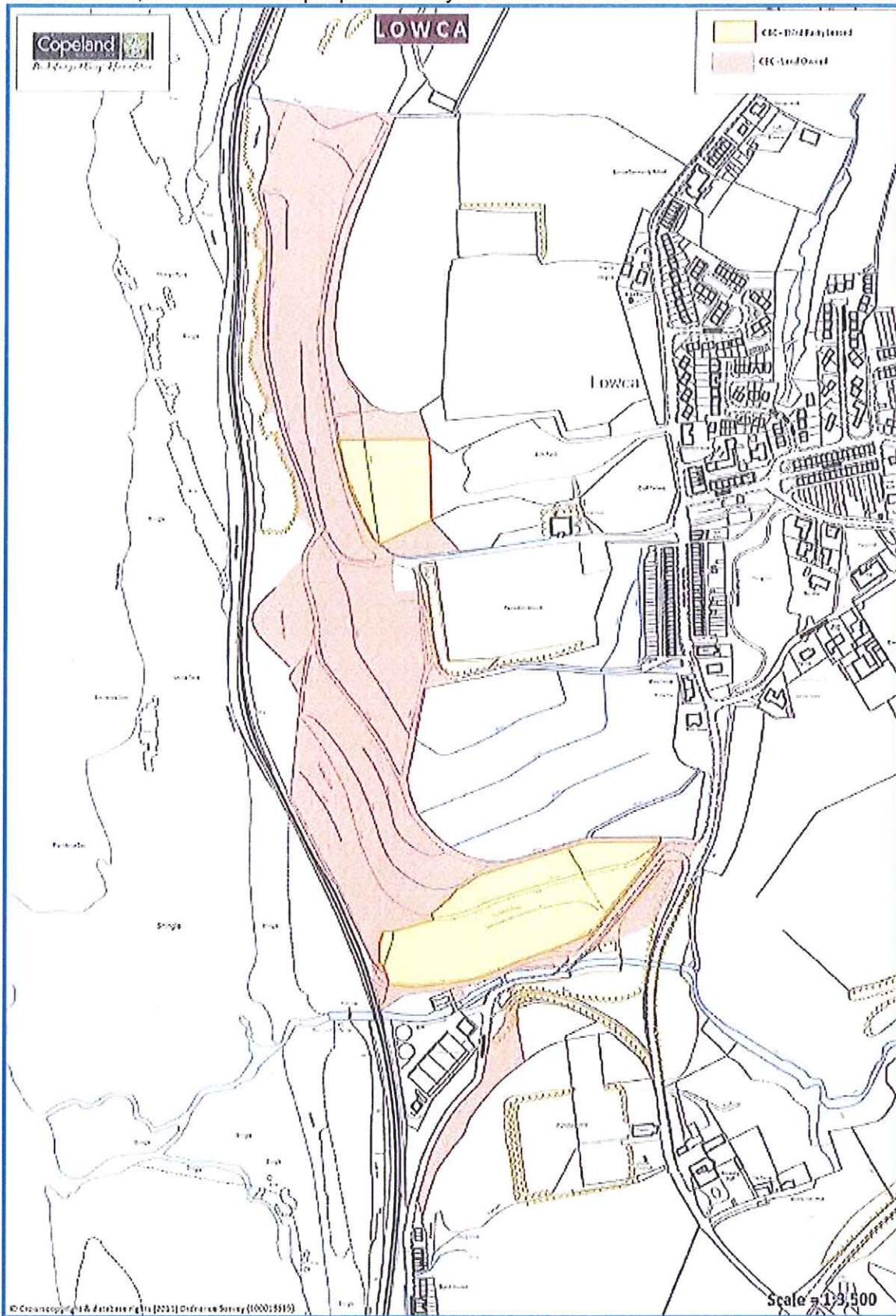


East of railway looking north



H1 – LOWCA, PLAN

Not to scale, for illustrative purposes only



H2 – LOWCA, PHOTOGRAPH



APPENDIX 2: PREVIOUS CONSULTANTS' REPORTS

List of relevant previous consultant's reports:

Haverigg:	None.
Seascale:	None.
St Bees:	None.
Haig/Saltom:	<ol style="list-style-type: none">1. Geo-morphological desk top study – May 2003;2. Mouchel Parkman – February-March 2004;3. Entec UK Limited Saltom Colliery, Whitehaven- structural engineer's report – July 2007; and4. Parkman – 2009.
South Beach:	British Geological Survey – January 2007.
North Shore West:	None.
North Shore East (Bransty)	<ol style="list-style-type: none">1. Atkins – Wagon Road to Bank Yard Road Rock Face Inspection and Rock Fall Risk Assessment – March 2010;2. Geoenvironmental Risk Solutions Limited Bransty Land Slip Ground Investigations – 13th October 2010; and3. Atkins – Bransty Landslip Outline Remedial Measures Report – October 2010;
Lowca:	None.