

Isles of Scilly Sea Defences Environmental Statement Addendum

Volume II: Appendices

Final Report

April 2023

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**Council of the
ISLES OF SCILLY**



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Revision history

Revision Ref/Date	Amendments	Issued to
V1.0 April 2023		Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly. JBA Consulting carried out this work.

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Reviewed by Kirsten Holland BSc MCIfA
 Technical Director

Purpose

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EIA Quality Mark

This Environmental Statement, and the Environmental Impact Assessment (EIA) carried out to identify the significant environmental effects of the proposed development, was undertaken in line with the EIA Quality Mark Commitments.

The EIA Quality Mark is a voluntary scheme, operated by IEMA, through which EIA activity is independently reviewed, on an annual basis, to ensure it delivers excellence in the following areas:

- *EIA Management*
- *EIA Team Capabilities*
- *EIA Regulatory Compliance*
- *EIA Context & Influence*
- *EIA Content*
- *EIA Presentation*
- *Improving EIA practice*



To find out more about the EIA Quality Mark please visit: <http://www.iema.net/eia-quality-mark/>

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1 Introduction

1.1 Overview

- 1.1.1 The purpose of this Environmental Statement (ES) Addendum is to present an assessment of any new or different significant effects that are likely to result from proposed development changes to support the Council of the Isles of Scilly and consultees in developing an informed view of the likely significant effects of the Proposed Development.
- 1.1.2 This ES Addendum has been prepared to update the ES in order to provide the Council of the Isles of Scilly with additional information. The scope of this additional information is in response to comments made by statutory consultees. Updates to the proposed development design have also been made in two locations in response to these comments.
- 1.1.3 This ES Addendum should be read in conjunction with the ES submitted in November 2022.
- 1.1.4 This is Volume II of the ES Addendum which presents any updates to the appendices submitted as Environmental Statement Volume II in November 2022.

2 Updated Appendices

2.1 Overview

- 2.1.1 The below section presents an overview of the updates made to the appendices submitted as part of Volume II of the Environmental Statement 2022. Where updates have been made, the updated appendices are presented below.

2.2 Updates

Appendix 2.1: Design Drawings

- 2.2.1 The design drawings for the proposed works remain the same for works across seven sites: Great Popplestone, Stinking Porth, Green Bay, Kitchen Porth, Porth Killier, Porth Coose and St Martin's.
- 2.2.2 The proposed designs for Great Porth (Great Par) North of Great Carn and Periglis have been updated. Updated design drawings are presented below.

Appendix 2.2: Outline Construction Environmental Management Plan

- 2.2.3 The Outline Construction Environmental Management Plan submitted as part of the Environmental Statement in November 2022 has been updated to reflect updated mitigation measures incorporated into the environmental assessments (as detailed in Volume I of this ES Addendum). A Framework Site Waste Management Plan has also been included in response to comments from the Environment Agency relating to management of waste.

Appendix 3.1: EIA screening opinion

2.2.4 The EIA screening opinion for the proposed works, included as Appendix 3.1 in the ES submitted in November 2022 remains valid.

Appendix 3.1: EIA scoping opinion

2.2.5 The EIA scoping opinion for the proposed works, included as Appendix 3.1 in the ES submitted in November 2022 remains valid.

Appendix 4.1: Tidal Diamond Data

2.2.6 The tidal diamond data submitted with the Environmental Statement in November 2022 remains valid.

Appendices 5.1a: Great Popplestone HRA – 5.1i: Lower Town Beach HRA

2.2.7 All of the HRAs submitted as part of Appendix 5.1 (a-i) have been updated to reflect comments received from Natural England. These updates include the provision of a clear map showing the location of the development in relation to the features of the designated sites.

2.2.8 The updated HRA assessments also include reference to the updated Special Protection Area designation and consequently an updated assessment of the features, including consideration of potential impacts of the proposed developments on the recovery potential of the SPA.

2.2.9 The updated HRA assessments also include mitigation measures for the management of biosecurity risks, as covered in Volume I of the ES submitted in November 2022. The HRAs have also been updated to recognise the impact that working on multiple sites could have on bird assemblages, and the potential mitigation measures to be followed. Mitigation measures have also been included for any instance where a seal is hauled out on the beach or foreshore within 200m of the works.

2.2.10 The potential impacts of coastal squeeze on the habitat have also been considered.

Appendix 6.1: Study area for LVIA, photographs and viewpoints

2.2.11 This appendix presents the study area for LVIA, photographs and viewpoints and therefore remains valid. There have not been any changes made to Appendix 6.1 since the red line boundary and design changes are too minimal to affect the information contained within the appendix.

Appendix 6.2: Existing Landscape Character

2.2.12 This appendix presents the existing landscape character and therefore remains valid. There have not been any changes made to Appendix 6.2 since the red line boundary and design changes are too minimal to affect the information contained within the appendix.

Appendix 6.3: Topography

2.2.13 This appendix presents the topography across the sites and therefore remains valid. There have not been any changes made to Appendix 6.3 since the red line

boundary and design changes are too minimal to affect information contained within the appendix.

Appendix 6.4: Viewpoint Assessment Sheets

2.2.14 Appendix 6.4 has been updated to update Viewpoints across Bryher [Figure 6.4.8] and St Agnes [Figure 6.4.24 & 6.4.25] to reflect updated designs at Great Porth (Great Par) North of Great Carn, and Periglis. Changes elsewhere do not affect the information in any other Viewpoint Assessment Sheets, therefore these remain unchanged.

Appendix 7.1: Historic Environment Figures

2.2.15 The historic environment figures present the locations of known heritage assets, events and landscapes against the red line boundary. The figures have been updated to reflect the changes to the red line boundary on Bryher and St Martin's. There have been no changes to the figures for St Agnes.

Appendix 7.2: Gazetteers

2.2.16 This appendix presents designated and non-designated assets and events across the islands of Bryher, St Agnes and St Martin's and therefore remains valid.

Appendix 7.3: Site Visit Photographs

2.2.17 The site visit was undertaken in November 2021 and the photographs from presented in the Environmental Statement submitted in November 2022 remain valid.

2.3 Additional Appendices

Feedback from consultees

2.3.1 A summary of feedback provided by consultees during the planning determination is contained in Appendix 1.1.

Marine Conservation Zone Assessments

2.3.2 Marine conservation zone assessments have been undertaken to identify any potential pathways by which impacts from the development would affect the interest features of the site.

2.3.3 An MCZ assessment has been prepared to consider the potential impacts of the proposed works at St Martin's on Tean MCZ, and the potential impacts of the proposed works at St Agnes on Smith Sound Tide Swept Channel MCZ. These have been included as Appendix 5.2a and 5.2b

Water Framework Directive Assessments

2.3.4 Water Framework Directive (WFD) Assessments have been undertaken to consider the impacts of the proposed development on surface water quality in general, especially as the Isles of Scilly lie within the WFD TrAC waterbody Scilly Isles. These have been included as appendix 5.3a, 5.3b and 5.3c.

Biodiversity Net Gain Addendum

2.3.5 Opportunities for Biodiversity Net Gain have been discussed with the Isles of Scilly Wildlife Trust. An addendum was produced to consider likely opportunities for compensatory habitat, enhancement and biodiversity net gain following these discussions. This has been included as Appendix 5.4.

3 ES Addendum Appendices

Appendix 1.1 Summary of consultee comments relevant to ES Addendum

Consultee	Date	Topic	Comment	Where/how addressed in ES
Bryher				
Department for Levelling up, Housing and Communities	November 2022	Environmental Statement	Receipt of the ES acknowledged and confirmed no comments on it.	n/a
Historic England	December 2022	Summary	The current application would cause substantial harm to Scheduled Monument No. 1016173 Gig shed on the north coast of Great Porth through its removal to quarry for rock revetments. National policy, both the NPPF and government policy for Scheduled Monuments, is clear that planning permission and Scheduled Monument Consent (SMC) for such works should only be granted in wholly exceptional circumstances. At present, the clear and convincing case for such circumstances is not made in respect of the gig shed. It is understood that the applicant is presently commissioning heritage impact assessments (HIAs) for the proposed works within the Scheduled Monuments and is also exploring other options for the work at Great Porth that avoids or minimises impacts to the scheduled gig shed.	Revised design for Great Porth (Great Par) North of Great Carn has been produced by HR Wallingford to reduce overlap with the scheduled gig shed. This revised design has been assessed within the ES Addendum. The Applicant is applying for SMC which will be supported by a separate HIA. Balance to be achieved between minimising coastal squeeze and avoiding damage to the Scheduled Monument.
		Scheduled Monument Consent	Historic England are supportive of the principle of the works; however, they lie within the boundaries of three Scheduled Monuments – No. s 1016173 Gig shed on the north coast of Great Porth, Bryher; 1014987 Prehistoric field system and post-medieval quay in Great Porth, Bryher; and 1014989 Prehistoric field system and Romano-British cist in Green Bay, Bryher.	Revised design for Great Porth (Great Par) North of Great Carn has been produced by HR Wallingford to reduce overlap with the scheduled gig shed. This revised design has been assessed within the ES

Consultee	Date	Topic	Comment	Where/how addressed in ES
			As such, SMC will be required in addition to planning permission.	Addendum. The access track at Green Bay has been amended to avoid overlap with the Scheduled Monument.
		Scheduled Monument Consent	At present, the application is not supported by HIAs for the works within scheduled areas, which will be required to allow an informed consideration of heritage significance and potential impacts. Any application for SMC for the proposed works would be invalid in the absence of thorough and targeted HIAs for each of the monuments. In their present form, the proposed works would not gain SMC and Historic England would be obliged to object to this planning application.	Applicant procuring HIAs to support SMC application. Revised design for Great Porth (Great Par) North of Great Carn has been produced by HR Wallingford to reduce overlap with the scheduled gig shed. This revised design has been assessed within the ES Addendum.
		Gig shed Scheduled Monument	As currently proposed, the works impacting upon the scheduled gig shed would cause substantial harm to its significance through the removal of all or much of its masonry fabric and archaeological remains. Such works would need to be clearly and convincingly justified by demonstrating the wholly exceptional nature of the proposals with the impetus being on the applicant to avoid or minimise harm. In their present form, the works would not gain SMC and Historic England would be obliged to object. Recommended that the necessary HIAs are supplied and amended proposals for the gig shed site at Great Porth as amendments to the application.	Applicant procuring HIAs to support SMC application. Revised design for Great Porth (Great Par) North of Great Carn has been produced by HR Wallingford to reduce overlap with the scheduled gig shed. This revised design has been assessed within the ES Addendum.

Consultee	Date	Topic	Comment	Where/how addressed in ES
Marine Management Organisation	November 2022	Marine Plan policies	MMO advise that consideration is given to any relevant policies within the South West Marine Plan documents in regard to areas that may impact upon the marine environment. Any developments that will affect the marine and coastal area will require a marine licence.	Consideration of marine plan policies is detailed in Section 2.3.3 of the submitted ES.
Cornwall Archaeological Unit	November 2022	Summary	<p>Cornwall Archaeological Unit consider it prudent that an archaeological watching brief should be carried out during the early stages of groundworks, undertaken by a suitably qualified organisation or individual.</p> <p>No groundworks for the sea defences at Green Bay, Stinking Porth and Great Porth shall take place until a programme of archaeological recording work including a Written Scheme of Investigation has been submitted to and approved by the local planning authority in writing.</p> <p>A pre-commencement condition is necessary in this instance due to the need to ensure that a programme and methodology of site investigation and recording of archaeological features is undertaken before physical works commence on site.</p>	Requirement for Written Scheme of Investigation to be submitted to and approved by the local planning authority in writing included in the Outline CEMP (Appendix 2.2).
Natural England	December 2022	Summary	Natural England objects to the proposal as it is considered it could have an adverse effect on the integrity of the Isles of Scilly Special Protection Area and the	Further information included in the HRAs to justify why adverse effects on the Isles of

Consultee	Date	Topic	Comment	Where/how addressed in ES
			Isles of Scilly complex Special Area of Conservation (SAC). The proposals could damage or destroy the interest features for which Pool of Bryher and Popplestone Bank Site of Special Scientific Interest (SSSI) has been notified.	Scilly SPA and SAC are not anticipated.
	January 2023	Coastal squeeze	There is currently insufficient information for all works proposed on Bryher to determine the impacts of coastal squeeze on the features of the SAC.	Assessment of coastal squeeze has been undertaken in the ES. Consideration of the impacts of coastal squeeze on features of the SAC have been included in the HRAs.
		Access tracks	Access tracks, site compounds and material storage areas should be assessed, allocated and clearly marked on maps. These should be in areas that avoid impacts to the vegetation for which the site is designated. Natural England advise to carry out the required surveys (at the appropriate time of year) and detail the proposed mitigation and further monitoring if required, which they request to be consulted on.	Access tracks, site compounds and material storage areas are shown on Figures 2-28, 2-29 and 2-30 of volume I of the submitted ES. The submitted ES states that an ECoW will be present to set out all construction routes to avoid SSSI vegetation.
		Great Popplestone	The impacts of removal of rock armour from the upper beach/foredune should be discussed/assessed in the ES. A plan showing the location and details of the proposed board walk needs to be provided and included as part of the assessment.	The impacts of removal of rock armour from the upper beach/foreshore has been discussed in Section 4: Coastal Processes of the submitted ES. The potential boardwalk is removed from the

Consultee	Date	Topic	Comment	Where/how addressed in ES
				proposed works at present.
		Green Bay	Planting the constructed dune with native species could apply here.	Comment noted, not applicable to the ES.
		Kitchen Porth	If use of alternative access track required, Natural England requests consultation on the survey results and translocation plan by condition, before any works commence.	Comment noted, not applicable to the ES.
Environment Agency	December 2022	Summary	Environment Agency object to the proposed scheme as the proposals are likely to impact on priority habitats. The Environment Agency are satisfied with the proposals with regard to flood risk. The Environment Agency note the proposals may be contrary to SMP policy.	Further detail on potential impacts on priority habitats contained within Section 5 of the ES Addendum. Further details of SMP policy contained within Section 4 of the ES Addendum.
St Agnes				
Department for Levelling up, Housing and Communities	November 2022	Environmental Statement	Receipt of the ES acknowledged and confirmed no comments on it.	n/a
Historic England	December 2022	Scheduled Monument	Historic England are concerned that the works have the potential to inadvertently cause harm to Scheduled Monument No. 1014998 prehistoric settlement and field system at Porth Killier, St Agnes, through repeated movement of heavy plant and vehicles across the trackway which runs through the monument. Historic England request a Construction Environmental Management Plan to be set out to detail how vehicle movements will be managed to avoid harm.	An outline Construction Environmental Management Plan is included as Appendix 2.2. It is anticipated that the appointed contractor will produce a full CEMP setting out detail of management of vehicle movements.

Consultee	Date	Topic	Comment	Where/how addressed in ES
Cornwall Archaeological Unit	December 2022	Scheduled Monument	CAU advise it is unlikely for the proposed works at Porth Coose and Periglis to disturb significance archaeological remains. The implications of the proposed works at Porth Killier should be discussed with Historic England.	Comment noted, not applicable to the ES.
Natural England	December 2022	Summary	Natural England objects to the proposal as it is considered it could have an adverse effect on the integrity of the Isles of Scilly Special Protection Area and the Isles of Scilly complex SAC. The proposals could damage or destroy the interest features for which Big Pool & Browarth Point (St Agnes) Site of Special Scientific Interest (SSSI) has been notified.	Further consideration of the impacts on the Isles of Scilly SPA and SAC contained within the HRAs. Assessment of potential impact on the SSSI contained within Section 5 of the ES Addendum.
	January 2023	Coastal squeeze	There is currently insufficient information for all works proposed on St Agnes to determine the impacts of coastal squeeze on the features of the SAC.	Assessment of coastal squeeze has been undertaken in the ES. Consideration of the impacts of coastal squeeze on features of the SAC have been included in the HRAs.
		SSSI	Natural England note there appears to be a misinterpretation of the extent of the SSSI. For all sites the SSSI extent is down to MHWS and therefore includes the upper beach and dune ridge. The direct impacts of defence construction on SSSI vascular plant assemblages (specifically those on the upper beach and dune ridge) have not been fully considered or mitigated for any of the sites. Natural England also advise planting with native dune species on the constructed dunes at Periglis and Porth Coose. Impacts	Updated detail relating to the SSSI extent contained within Section 5 of the ES Addendum.

Consultee	Date	Topic	Comment	Where/how addressed in ES
			of erosion on strandline vegetation within the SSSI needed to be considered.	
		Access tracks	A vegetation survey should be carried out detailing and quantifying the loss of the SSSI site's features from all site compounds and access roads. Site compounds and access roads should avoid the SSSI completely and if this is not possible, seek the least impactful alternative. It is advised to carry out the required surveys and proposed mitigation and monitoring if required.	Noted. Details contained within Section 5 of the submitted ES.
Environment Agency	December 2022	Scheme design	The Environment Agency objected to the proposed scheme and recommended a change in design. Concerns that the design of the Periglis works will not provide the intended protection for the drinking water supply and will be prone to undermining and failure.	Baseline in ES updated to reflect accurate baseline of accretion. Design changed to move geobags in dune ridge back 3m landwards and ES updated accordingly.
		Scheme design	The Environment Agency had concerns over the design at Porth Coose and the potential resilience of the rock bag design.	Consideration of the standard of protection and design life included within the Environmental Statement.
		Flood Risk	There are no flood risk objections. The scheme offers protection of Big Pool for the next 25 years along with reducing flood risk to a number of properties and infrastructure. Consideration needs to be made on how the aspirations of the SMP will continue beyond 25 years of the scheme.	Further consideration of the SMP contained within Chapter 4 of the ES Addendum.
		Groundwater	The Environment Agency support the principle of protecting the aquifers from infiltration by seawater.	Noted.
		waste	The Environment Agency note the proposed activity needs to identify	A Framework Site Waste Management Plan has

Consultee	Date	Topic	Comment	Where/how addressed in ES
			and correctly manage any waste produced as a result of work on the islands.	been included in Appendix 2.2 It is considered that the appointed contractor will adopt a full Site Waste Management Plan.
		Water quality	The Environment Agency support the proposals to protect drinking waters and request an assessment as to how the applicant will ensure no adverse impact on water quality in general.	Water Framework Directive Assessment have been undertaken to consider the potential impacts on water quality across the islands (Appendices 5.3a, 5.3b and 5.3c).
St Martin's				
Natural England	January 2023	SSSI	The ES suggests St Martin's Sedimentary Shore is only important for its geological interest which is not the case. St Martin's flats form the largest area of sand exposed at low water within the Isles of Scilly.	An updated description of St Martin's SSSI is included in Section 5 of the ES Addendum.
		MCZ	The works are sited near to the Isles of Scilly Tean Marine Conservation Zone. Natural England advise that an MCZ assessment should be carried out to identify any potential pathway by which impacts from the development would affect interest features of the site.	An MCZ assessment has been produced for St Martin's and St Agnes (Appendices 5.2a and 5.2b).
South West Water	November 2022	Summary	No comment to make.	n/a
Department for Levelling up, Housing and Communities	November 2022	Environmental Statement	Receipt of the ES acknowledged and confirmed no comments on it.	n/a
Historic England	December 2022	Summary	No comment	n/a

Consultee	Date	Topic	Comment	Where/how addressed in ES
Cornwall Archaeological Unit	December 2022	Summary	Considered unlikely that significant archaeological remains will be disturbed by groundworks. No archaeological mitigation is required.	n/a
Environment Agency	December 2022	Summary	No comment	n/a
All sites				
Natural England	December 2022	HRAs	Natural England advise that the assessment is not sufficiently rigorous or robust to justify the conclusion that the proposal will not result in adverse effects on the integrity of the sites in question. The assessments provided contain insufficient information regarding the impacts of the proposed coastal defence works on the designated features and therefore applications should not be approved until it has been made 'certain' that they will not have an adverse effect on the site integrity for the above sites.	HRAs have been updated to contain a map of the development of any sites in relation to the features of the designated sites and site boundaries.
Natural England	January 2023	Marine licensing	Natural England understand that the MMO have deferred regulatory responsibilities to the Council of the Isles of Scilly and have advised they assess if the proposed works are consistent with Marine Plan policies.	Consideration of the Marine Plan policies is contained within section 2.2.3 of the submitted ES.
		Shoreline Management Plan	Natural England questions if the proposed defences conform to SMP policy. Where any sub-policy under NAI details that local activity can be permitted, justification should be sought as to how the coastal defence works related to the overarching policy.	Further discussion relating to SMP policy is included in Section 4 of the ES Addendum.
		CEMP	Natural England notes the CEMP has been submitted as part of this application and will require updating once further assessments/information has been provided.	Outline CEMP has been updated to reflect additional mitigation / recommendations (Appendix 2.2).

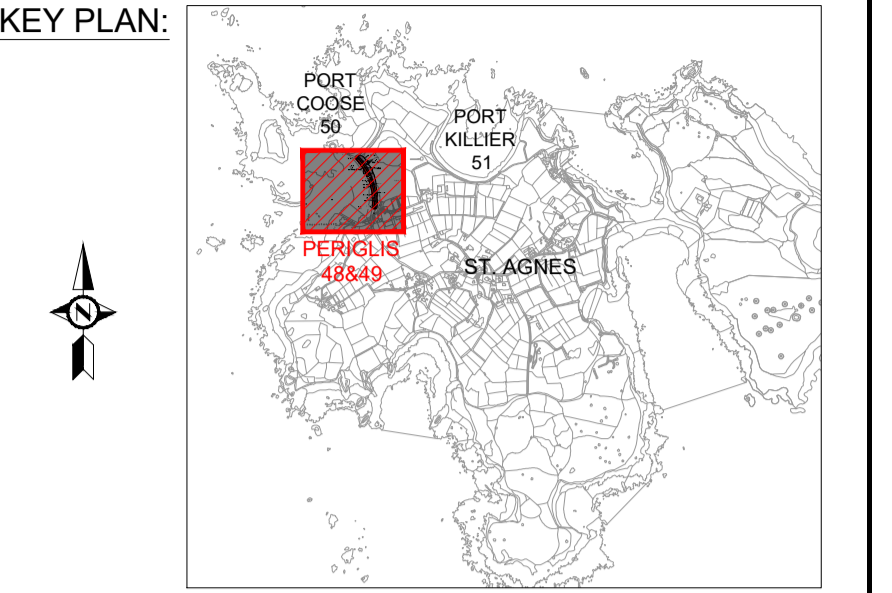
Consultee	Date	Topic	Comment	Where/how addressed in ES
		Priority habitats and species	The ES should thoroughly assess the impact of the proposal on protected species and the impact of the proposals on habitats and/or species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List, published under S41 of the Natural Environment and Rural Communities (NERC) Act 2006.	This is contained within Chapter 5 of the submitted ES, with further information contained within Section 5 of the ES Addendum.
		Habitat loss	Natural England advise further detail to be provided on how any loss of priority habitat will be avoided, mitigated or compensated. If net loss cannot be avoided or mitigated, appropriate compensation should be secured including biodiversity enhancement and net gain where possible.	Opportunities for Biodiversity Net Gain (BNG) have been discussed with the CEO of the Wildlife Trust to ensure suitable and useful actions are taken. Consideration of these is included in Appendix 5.4.
		Net gain	Natural England are disappointed to see no quantified Biodiversity Net Gains part of the proposed development.	
		Sequential working	Natural England understand sequential working might not be possible and request further clarification on the viability of this proposed mitigation measure.	EIA and HRAs updated to reflect that where parallel working is preferred to meet project delivery scheduled, it will be organised so that works do not take place on adjacent beaches.
		Seals	The HRA should include the mitigation that works will not take place if a seal is hauled out on the beach.	EIA and HRAs updated to include the following mitigation measure: works will not take place if a seal is hauled out on the beach or foreshore within 200m of the works. Works will not resume until the seal has

Consultee	Date	Topic	Comment	Where/how addressed in ES
				moved on its own accord.
		SPA designation	The HRA assessments do not refer to the updated SPA designation and consequently the features are not assessed correctly.	HRA assessments updated to reflect updated SPA designations and the potential impacts of the proposals on recovery potential.
		Biosecurity risks	The HRA does not consider biosecurity risks appropriately. Introduction of mammalian invasive species presents a significant risk to the SPA but this is not covered in the HRA.	Biosecurity risk represented by rats already covered in ES Volume I. This information has also been included in the HRAs.

Appendix 2.1 Revised Design Drawings



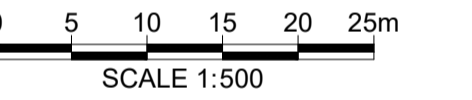
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- NOTES:**
- ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
 - HORIZONTAL DATUM IS REFERENCED TO OSGB 1936 BRITISH NATIONAL GRID.
 - VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
 - SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED SURVEYS.
 - FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
 - FOR TYPICAL SECTIONS REFER TO DRAWING No. DKR6499-110-D310.
 - 2020 LIDAR DATA ADJUSTED TO 2011 BASELINE TO BRING IN LINE WITH JBA WAVES STUDY.
 - © CROWN COPYRIGHT AND DATABASE RIGHTS 2022 OS100024679.
 - EXISTING CULVERT (SWRCMP_PCO_067) INTAKE AND OUTFALL STRUCTURES TO BE PROTECTED DURING WORKS

- LEGEND:**
- FILL
 - GEOBAG
 - FOOTPATH
 - MHWS= 2.77 mOD

SP	Easting	Northing	Elevation
SP1	87.7654	8.3701	7.500
SP2	87.7624	8.4369	7.500
SP3	87.7511	8.4717	7.500
SP4	87.7088	8.5376	7.500



03	ISSUED FOR CONSTRUCTION	TGM	AGC	AUO	07 MAR 23
02	ISSUED FOR APPROVAL	TGM	AGC	AUO	22 DEC 22
01	ISSUED FOR APPROVAL	WST	AGC	AUO	14 SEP 22
REV	DRAWING STATUS	DRN	APPR	AUTH.	DATE

CLIENT:
THE COUNCIL OF THE ISLES OF SCILLY

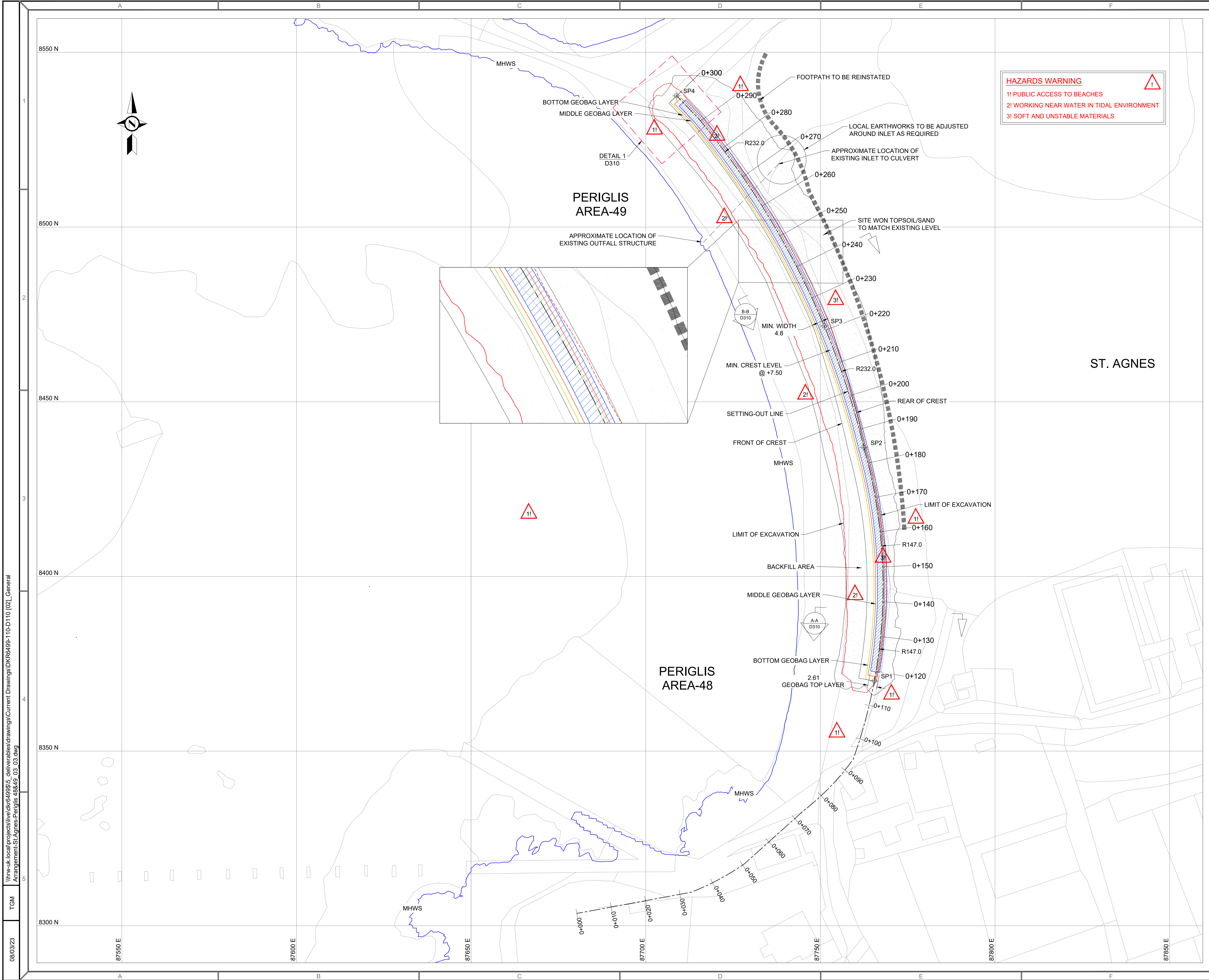
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PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

DRAWING TITLE:
**ST. AGNES 48&49 PERIGLIS
GENERAL ARRANGEMENT LAYOUT**

SCALE: 1:500 SHEET SIZE: A1

DRAWING No: DKR6499-110-D110 REV: 03



I:\hr\uk\local\projects\110\DKR6499-110-D110 [02]_General Arrangement-St. Agnes-Periglis 48&49_03.dwg
 TGM
 08/03/23

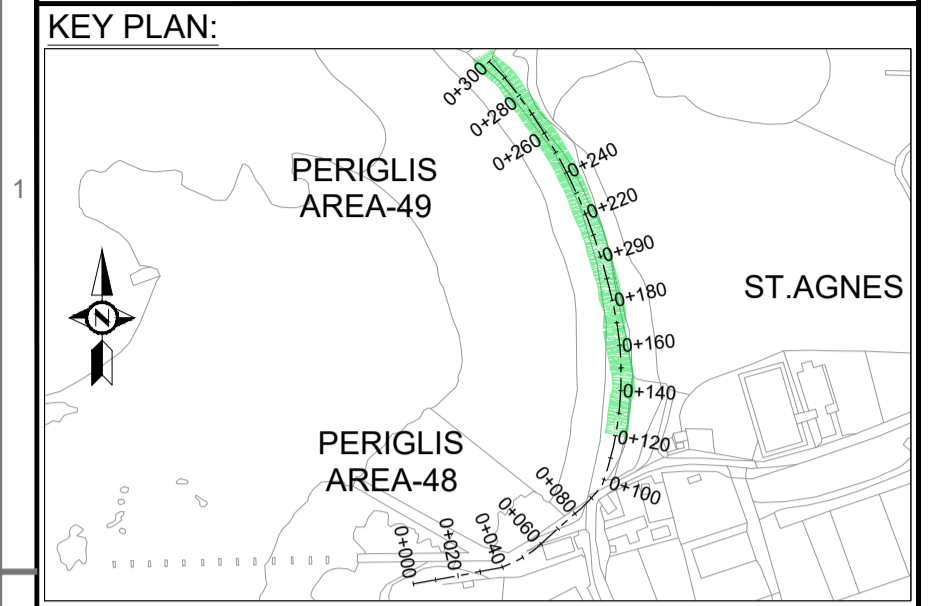
- ALL EXCAVATED MATERIAL TO BE SCREENED AND STOCKPILED.
- MATERIALS TO BE RE-USED ACCORDING TO SIZE:
 - BOULDERS AND COBBLES GREATER THAN 200MM TO BE PLACED AT THE SEAWARD TOE AND ON THE SEAWARD FACE OF THE BANK AS INDICATED.
 - GRANULAR MATERIAL WITH D50 BETWEEN 0.4MM AND 200MM TO BE USED AS FILL.
 - GRANULAR MATERIAL WITH D50 BETWEEN 0.06MM AND 0.4MM TO BE PLACED AS LANDSIDE FILL.
 - MATERIAL CONTAINING FINES WITH D50 LESS THAN 0.06MM TO BE DISPOSED LOCALLY. LOCATION TO BE INSTRUCTED BY THE ENGINEER.

- EXISTING LOCAL MATERIAL USED AS BLINDING OVER THE EXISTING GROUND TO PROVIDE A CLEAN, LEVEL AND DRY WORKING SURFACE.
- CONTRACTOR TO MAKE SURE THAT ANY MATERIAL WHICH WILL BE IN CONTACT WITH THE GEOTEXTILE SHALL NOT HAVE PROTRUSIONS WHICH ARE LIKELY TO DAMAGE THE GEOTEXTILE DURING INSTALLATION OR IN SERVICE.
- CONSTRUCTION PLANT MUST NOT OPERATE DIRECTLY ON THE GEOTEXTILE.
- THE GEOTEXTILE SHALL BE LAID AND INSTALLED IN THE POSITIONS AND TO THE LINE AND LEVELS AS SHOWN ON THE DRAWINGS.

HAZARDS WARNING

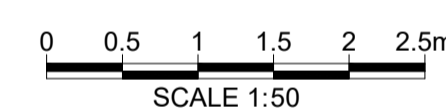
- 1! PUBLIC ACCESS TO BEACHES
- 2! WORKING NEAR WATER IN TIDAL ENVIRONMENT
- 3! SOFT AND UNSTABLE MATERIALS

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- NOTES:**
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 - HORIZONTAL DATUM IS REFERENCED TO OSGB 1936 BRITISH NATIONAL GRID.
 - VERTICAL DATUM IS IN METRES, ORDNANCE DATUM.
 - SETTING OUT POINTS TO BE AGREED FOLLOWING DETAILED SURVEYS.
 - ALL LEVELS TO BE CONFIRMED FOLLOWING ON SITE SURVEY.
 - FOR GENERAL NOTES REFER TO DRAWING No. DKR6499-000-D102.
 - FOR GENERAL ARRANGEMENT LAYOUT REFER TO DRAWING No. DKR6499-110-D110.
 - 2020 LIDAR DATA ADJUSTED TO 2011 BASELINE TO BRING IN LINE WITH JBA WAVES STUDY.
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TIDE LEVELS	
	mOD
HAT	+3.40m
MHWS	+2.77m
MHWN	+1.44m
MLWN	-0.87m
MLWS	-2.18m
LAT	-2.82m



03	ISSUED FOR CONSTRUCTION	TGM	AGC	AUO	08 MAR 23
02	ISSUED FOR APPROVAL	TGM	AGC	AUO	22 DEC 22
01	ISSUED FOR APPROVAL	PGU	AGC	AUO	09 SEP 22
REV	DRAWING STATUS	DRN	APPR	AUTH.	DATE

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PROJECT:
**ISLES OF SCILLY
DESIGN SERVICES FOR OFF ISLANDS
COASTAL EROSION DEFENCE AND
DUNE MANAGEMENT**

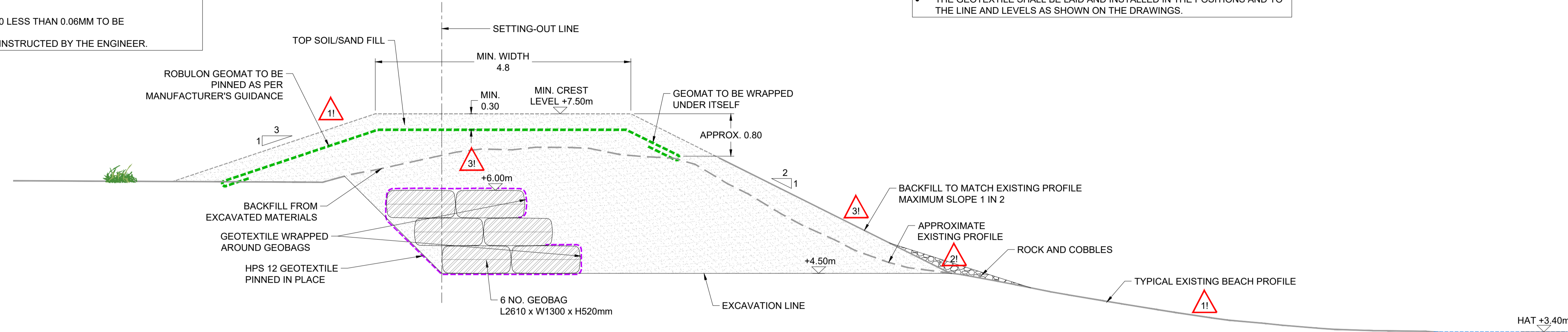
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TYPICAL SECTION AND DETAIL**

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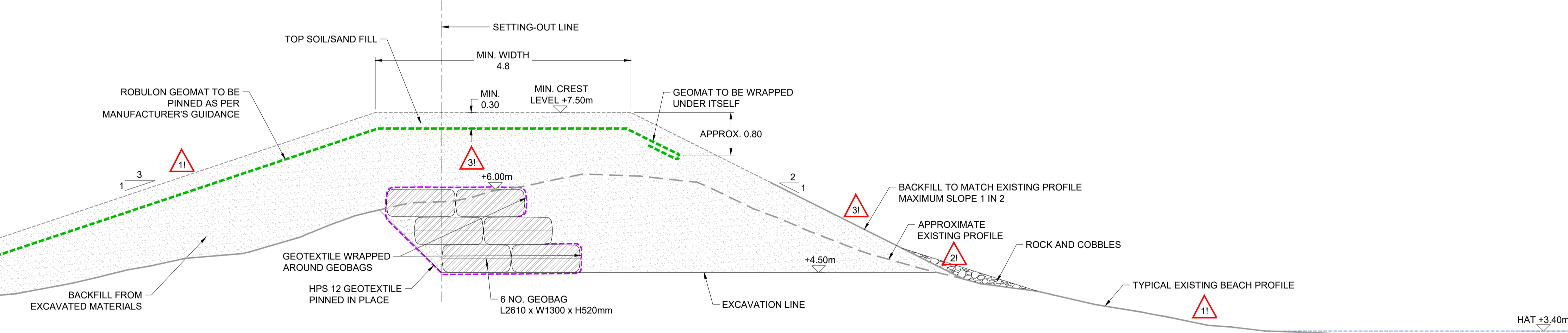
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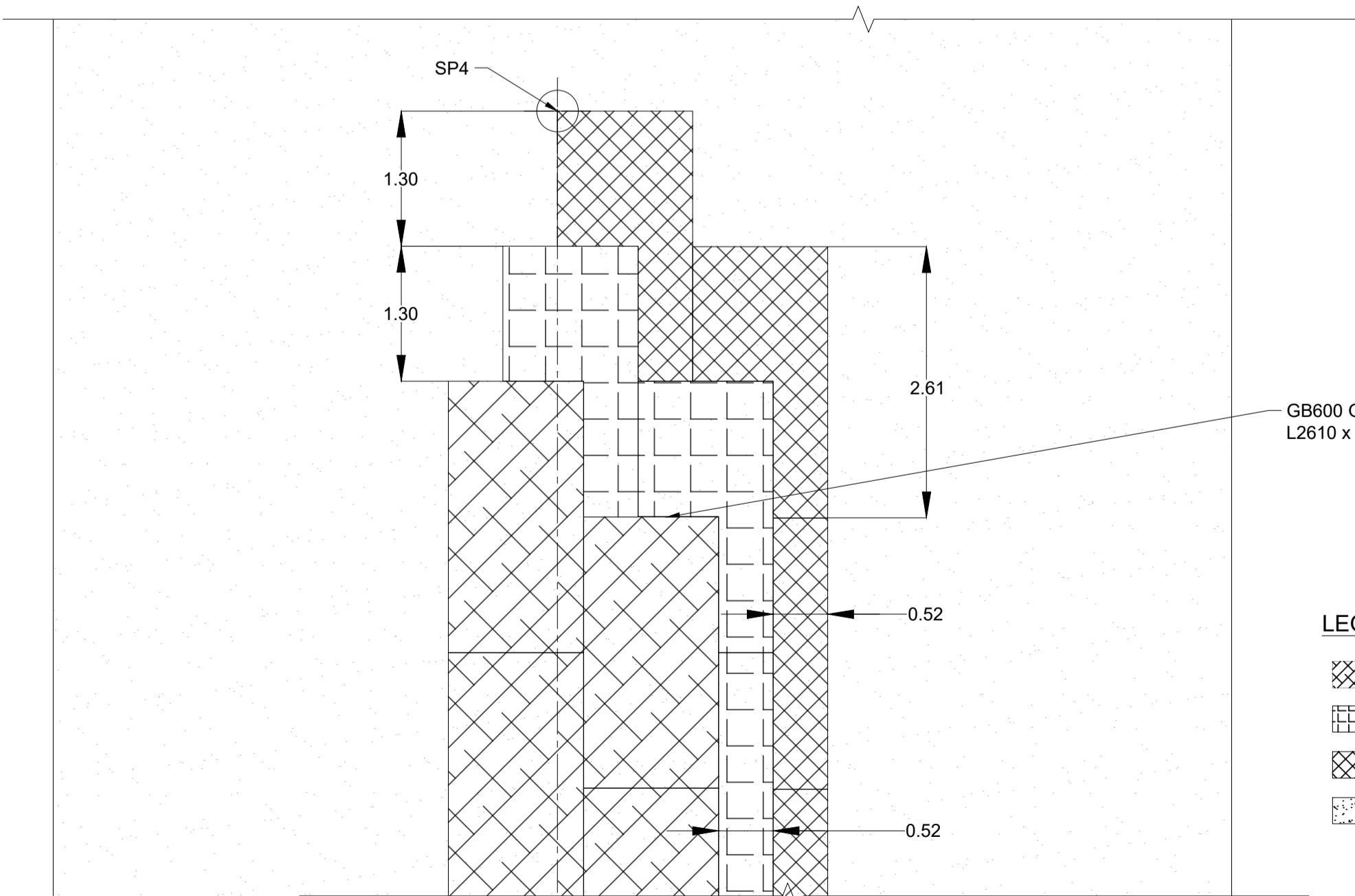
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ST. AGNES-48&49 SECTION A-A
From Ch.0+140



ST. AGNES-48&49 SECTION B-B
From Ch.0+240



- LEGEND:**
- TOP LAYER
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Appendix 2.2 Outline CEMP

Isles of Scilly Sea Defences Outline Construction Environmental Management Plan

Final Report

April 2023

www.jbaconsulting.com



Council of the
ISLES OF SCILLY

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Revision History

Revision Ref/Date	Amendments	Issued to
April 2023	Final Report	CIoS

Contract

This report describes work commissioned by The Council of the Isles of Scilly. JBA Consulting carried out this work.

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Purpose

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Table 3-1: Outline Construction Environmental Management Plan

2

1 Introduction

1.1 Overview

- 1.1.1 This Outline Construction Environmental Management Plan (CEMP) has been updated to reflect recommended mitigation measures included in the ES Addendum chapters and appendices (ES Addendum Volume I and ES Addendum Volume II). It also includes a Framework Site Waste Management Plan in response to comments raised by the Environment Agency relating to the need for the proposed activity to identify and correctly manage any waste produced as a result of the works.
- 1.1.2 Descriptions of the works proposed at each of the nine sites is as per the Environmental Statement submitted in November 2022, with design changes as detailed in ES Addendum Volume I.

2 Outline CEMP

- 2.1.1 The CEMP is a live document that needs to be updated as the project progresses through the consenting process and pre-construction phase and throughout the construction of the schemes. A construction contractor has not yet been confirmed. The following outline CEMP (see Table 3-1) has been produced to support the planning application and marine licence and it is assumed it will be delivered further by the construction contractor prior to the start of construction to address any consent conditions imposed and to reflect the detailed construction methodology.
- 2.1.2 Potential impacts have been identified through the Environmental Impact Assessment (EIA) process and area reported in the Environmental Statement (ES) Volume I. A range of 'standard' or best practice mitigation and construction management measures were accounted for in the assessments presented within the ES and it is assumed that these will be implemented during construction. The detailed CEMP will identify how commitments made in the EIA will be translated into actions on site.

Table 2-1: Outline Construction Environmental Management Plan

Ref.	Environmental Objective	Action Proposed	Relevant development site	Responsibility	Reference to further information	Further comment
Coastal processes						
CP1	Prevent introduction of construction materials into the water column	All work to be undertaken in dry conditions (i.e. when tide levels expose the work areas). New defences will be constructed in sections only that can be completed during a single tidal period. Tide levels to be monitored throughout construction; if there is a risk of tidal inundation during construction, all works will cease immediately. Works will cease during storm events, where the beach is facing the predominant wind/wave direction.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP2	Prevent introduction of construction materials into the water column	No storage of plant or materials on the foreshore. The potential storage area must be located as high as possible in the tidal range, preferably above Mean High Water Springs. Fine sediment will not be stored on the foreshore to prevent sediment mobilisation. An appropriate plant recovery protocol should be put in place to ensure plant can be recovered from the intertidal area. Actions to limit sediment disturbance will be outlined in a Sediment Management Plan	All	Construction contractor	Environmental Statement sections 4.2 and 4.4 WFD Assessment (Appendices 5.3a – 5.3c)	

		which must be adhered to during construction.				
CP3	Maintain natural profile of beach	Beach levels around rock storage areas will be monitored and, if necessary, reinstated using excavated material.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP4	Maintain natural profile of the beach	Movements of construction vehicles on the beach will be along designated routes only. Construction traffic pathways on the beach will be periodically assessed and reinstated if necessary. All disturbed areas will be returned to their former state following construction.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP5	Maintain natural profile of the beach	Construction traffic pathways will be visually assessed and beach levels reinstated if significant lowering and compaction is observed.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP6	Maintain natural profile of the beach	Slope of recharged rock armour must be maintained at a gentle, dissipative gradient, as similar to existing conditions as possible, to reduce risk to local scour of beach material.	Great Popplestone	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP7	Maintain natural profile of the beach	Cobbles and sediment will be taken from the entire longshore profile of the beach to reduce depleting specific areas of sediment.	Porth Killier	Construction contractor	Environmental Statement sections 4.2 and 4.4	
CP8	Prevent introduction of suspended beach material into the water column	Tidal work schedules will be assessed at least 2 weeks in advance of the works and works will be co-ordinated around these dates.	All	Construction contractor	Environmental Statement sections 4.2 and 4.4	

Biodiversity and Nature Conservation						
BN1	Minimise the risk of impacts on ecology during construction	An Ecological Clerk of Works (ECoW) will be appointed to support the delivery of measures described in the CEMP during the construction process.	All	Council of the Isles of Scilly Project Manager	Environmental Statement section 5.4	
BN2	Avoid impacts on breeding birds within the Isles of Scilly Special Protection Area (SPA) and Ramsar site	Works and compound areas will be clearly marked prior to the start of construction and communicated regularly to site staff and visitors. Any clearance of vegetation required will be carried out outside of the breeding bird season (i.e. avoiding March to September inclusive). Any works taking place between March and September will require a nesting bird check by a qualified ecologist prior to their commencement. If any nesting sites are identified within the works area, works will cease immediately until appropriate mitigation measures are identified and implemented in consultation with the ECoW.	All	Construction contractor	Environmental Statement section 5.4	
BN3	Avoid impacts on maritime, subtidal and intertidal habitats within the Isles of Scilly complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA) and Ramsar.	A full range of pollution prevention measures will be implemented throughout construction, as set out in the CIRIA guidance document Control of water pollution from construction sites. Oil and fuel leaks will be prevented by implementing the following suite of actions: <ul style="list-style-type: none"> • Chemicals, fuels and oils will be stored in bunds with a storage capacity 110% of the stored volume. • Biodegradable chemicals will be used wherever possible. • Drip trays will be placed under standing machinery. 	All	Construction contractor	Environmental Statement section 5.4 CIRIA Guidance: control of water pollution from construction sites	

		<ul style="list-style-type: none"> • Refuelling will take place on an impermeable surface in one designated area well away from any watercourse or drainage (at least 7m) with capture of any spillages. • Emergency spill kits will be available on site at all times and staff will be trained in their use. • Toolbox talk to be delivered to all staff for pollution prevention and incident response. • Daily checks and weekly recording of site equipment will be carried out. Any defective items will be removed from site as soon as reasonably practicable. • Where there is potential for pollutants to reach marine habitats through drainage water, this will be collected and passed through settlement and oil interception facilities to remove pollutants before being discharged to the sea • All waste will be removed from site by an appropriately licensed waste management company. • Disturbance to the foreshore should be restricted to the smallest possible footprint, and any disturbance to the ground surface must be restored to previous condition on completion of the works. • There should be no storage of plant or materials on the foreshore. 				
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		<ul style="list-style-type: none"> An appropriate plant recovery protocol should be put in place to ensure plant can be reversed from the intertidal area. 				
BN4	Minimise damage and disturbance to all habitats.	<p>All working areas will be clearly demarcated; no construction plant to access areas of beach outside of the working area.</p> <p>All plant and delivery drivers will be fully briefed on the importance of adhering to track limits before entering site.</p> <p>Existing access tracks will be utilised wherever they exist.</p> <p>Rock armour to be stored within the construction compound or in areas of existing rocky shore and shingle habitat wherever feasible.</p>	All	Construction contractor	Environmental Statement section 5.4	
BN5	Avoid impacts on local ecological receptors	A vegetation survey should be undertaken immediately prior to the works taking place and will set out the limits of all site compounds and access roads. Suitable track matting should be used where tracks do not already exist and should be monitored following the works to ensure that the vegetation cover is recovering.	All	Construction contractor	Environmental Statement section 5.4	
BN6	Avoid impacts on local ecological receptors	All works will be undertaken in the dry where possible to minimise disturbance to marine fauna from noise and vibration. A toolbox talk will be given to all site staff regarding marine mammals and potential disturbance impacts. If any seals are encountered within 200m of the works, then site staff will keep their distance and works will be halted until the individual has moved	All	Construction contractor	Environmental Statement section 5.4	

		on of its own accord. If this proves to be a regular occurrence, further advice will be sought from an experienced marine ecologist.				
BN7	Avoid impacts on local ecological receptors	A Toolbox Talk will be provided for all staff and site visitors prior to the start of construction; the talk will provide information on the site and its ecological sensitivities and on the environmental management requirements and emergency procedures to be adopted.	All	Council of the Isles of Scilly Project Manager	Environmental Statement section 5.4	
BN8	Avoid impacts on local ecological receptors	General avoidance measures will be incorporated at each site including: <ul style="list-style-type: none"> • Limiting hours of working to daylight hours to limit disturbance to nocturnal and crepuscular animals. • Use of lighting at night will be avoided. If the use of lighting is essential, then a directional cowl will be fitted to lights to prevent excess light spill. • Contractor to maintain site efficiently, clearing away materials which are not in used, such as wire or bags, to prevent harm to wildlife. • Any pipes will be capped when not in use (especially at night) to prevent animals becoming trapped. Any excavations outside of the intertidal zone will be covered overnight to prevent animals from falling and getting trapped. If not possible, a strategically placed plank will be placed to allow animals to escape. 	All	Contractor	Environmental Statement section 5.4	
BN9	Avoid impacts on local ecological receptors	To reduce impacts that working on multiple sites could have on seabird assembles foraging or resting at sea, and wading bird assemblages, where parallel working is preferred to meet project delivery	All	Contractor	Environmental Statement Addendum, Section 5.	

		schedules, it will be organised so that works do not take place on adjacent beaches.				
BN10	Invasive species management	<p>Hottentot Fig <i>Carpobrotus edulis</i> has been recorded at most of the sites. An invasive species management plan will be written in order to ensure that works do not cause the further spread of species. This will include:</p> <ul style="list-style-type: none"> • A re-survey of the works area prior to the commencement of works to ensure that there are no new areas of growth of any invasive non-native species. • A toolbox talk to all site on the identification and status of Hottentot Fig and for compliance with the management plan. • During site set up, demarcation of any areas of Hottentot Fig to ensure that the site enabling works do not incidentally cause the spread of this species. • Complete removal and appropriate disposal of individual whole plants. • Appropriate biosecurity measures to be followed during removal of these plants. 	All	Council of the Isles of Scilly Project Manager / Construction contractor	Environmental Statement section 5.4	
BN11	Invasive species management	<p>All local biosecurity measures to ensure that the works do not facilitate the spread of Brown Rats will need to be adhered to. Measures include :</p> <ul style="list-style-type: none"> • checking of material, plant and vessels for signs and presence of 	All	Council of the Isles of Scilly Project Manager / Construction contractor	Environmental Statement section 5.4	

		<p>rats before transportation and arrival at site.</p> <ul style="list-style-type: none"> • use of rope guards on vessel transporting material. • ensuring food and waste on board are all contained in rodent proof containers. • Good waste management will be implemented throughout the works. • a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity <p>These measures should be documented in a biosecurity risk assessment.</p>				
BN13	Vegetation compensation	After completion of the works, replanting of native dune species on the constructed dunes should be undertaken to compensate any loss of vegetation.	Periglis and Porth Coose	Construction contractor	Environmental Statement Addendum, Section 5.	
BN14	Sand dune restoration	Void created by removal of historic rock revetment embedded in sand dune to be replaced with sand from the rear of the dune. Scrub in this area of SSSI designation to be thinned and sand removed to be placed in the void at the front of the dune. If there is a soil sublayer present, soil should be removed or buried to a depth of at least 1m (where the aim of the management is to encourage mobile dune habitat with the associated plant community).	Great Popplestone	Construction Contractor	Ecological Enhancements Report	
BN15	Enhancement	Recommended enhancement measures be built into scheme to compensate for the loss of intertidal habitats including placing large, textured rocks and boulders at the toe of the rock armour in the intertidal zone,	Porth Killier	Council of the Isles of Scilly Project Manager /	Environmental Statement Addendum, Section 5.	

		creating indentations and artificial rock pools.		Construction contractor		
BN16	Enhancement	Creation of an artificial Storm Petrel nesting station on St Agnes (likely within Big Pool and Browarth Point SSSI at the northern end of Porth Coose)	St Agnes	Council of the Isles of Scilly Project Manager / Construction contractor	Ecological Enhancements Report (Appendix 5.4)	
BN17	Enhancement	Clearance of Hottentot Fig and removal/cutting of gorse, bramble and invasive non-native shrubs at Heathy Hill to create less species competition and allow the enhancement of native vegetation	Bryher	Council of the Isles of Scilly Project Manager / Construction contractor	Ecological Enhancements Report (Appendix 5.4)	
BN18	Enhancement	Funding of mechanical vegetation clearance to promote heathland and reduce vigour of bracken. Removal of invasive Pittosporum to provide greater/increased areas to support breeding Gulls in the Gugh SSSI.	St Agnes	Council of the Isles of Scilly Project Manager	Ecological Enhancements Report (Appendix 5.4)	
Landscape						
LA1	Maintaining landscape	Measures to maintain landscape across all sites should be applied including: <ul style="list-style-type: none"> • Replant any areas of lost vegetation using locally appropriate species. • Ensure that Scillonian granite is used for revetment and where adjacent to existing Cornish granite, this is graded to create a softer transition. • Carefully plan programme and haulage routes to minimise the length of time any one area is exposed to the visual impact of vehicle movements and that visual impacts are experienced by viewers within a limited field of view. 	All sites	Construction contractor	Environmental Statement Section 6.6 and Tables C3 to C6 of Appendix 6C.	

LA2	Maintaining landscape	Replant to re-establish continuous line of shrubs behind revetment at Kitchen Porth and to replace any lost shrubs at Green Bay using locally appropriate species.	Kitchen Porth	Construction contractor	Environmental Statement Section 6.6 and Tables C3 to C6 of Appendix 6C.	
LA3	Maintaining landscape	Cover rear of concrete sloping sea wall with small rocks and soil to reduce incongruity and untidiness and partially restore naturally occurring land cover.	Great Popplestone	Construction contractor	Environmental Statement Section 6.6 and Tables C3 to C6 of Appendix 6C.	
LA4	Maintaining landscape	Using aggregate of colour complementary to the surrounding sands as fill materials of geomat.	Lower Town Beach	Construction contractor	Environmental Statement Section 6.6 and Tables C3 to C6 of Appendix 6C.	
Historic Environment						
HE1	Avoid impacts on Scheduled Monuments	During construction it is recommended that the boathouse is fenced off or otherwise demarcated to prevent accidental damage. Investigation of the extent of the remains and an archaeological investigation of the shed to be undertaken under a Watching Brief. No groundworks to be undertaken until a programme of archaeological recording work, including a Written Scheme of Investigation has been submitted to and approved in writing by the local planning authority. Mitigation for digging up part of the Scheduled Monument will include a full site excavation and recording process undertaken by a professional archaeologist. Additional measures will depend on the outcomes of consultation with Historic England and their review of the SMC application (including potential offset mitigation).	Great Porth (Great Par) North of Great Carn	Construction contractor	Environmental Statement Section 7.6	

HE2	Avoid impacts on Scheduled Monuments	The scheduled prehistoric field system and Romano-British monument at Green Bay should be demarcated to avoid accidental damage from vehicle movements straying from the access route.	Green Bay	Construction contractor	Environmental Statement Section 7.6	
HE3	Avoid impacts on Scheduled Monuments	It is recommended that archaeological monitoring in the form of a watching brief and a programme of excavation and recording if archaeological remains are identified takes place during ground breaking in line with an approved Written Scheme of Investigation.	Porth Killier	Construction contractor Council of the Isles of Scilly	Environmental Statement Section 7.6	
HE4	Avoid impacts on Scheduled Monuments	The presence and boundaries of Scheduled Monuments adjacent to storage areas, compounds and access routes should be brought to the attention of staff during construction to avoid inadvertent or accidental damage to the monument. This could be achieved through fencing of the monument. Full CEMP to be developed to outline how vehicle movements will be managed to avoid harm being caused to Scheduled Monuments.	All sites	Construction contractor	Environmental Statement Section 7.6	
HE5	Avoid impacts on Scheduled Monuments	No works comprising groundbreaking to be undertaken until a programme of archaeological recording work, including a Written Scheme of Investigation has been submitted to and approved in writing by the local planning authority.	All	Construction contractor	Environmental Statement Section 7.6	
HE6	Avoidance of impacts on archaeological features.	It is recommended that the preparation of this area for storage, including any groundworks be subject to archaeological monitoring, such as a watching brief.	Proposed sand storage area (St Agnes)	Council of the Isles of Scilly	Environmental Statement Section 7.6	
Public Amenity						

PA1	Avoid impacts on permissive footpaths and their users	A public safety plan will be created for each site to identify the measures required to minimise impacts on public use of the area. This may require staff to be present at some sites where work interactions with the public are potentially higher risk. This member of staff would advise members of the public when it is safe to pass, or temporarily halting construction.	All	Construction contractor	Environmental Statement section 8.5	
PA2	Public communications	A stakeholder management plan should be set out outlining what communications are needed and when. For local residents, this will include a letter drop to advise of the upcoming works. Newsletters may also be used which could be put up in local accommodation, shops, and on noticeboards at the site.	All	Construction contractor	Environmental Statement section 8.5	
PA3	Maintain public safety	Temporary fences will be placed across impacted tracks and areas of publicly-used features likely to be affected by the works with notices directing walkers/other recreational users to alternative routes.	All	Construction contractor	Environmental Statement section 8.5	
PA4	Access management	Materials should be delivered directly to the site where they will be used, where feasible, to manage impacts on use of main arrival points to the island.	All	Construction contractor	Environmental Statement section 8.5	
Environmental Contamination						
CE1	Prevent dust nuisance.	Detailed construction method statements should be prepared following Institute of Air Quality Management (IAQM) guidelines on dust management for medium and high risk sites.	All	Construction contractor	Environmental Statement Section 10.6 IAQM Guidance on the Assessment of Dust from Demolition and Construction	
CE2	Mitigate impacts of	Out of hours works will be avoided wherever reasonably practicable. Noise	All	Construction contractor	Environmental Statement Section	

	noise on residential receptors.	impacts will be minimised by adherence to measures described in BS 5228, to reduce noise impacts from construction by 5dB to 15dB.			10.6 BS 5228-1:2009 British Standard Institute Code of Practice for Noise and Vibration Control on Construction and Open Sites.	
CE3	Minimise impacts of lighting the construction site.	Detailed construction method statements will be prepared following Institute of Lighting Practitioners guidance.	All	Construction contractor	Environmental Statement Section 10.6 Institute of Lighting Practitioners Guidance Notes for the Reduction of Obtrusive Light	
CE4	Minimise risk of waste to cause environmental pollution	Site Waste Management Plan to be developed based on Framework Site Waste Management Plan. Waste that is recyclable will be sorted within the construction compound, placed into the relevant storage disposal container, and then removed from site for disposal at an appropriate recycling facility. All potentially contaminated material will be subject to Waste Acceptance Criteria testing. Any excavated clay that cannot be reused would be bulked on site and disposed of at an appropriately licenced waste management facility. All residual waste material will be removed from site and disposed of at an appropriately licenced waste management facility.	All	Construction contractor	Environmental Statement Section 10.6 and Framework Site Waste Management Plan (Appendix 2.2)	

CE5	Minimise impacts of construction traffic	<p>A Construction Traffic Management Plan (CTMP) will be prepared and agreed with the Council of the Isles of Scilly prior to works commencing to detail timings for deliveries and other matters related to safety on the access routes.</p> <p>The CTMP will likely include:</p> <p>A HGV routeing plan to be communicated to all drivers during their induction.</p> <p>Limiting construction delivery hours and avoidance of 'peak' times.</p>	All	Construction contractor	Environmental Statement Section 10.6	
Climate risk						
CR1	Risk Management	An emergency plan should be developed including emergency procedures for flooding and storm events including outline of safe access points and details of alternative access points to site.	All	Construction contractor	Environmental Statement Section 9.9	
CR2	Risk Management	The Environment Agency Flood Risk Warning Service should be used to provide early warning of flood risk to the construction site and allow preparedness.	All	Construction contractor	Environmental Statement Section 9.9	

3 Framework Site Waste Management Plan

3.1 Introduction

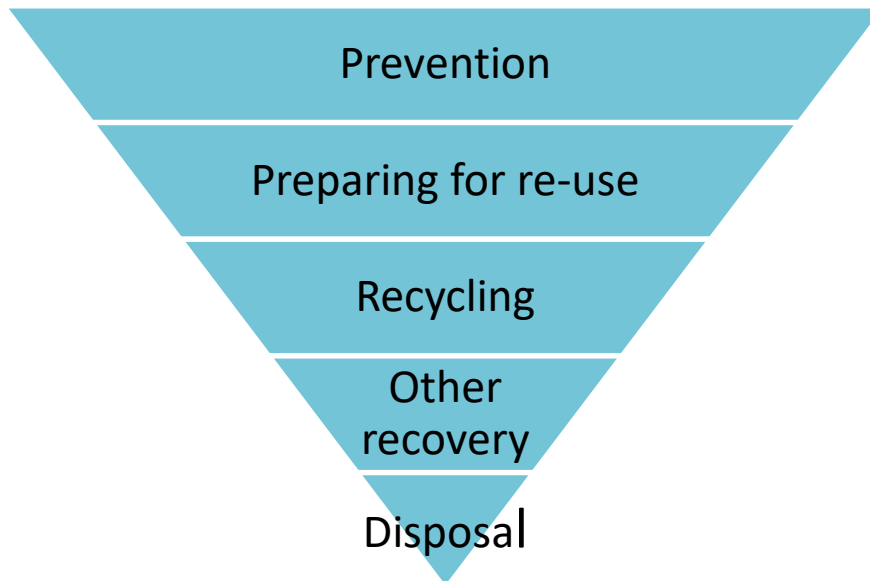
- 3.1.1 This Framework Site Waste Management Plan (SWMP) provides an outline waste management strategy for the construction phase of the proposed development, considering likely waste arisings from construction based activities, such as excavation, and addresses how it will be managed.
- 3.1.2 Whilst the Site Waste Management Plan (SWMP) Regulations (2008) were revoked in 2013, producing a SWMP or similar is considered construction best practice. This Framework SWMP has been developed as a best practice measure and will also act as a guide to construction personnel on how to manage all types of waste, in accordance with best practice requirements. The appointed contractor should use this Framework SWMP to produce a construction stage SWMP.
- 3.1.3 The SWMP would identify the types and quantities of waste that would be produced throughout the construction of the proposed development and would identify management options for each type of waste, paying attention to the waste hierarchy. The adoption of the SWMP will help to ensure that the proposed development fulfils its legal obligations towards waste management and 'Duty of Care' (legal responsibility to prevent waste from being mismanaged by any person who holds it and escaping their control).

3.2 Legislation and planning policy

Overview

- 3.2.1 The legal definition of waste is "any substance or object which the producer discards or intends or is required to discard." In practical terms, waste includes surplus soil, scrap, recovered spills, unwanted surplus materials, packaging, office waste, wastewater, broken, worn-out, contaminated or otherwise spoiled plant, equipment and materials.
- 3.2.2 The key European waste legislation is the Waste Framework Directive (2008/98/EC). The Waste (England and Wales) Regulations (as amended) 2011 implements the Waste Framework Directive in England and Wales and sets the legal basis for the 'Duty of Care' for the management of waste in England and Wales.
- 3.2.3 The Waste Framework Directive sets out a hierarchy for the management of waste, which requires the demonstration by the producer of waste that the priority identified in Figure 3-1 below has been considered in order to determine the most suitable waste management option for all waste arisings. The waste hierarchy gives priority to the prevention of waste produced in the first instance, followed by preparing for re-use, recycling, recovery and disposal.

Figure 3-1: Waste hierarchy (European Commission, 2008)



3.2.4 It is a legal requirement for waste producers to follow the waste hierarchy when making decisions about waste management options for waste. Waste producers must follow the highest possible hierarchical option for their wastes.

National Planning Policy

3.2.5 In England, waste management strategies and principles are set out in a number of documents including:

- Waste Strategy 2000 (subsequently built upon by the Waste Strategy for England (Department for Environment, Food and Rural Affairs, 2007)) introduced new underlying principles of sustainable waste management.
- National Planning Policy Framework (NPPF) 2021 (Ministry of Housing, Communities and Local Government) sets out the Government's objectives in order to help achieve sustainable development. The framework does not include specific waste policies. These have been published as part of the national Waste Management Plan for England (Department for Environment, Food and Rural Affairs, 2021).

3.2.6 The National Waste Management Plan outlines that applicants should set out the arrangements that are proposed for managing any waste produced and should prepare a SWMP. The arrangements described and defined within the SWMP should include information on the proposed waste recovery and disposal for waste generated by the Proposed Development.

3.2.7 The applicant should seek to minimise the volume of waste produced and the volume sent for disposal and should demonstrate:

- Waste arisings will be properly managed both on site and off site;
- The waste from the proposed development can be dealt with appropriately by the waste infrastructure available. Waste arisings should not have an adverse effect on the capacity of existing waste management facilities to deal with other waste arisings in the area.
- Adequate steps have been taken to minimise the volume of waste arisings, and the volume of waste arisings sent to disposal, except where that is the best overall outcome.

Local Planning Policy

The Council of the Isles of Scilly is responsible for minerals and waste planning in the area in which the proposed development is located.

The Isles of Scilly Local Plan 2015 to 2030 was adopted in 2021. Policy OE5 relates to managing waste stating:

- 1) *'Existing waste sites are identified on the Policies Map. Development proposals that could prejudice use of these sites for the essential processing of waste for the islands, will be refused.'*
- 2) *'All development proposals must demonstrate best practice in addressing waste management solutions, must align with the waste hierarchy, and a site waste management plan (SWMP) must be submitted to support planning applications.'*
- 3) *'Construction and demolition waste should be minimised and must be managed and re-used on-island where there will be no harmful impacts. Where re-use on-island would result in an environmental risk to human health, biodiversity, the historic environment, the amenity of neighbouring properties or land uses, or the water environment, then appropriate off-island management or disposal will be required.'*
- 4) *'Significant proposals, including for major development, must demonstrate how the construction and operational phases of the development will be consistent with the principle of sustainable waste management, through a waste management plan to include a waste audit, which should be submitted with the application.'*
- 5) *'Waste facilities for re-use, recycling, composting and the generation of heat/energy, or the co-location of such uses, will be permitted where they improve the sustainable management of waste on the islands and accord with other relevant policies in the Local Plan.'*

Policy OE6 relates to minerals which states:

'support will be given to the use of construction materials and minerals already on the islands, through the use of recycled and secondary materials to minimise the requirement for any direct extraction.'

The Isles of Scilly Waste Reduction Strategy 2020-2030 outlines a series of actions to reduce waste across the islands including:

1. Reduce the overall volume of waste across the islands
2. Increase the amount of material that is reused
3. Increase the amount of waste that is recycled or composted.

3.3 Waste management

- 3.3.1 The proposed development has been designed to minimise the generation of waste and maximise opportunities for the sustainable re use of material and waste on site in line with current guidance. It is anticipated that all arisings will be reused on site as backfill, however, any excess material disposal could require offsite disposal. All waste materials will either be placed into the relevant storage disposal container or removed from site by the individual site contractor and disposed of in an appropriate manner. It is anticipated that all waste collected will be transported to the existing waste and recycling centre on St Mary's for disposal.
- 3.3.2 Although waste will be limited and prevented where possible, there may be small amounts of waste from construction works arising from:

- Enabling works (vegetation clearance)
- Earthworks
- Main civil works (including construction of rock revetments etc)
- Welfare facilities.

3.3.3 Actions pertaining to waste minimisation which will be considered for implementation during the construction of the proposed development the contractor will be required to develop and implement a full construction phase SWMP, incorporating the recommendations and requirements within this Framework SWMP. Waste minimisation actions relating to site generated waste that are anticipated to be implemented include:

- Attention to material quantity requirements to avoid over-ordering and generation of waste materials.
- Re-use of materials wherever feasible, e.g. re-use of excavated soil for planting;
- Segregation of waste at source where practical;
- Re-use and recycling of materials off-site where re-use on site is not practical;
- Accurate record keeping of waste types and volumes; and
- Staff awareness training to ensure all personnel know the correct procedures on site for waste segregation, disposal and recycling with clear signage.

3.4 Indicative roles and responsibilities

3.4.1 Personnel at all levels have a role in managing materials and waste correctly, however, typical roles and responsibilities that may be defined as part of both the construction and operational phase SWMPs are summarised below.

Site manager

- Responsible for ensuring a system is implemented that identified and manages the waste being produced.
- Implements a waste plan, identifying an appropriate strategy.
- Coordinates waste management on Site;
- Coordinates the identification of materials for re-use or recycling and identifies opportunities for waste reduction.
- Delivers staff training on waste management.
- Ensures that all waste storage containers are accurately labelled to show all site workers where to deposit specific materials.

Site personnel

- Correct handling and storage of materials to prevent damage and wastage.
- Correct handling of waste materials by containment, separation and storage.
- Labelling of waste storage containers to show where to deposit specific materials.
- Ensure containers are stored safely and securely.
- Disposal of waste to appropriate site with correct documentation.

3.4.2 The SWMP will define and assign the responsibilities of personnel at the Site.

3.5 Audit, monitoring and review

- 3.5.1 To be most effective, it is important that the SWMP is a live document which is continually reviewed and updated. Waste will be monitored routinely; the monitoring of waste and waste management plans ensures that waste minimisation obligations, as detailed within the SWMP are being met and helps to identify opportunities for improvements and potential cost reductions.
- 3.5.2 Waste monitoring should include completion of logs detailing the volume of materials brought to site and the volume of waste generated, including the type and the route of disposal/recovery.

3.6 Conclusion and summary

- 3.6.1 This framework SWMP presents the approach that would be implemented at the proposed development during its construction.
- 3.6.2 This plan illustrates and seeks to guide the contractor to:
- Recognise that the SWMP will underpin the approach to waste management for the proposed development
 - Define indicative roles and responsibilities within the organisations to ensure those responsible for waste management are aware of the remit.
 - Demonstrate that the construction phase would minimise waste in accordance with best practice via the implementation of a SWMP.

3.7 References

- Council of the Isles of Scilly (2020) *Isles of Scilly Waste Reduction Strategy 2020-2030* [Online] <https://scilly.gov.uk/sites/default/files/document/environment-transport/Waste%20Reduction%20Strategy.pdf>
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- Department for Environment, Food and Rural Affairs (2007) *Waste Strategy for England* [Online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228536/7086.pdf
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Appendix 5.1a Great Popplestone HRA



Isles of Scilly Sea Defences- Great Popplestone

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



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ISLES OF SCILLY**

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Revision History

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V1.0	Draft Report	The Council of the Isles of Scilly
V2.0	Updates following comments from NE	The Council of the Isles of Scilly
V3.0	Updates following comments from NE	The Council of the Isles of Scilly
V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Great Popplestone.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and

instead form a National Site Network. SPAs and SACs continue to be referred to collectively as 'European sites' within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives." This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitats Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of "people over wind" (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case</p>

HRA stage	Description
	<p>C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
<p>Stage 3: Assessment where no alternatives and adverse impacts remain</p>	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p> <p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
<p>Stage 4: Compensatory measures</p>	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in the Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Great Popplestone is located on the west coast of the island of Bryher on the north-west margins of the Isles of Scilly archipelago, approximate central OS Grid Reference SV 87383 14974. The beach comprises rounded granite boulders and cobbles to the south, with a more typical sand dune towards the north of the beach. Due to its location on the west coast of the island, Great Popplestone faces the Atlantic and is directly exposed to waves originating from deep water at the entrance to the bay. The location of the proposed scheme can be seen in Figure 3-1.



Figure 3-1: Location of proposed scheme

3.2 Proposed Works

Works are required at Great Popplestone to protect the island's water supply from seawater inundation and consequently contamination of the island's drinking water supply (Great Pool and the low-lying water meadow at Great Popplestone).

The proposed works will comprise the following elements:

- Raising of rock armour crest level to reduce overtopping (protecting Great Pool). Two options are being considered for this, option 1: import rock required to raise crest level, option 2: recover rock from the historic rock revetment for this purpose.
- The proposed works would make use of the existing protection and enhance it rather than require any demolition works. If option 2 were to be selected and the rock was recovered from the existing revetment installed by the Council in 1994, which is currently largely embedded in the sand dune, it would require the void to be replaced with sand from the rear of the dune.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Great Popplestone will be undertaken over approximately 27 days in September 2024.

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between April and August 2024. Materials will either be transported by barge using the landing site at Great Popplestone beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest feasible site and transported along the access track which runs along New Road and connects to an existing track to the west of Great Pool. There is also an alternative access track running across the island to the north of Great Pool.

There are currently two options under consideration for the construction of the scheme at Great Popplestone. Option 1 would be to import the required 750m³ of 1-3 tonne rock required for this. Option 2 would entail the movement of rocks from the historical revetment. It is assumed that a 30 tonne excavator will be used to either move exposed Cornish granite rocks from the north of the beach, or move the imported rocks into position. It is anticipated that any additional recovered rock will be transported to the adjacent materials storage area for re-use elsewhere across Bryher.

Once complete, the working area will be demobilised and all plant and construction materials will be removed from site.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located adjacent to the Isles of Scilly Special Protection Area (SPA), approximately 60m south of the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Ramsar sites is approximately 220m north of the proposed scheme (see Figures 4-1 and 4-2 below).



Figure 4-1: Location of Great Popplestone proposed works area in relation to designated sites; Overview

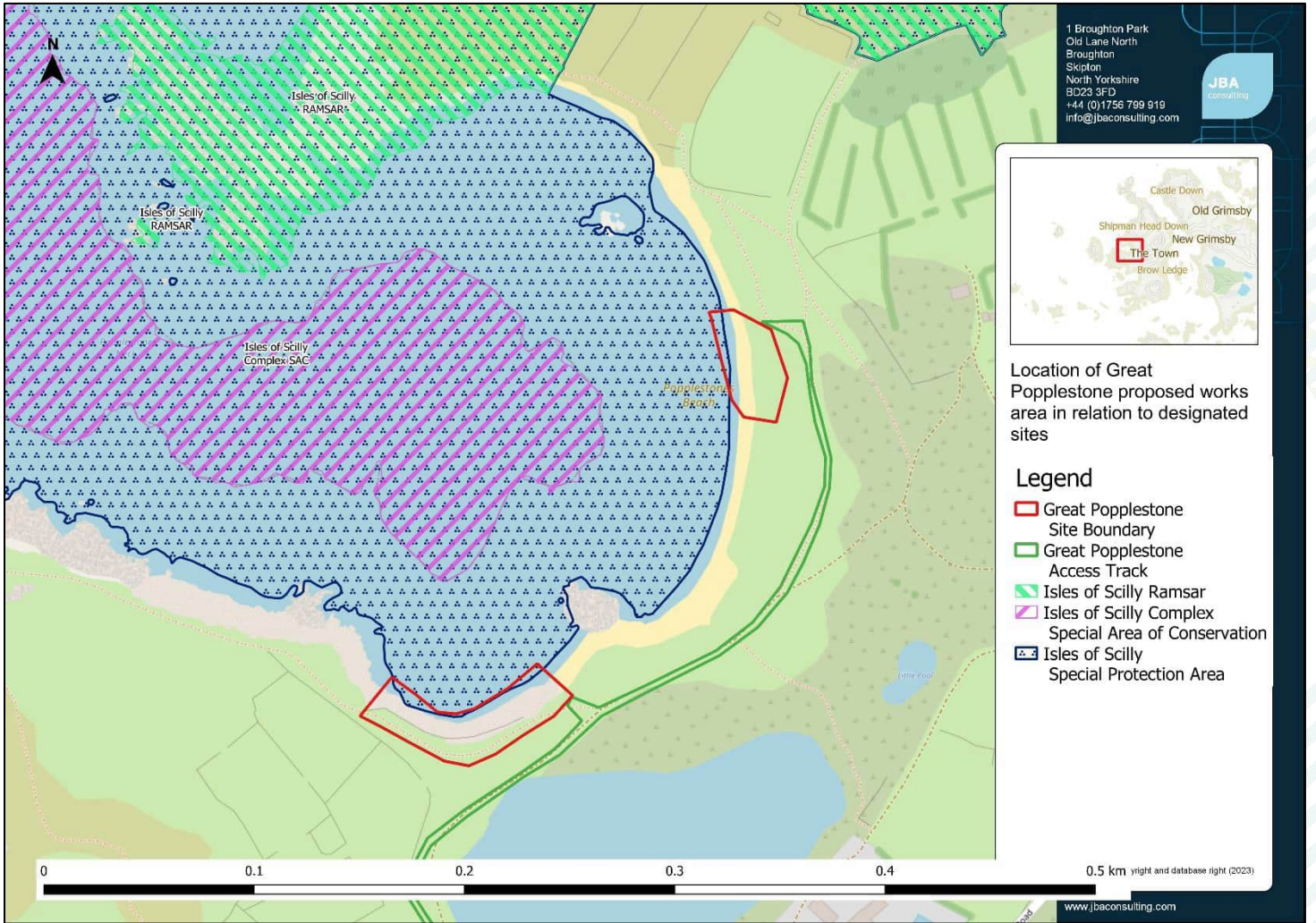


Figure 4-2: Location of Great Popplestone proposed works area in relation to designated sites; Close Up

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

- The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:
 - European storm-petrel *Hydrobates pelagicus* (breeding)
- The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:
 - Lesser black-backed gull *Larus fuscus graellsii* (breeding)
 - European shag *Phalacrocorax aristotelis aristotelis* (breeding)
 - Great black-backed gull *Larus marinus* (breeding)

- The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season: In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species

- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No

	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss/community simplification	<p>Materials will either be transported by barge using the landing site at Great Popplestone beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest site and transported along the access track which runs along New Road and connects to an existing track to the west of Great Pool. There is also an alternative access track running across the island to the north of Great Pool.</p> <p>There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

		<p>works will impact this Annex I habitat.</p> <p>The works are confined to the existing rock armour crest at the rear of the beach and will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction.</p>		
	<p>Competition from invasive non-native species (INNS)</p>	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above Mean High Water Springs (MHWS). There is therefore negligible risk of spreading or introducing marine INNS.</p>	No	<p>There is no potential for effects in combination with other PPPs.</p> <p>No</p>

	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Alteration to coastal processes	The site is already highly modified and additional rock is unlikely to significantly change the character of the site. The increased slope gradient could increase wave reflection and cause some beach lowering in front of the defence, although this is likely to be fairly minor as the crest height and permeability will remain similar. Whilst reducing wave overtopping and having a beneficial impact with regard to coastal flooding the proposed measures to place rock armour in the southern section of the bay may have a detrimental impact in terms of coastal squeeze. Whilst the proposed defence structure currently sits above the MHWS mark with the anticipated rise in sea level it would be expected that in time the structure will fall within the	No	There is no potential for effects in combination with other PPPs.	No

		tidal frame and will regularly encounter wave activity. Whilst the proposed works may have potential impacts with respect to coastal squeeze, these impacts will be minor, local and small-scale and will not impact the overall site integrity.			
	Physical damage	Materials will either be transported by barge using the landing site at Great Popplestone beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest site and transported along the access track which runs along New Road and connects to an existing track to the west of Great Pool. There is also an alternative access track running across the island to the north of Great Pool. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.	Yes	In combination assessment carried forward to Appropriate Assessment	
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area, with no recent records of Shore dock being present on Bryher. Recent	No	No potential for effects in combination with other PPPs have been identified.	No

		surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage	No Shore dock was recorded on site during the site survey. It is believed to be absent from the works area with no recent records of Shore dock being present. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however, this would not be expected to impact populations of Shore dock.	No	No potential for effects in combination with other PPPs have been identified.	No

Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in the loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Noise and Visual disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Grey seal that are hauled out. There is to be no impact pile driving or working in water; therefore, there will be no impacts on Grey Seals in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence	Yes	In combination assessment carried forward to Appropriate Assessment	

		of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works are small in scale and will take place above the MHWS. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel nesting habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Storm petrels are not known to nest on Bryher. The proposed works are sufficiently far away from known nesting sites of Storm petrel associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting individuals.	Yes	In combination assessment carried forward to Appropriate Assessment	

		Operations during the construction phase could however cause disturbance to Storm petrel foraging or resting at sea within the SPA.		
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment
	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the	Yes	In combination assessment carried forward to Appropriate Assessment

		island or reintroduced to the rodent-free St Agnes and Gugh.			
<p>European Shag <i>Phalacrocorax aristotelis</i> (breeding)</p> <p>Great black-backed gull <i>Larus marinus</i> (breeding)</p> <p>Lesser black-backed gull <i>Larus fuscus</i> (breeding)</p>	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for the SPA qualifying species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	<p>Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA.</p> <p>Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

		and Lesser black-backed gull within the Isles of Scilly SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting birds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting	No	No potential for effects in combination with other PPPs have been identified.	No

		opportunities for the seabird assemblage of the SPA and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.		
	Noise and Visual Disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by the breeding seabird assemblage within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment

	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Isles of Scilly Ramsar					
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	Habitat loss/ community simplification	The works area is not known to contain breeding habitat for Storm petrel, Lesser black-backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls and Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		<p>from known nesting sites of seabirds associated with the Ramsar site and it is therefore not considered that the works will result in disturbance to any nesting species.</p> <p>However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Ramsar site.</p>			
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	<p>The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.</p>	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	<p>Brown rats pose a threat to breeding birds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

		for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.		
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5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate mitigation measures put in place. Those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified in relation to the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 60m
Isles of Scilly SPA	Adjacent
Isles of Scilly Ramsar	Approximately 220m

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Great Popplestone are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, including Great Popplestone are located on the island of Bryher. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the sandflat habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
	Habitat loss: Works are to raise the existing rock armour at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach. Materials will either be transported by barge using the landing site at Great Popplestone beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest site and transported along the access track which runs along New Road and connects to an	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of	Yes

	<p>existing track to the west of Great Pool. There is also an alternative access track running across the island to the north of Great Pool.</p> <p>There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.</p>		<p>the material delivery by barge will be temporary.</p> <p>To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p>	
	<p>Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.</p>	Yes	<p>Any damage to habitats present within the sites via the construction works and barge landing will be temporary and localised.</p> <p>To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p>	Yes
<p>Annex II species (primary reason for selection): Shore dock</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the habitats with Shore dock present within the SAC.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.</p>	Yes

<p>Annex II species (not primary reason for selection): Grey seal</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the habitats used by Grey seal within the SAC.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.</p>	<p>Yes</p>
	<p>Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.</p>	<p>Yes</p>	<p>The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.</p> <p>Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.</p>	<p>Yes</p>

Isles of Scilly SPA				
Storm Petrel (breeding)	Disturbance: Operations during the construction phase could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Storm petrel within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting birds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures	Yes

	island or reintroduced to the rodent-free St Agnes and Gugh.		include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Great Black-backed Gull (breeding) Shag (Breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

<p>Lesser Black-backed Gull (breeding)</p>	<p>Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb resting and foraging Shag, Great Black-backed Gull or Lesser Black-backed Gull utilising the SPA at sea.</p>	<p>Yes</p>	<p>To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	<p>Yes</p>
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting birds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food</p>	<p>Yes</p>

			and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Seabird assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
	Disturbance: Construction activity could cause an increased amount of noise and activity which may disturb seabird assemblages resting or foraging at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do	Yes

			<p>not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>	Yes	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for</p>	Yes

			rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.</p>	Yes
	<p>Disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.</p>	Yes	<p>To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the</p>	Yes

			size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting birds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure	Yes

			that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
--	--	--	--	--

6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.1b: Stinking Porth HRA



Isles of Scilly Sea Defences – Stinking Porth

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



**Council of the
ISLES OF SCILLY**

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Revision History

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V1.0	Final Report	The Council of the Isles of Scilly
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V3.0	Updates following comments from NE	The Council of the Isles of Scilly
V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Stinking Porth.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as 'European sites' within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives." This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of "people over wind" (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment where no	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p>

HRA stage	Description
alternatives and adverse impacts remain	<p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Stinking Porth is located on the west coast of Bryher, southwest of Great Pool, approximate central OS Grid Reference SV 87304 14822. The beach at Stinking Porth is relatively narrow in comparison to other beaches on Bryher. Stinking Porth is protected by an embankment. The exposed face of the embankment comprises a mix of rounded beach pebbles, cobbles and small boulders. There are some low sections where overtopping has occurred, and many cobbles/small boulders have been washed over the crest. The landward face comprises soil and sand with relatively dense, but poor quality, vegetation. The crest of the embankment comprises of a combination of soil and boulders and is less than 3m wide with recent evidence of overtopping. The location of the proposed scheme can be seen in Figure 3-1.



Figure 3-1: Location of proposed scheme

3.2 Proposed Works

At Stinking Porth there is a need to increase the crest height above the present level of the crest of the beach, along with a requirement for a stable structure resistant to wave attack, to protect the island's water supply (Great Pool) from seawater inundation.

The proposed works include:

- A new revetment with a higher crest level along a 55m section of Stinking Porth, where the existing crest levels are below 5.5m. The rear of the structure here needs to be increased in width and level to provide resistance to overtopping discharges. The proposed revetment is a robust solution that will provide resilience against extreme storm events and protection for Great Pool.
- The slope of the main armour will be 1:2, comprising of a mix of 1 to 3 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour layer will be set at +6.5m to prevent overtopping. Using existing and reclaimed material, the leeward side of the structure can be brought up to +6.5m to match the crest and also help re-establish the footpath behind.
- The rock armour and underlayer/geotextile will replace the top of the beach and provide a suitable structure to resist overtopping and maintain the required crest level.
- The seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.
- Whilst the revetment is a change to the appearance of the beach from the existing dune appearance, it will provide the necessary protection.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Stinking Porth will be undertaken over approximately 48 days between October and December 2024. The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between April and August 2024. Materials will either be transported by barge using the landing site at Stinking Porth beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest feasible site and transported along the access track along New Road. There is also an alternative access track running across the island to the north of Great Pool.

Construction works across the Stinking Porth site will entail use of rock armour material, along with hearting stone, to construct a new revetment. It is assumed that the rock armour revetment will be constructed using a 360° 30 tonne excavator and 6 tonne dumper truck. The excavator will excavate the revetment toe trench and all arisings will be placed on a dumper truck. It is anticipated that all arisings, including any clay material encountered, will be reused on site as backfill along the revetment toe and elsewhere within the revetment footprint. However, any excess material will be transported from site to a licenced waste management facility for reuse or disposal.

The existing bank will be regraded to the required revetment angle (1:2) from bank crest to the toe trench. A geotextile membrane will be installed by overlaying the regraded bank to form the base of the revetment and biodegradable matting will be laid over the dune face. The excavator will place individual smaller rocks (40-200 kg) onto the geotextile membrane as an underlayer before placing 1 to 3 tonne rocks on top. It is assumed that the revetment will be constructed from the toe to the crest along its length. The toe excavation will be backfilled with site won sand.

Site won material will be moved to the leeward side of the revetment to build up the land to the same height of the crest of the armour, and the rear of the crest will be seeded with a native grass seed mix.

Once complete, the working area will be demobilised and all plant and construction materials will be removed from site.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located adjacent to the Isles of Scilly Special Protection Area (SPA) and 60m north of the Isles of Scilly Complex Special Area of Conservation (SAC). The Isles of Scilly Ramsar site is approximately 355m north of the proposed scheme.

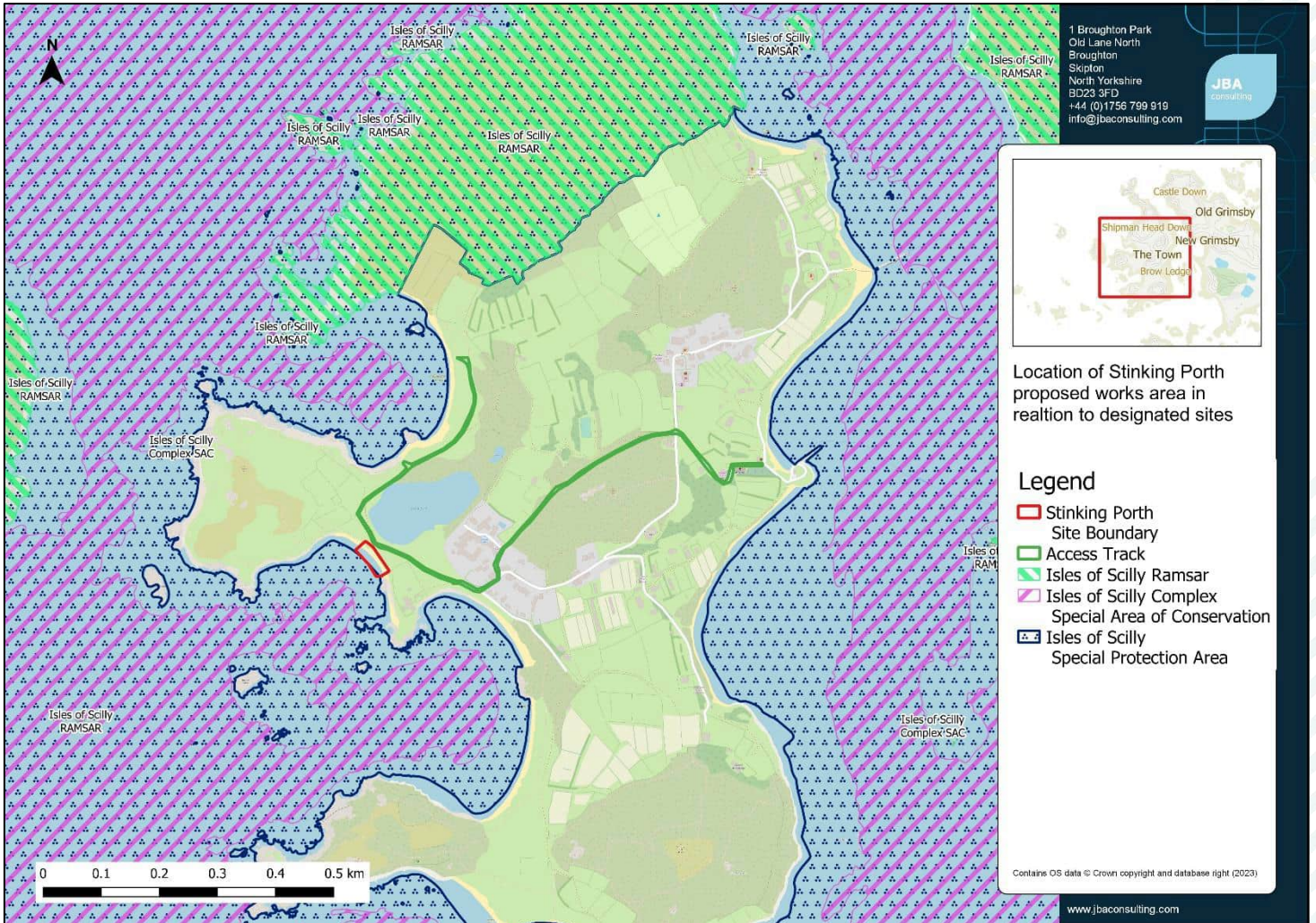


Figure 4-1: Location of Stinking Porth proposed works area in relation to designated sites; Overview

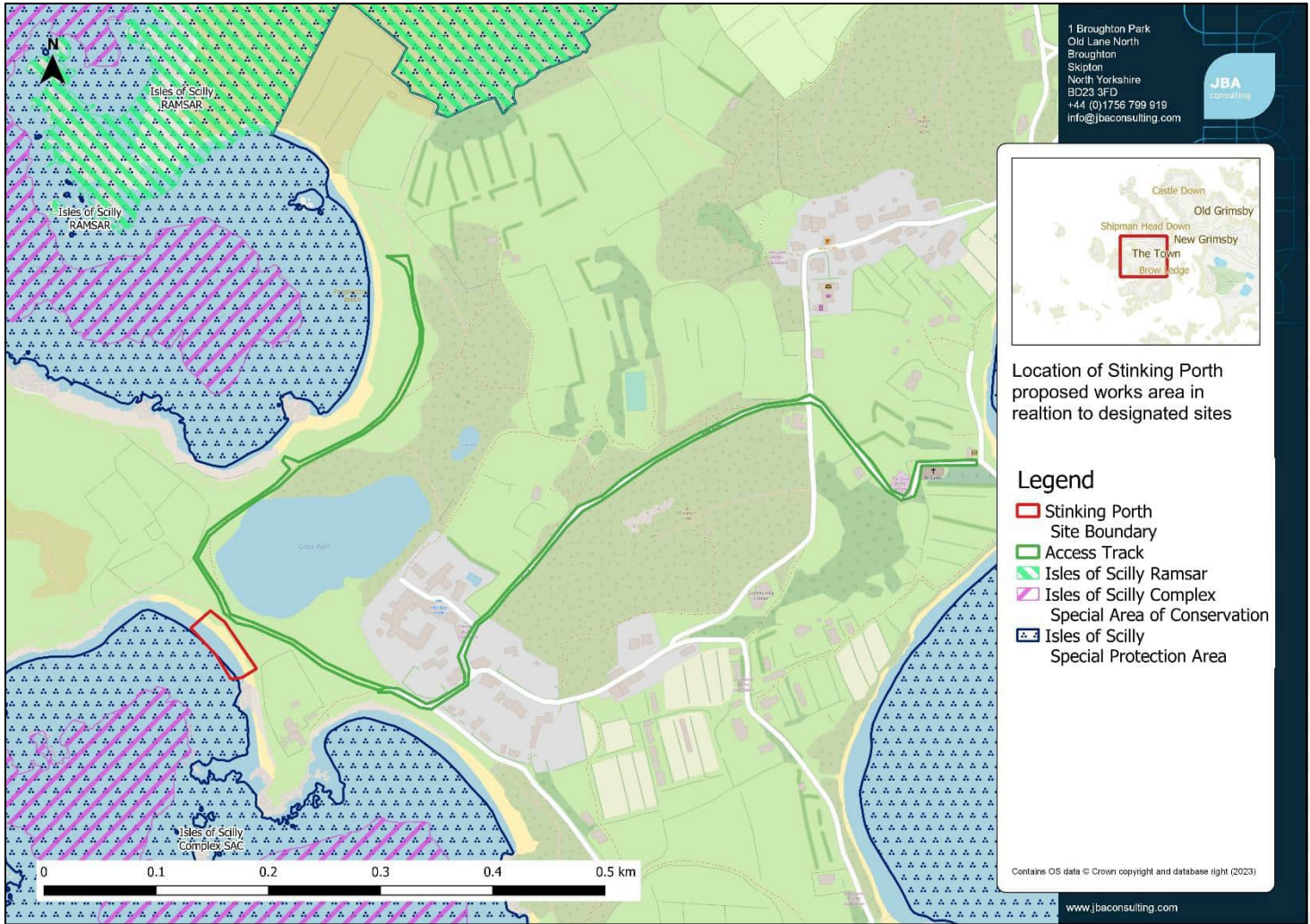


Figure 4-2: Location of Stinking Porth proposed works area in relation to designated sites; Close Up

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely

- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	

	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss/community simplification	<p>Materials will either be transported by barge using the landing site at Stinking Porth beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest site and transported along the access track along New Road. There is also an alternative access track running across the island to the north of Great Pool.</p> <p>There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.</p> <p>The works are confined to the beach and dune crest and will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during excavation of the crest.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
	Competition from invasive non-native species (INNS)	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however</p>	No	There is no potential for effects in combination with other PPPs.	No

		<p>this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS. There is therefore negligible risk of spreading or introducing marine INNS.</p>				
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	In combination assessment carried forward to Appropriate Assessment		
	Alteration to coastal processes	<p>Increasing the crest height within this low-lying area of Stinking Porth will have a beneficial impact with regard coastal flooding. However, placement of rock armour will have potential impacts with respect to coastal squeeze. Whilst the proposed defence structure currently sits above the MHWS mark with the anticipated rise in sea level it would be expected that in time the structure will sit within the intertidal zone. Current design drawings indicate that the structure is between approximately 2 m in the south and up to 8-10 m in the north, from the current MHWS mark. Whilst the proposed design may have potential impacts with respect to coastal squeeze, these impacts will be minor and small-scale. Any impacts will be local to the proposed site and will not impact the overall site integrity.</p>	No	There is no potential for effects in combination with other PPPs.	No	

	Physical damage	<p>There is the potential for works to damage sandflats during the construction works. Materials will either be transported by barge using the landing site at Stinking Porth beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest site and transported along the access track along New Road. There is also an alternative access track running across the island to the north of Great Pool.</p> <p>The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on Bryher. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey. It is believed to be absent from the works area with no recent records of Shore dock being present. Recent surveys suggest that it may now be restricted to just the four	No	No potential for effects in combination with other PPPs have been identified.	No

		islands Tresco, Annet, Samson, Tean (JNCC 2022).			
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in loss of marine habitat.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	

	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS). While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Storm petrel are not known to nest on Bryher. The proposed works are sufficiently far away from known nesting sites of Storm petrel associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting individuals. Operations during the construction phase could however cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	

	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
European Shag <i>Phalacrocorax aristotelis</i> (breeding) Great black-backed gull <i>Larus marinus</i> (breeding) Lesser black-backed gull <i>Larus fuscus</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for these species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works	Yes	In combination assessment carried forward to Appropriate Assessment	

		will result in disturbance to nesting birds within the SPA. Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Great Black-backed gull, Shag and Lesser Black-backed gull within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the seabird assemblage of the SPA and therefore the proposed works will not inhibit the	No	No potential for effects in combination with other PPPs have been identified.	No

		recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.				
Noise and Visual Disturbance		The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment		
Water Pollution		During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by seabird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment		
Physical damage/mortality		The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No	
Invasive non-native species (INNS)		Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment		
Isles of Scilly Ramsar						

<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	Habitat loss/ community simplification	The works area is not known to contain breeding habitat for Storm petrel, Lesser black-backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls and Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar site and it is therefore not considered that the works will result in disturbance to any nesting species. However, operations during the construction phase could cause disturbance to Storm petrel, Lesser black-backed gull or Shag resting or foraging at sea within the Ramsar site.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No

	<p>Invasive non-native species (INNS)</p>	<p>Brown rats pose a threat to breeding seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>
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5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 60m
Isles of Scilly SPA	Adjacent
Isles of Scilly Ramsar	Approximately 355m

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Stinking Porth are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, including Stinking Porth are located on the island of Bryher. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I Habitats: <ul style="list-style-type: none"> Sandflats not covered by seawater at low tide. 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Habitat loss: Works are to reinstate the crest at the rear of the bay and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach. Materials will either be transported by barge using the landing site at Stinking Porth beach and moved to the adjacent materials storage area, or if not feasible, landed at the closest site and transported along the access track along New Road. There is also an alternative access track running across the island to the north of Great Pool. There is potential that the habitat 'sandflats not covered by seawater at	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.	Yes

	low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.		It is considered that in this case the haul routes will rapidly recover following the completion of the works.	
	Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.	Yes	Any damage to habitats present within the site via the construction works and barge landing will be temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	Yes
Annex II species (primary reason for selection): Shore dock	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats with Shore dock present within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats used by Grey seal within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and	Yes

			<p>therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.</p> <p>Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.</p>	
Isles of Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Storm petrel within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Operations during the construction phase could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	<p>To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of</p>	Yes

			the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	Yes
Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb Shag, Great	Yes	working on multiple sites could have on bird assemblages, where parallel working is preferred to	Yes

	<p>Black-backed Gull or Lesser Black-backed Gull utilising the SPA.</p>		<p>meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting sea birds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a</p>	<p>Yes</p>

			biosecurity risk assessment and mitigation strategy.	
Seabird assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity could cause an increased amount of noise and activity which may disturb seabird assemblages resting or foraging at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard	Yes

			are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	Yes
	<p>Disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.</p>	Yes	<p>To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance</p>	Yes

			because of the construction works will not be significant.	
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	Yes	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	Yes

6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.1c: Great Porth (Great Par) North of Great Carn HRA



Isles of Scilly Sea Defences – Great Porth North of Great Carn

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



**Council of the
ISLES OF SCILLY**

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V1.0	Draft Report	The Council of the Isles of Scilly
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V4.0	Updates following comments The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Great Porth (Great Par) North of Great Carn.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as 'European sites' within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives." This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of "people over wind" (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment	Where a plan or project has been found to have adverse

HRA stage	Description
<p>where no alternatives and adverse impacts remain</p>	<p>impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p> <p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
<p>Stage 4: Compensatory measures</p>	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)

UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Great Porth (Great Par) is located on the western coast of the island of Bryher, approximate central OS Grid Reference SV 87505 14707. The beach comprises of sand with rocks and cobbles. Great Porth (Great Par) is located immediately adjacent to the Pool of Bryher and Popplestone Bank (Bryher) SSSI and approximately 30 m south of a scheduled monument: Gig shed on the north coast of Great Porth, Bryher. The location of the proposed scheme can be seen in Figure 3-1.

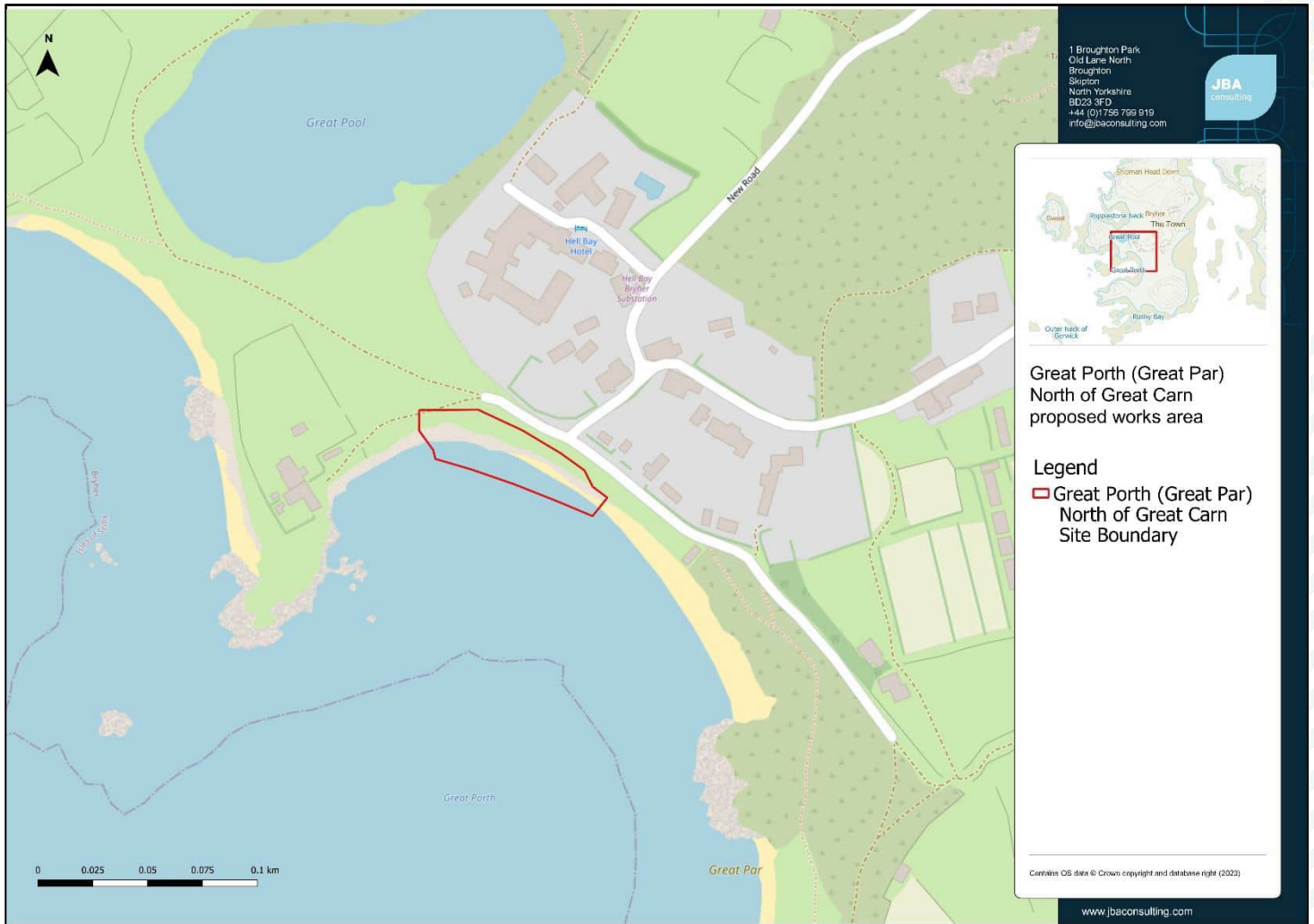


Figure 3-1: Location of proposed scheme

3.2 Proposed Works

There is a need to increase defences at Great Porth (Great Par) North of Great Carn to protect the island's water supply (Great Pool) from seawater inundation, and also to maintain the protection of people and property, infrastructure, and the Pool of Bryher and Popplestone Bank (Bryher) SSSI. There is also a need to replace unsuitable informal defences that have been laid.

The proposed development at Great Porth (Great Par) North of Great Carn comprises the following elements:

- Design and construction of a new +80m long rock revetment with an impermeable core, incorporating a vehicle and boat access point through a storm gate or similar demountable storm barrier to the north-west. The new revetment would be a robust solution that will provide resilience against extreme storm events.
- The slope of the main armour will be 1:2, comprising 1 to 3 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour will be set at +6.5m with a 3m wide crest to prevent overtopping.
- It is proposed that material will be placed on the rear of the rock crest to tie into existing ground levels. The material will provide some initial resistance to any overtopping discharges and will help the rear of the crest tie into the area behind.
- A demountable flood barrier is proposed to protect the lower level crest of the boat ramp. This would be a steel frame and stop log panel that can easily be erected by one person. The frame will need to be fixed to the rock crest at both ends. This flood barrier will rely on human intervention and as such, an appropriate warning system will be required so that the stop logs are inserted to provide the required protection.
- Seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Great Porth (Great Par) North of Great Carn will be undertaken over approximately 66 days between December 2024 and February 2025. It is acknowledged that boat users and fishermen use the beach and therefore works will likely need to avoid June to September (inclusive).

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between April and August 2024. It is anticipated that deliveries of materials will be in advance of the construction works commencing, requiring approximately 19 loads to be delivered in total. Materials will either be transported by barge using the landing site at the beach at Great Porth (Great Par) North of Great Carn and moved to the adjacent materials storage area, or if not feasible, landed at the closest feasible site and transported along the access track along New Road. It is assumed that after delivery, materials, including rock armour, will be transported using a 30 tonne truck, or alternative smaller vehicle if required. It is anticipated that deliveries will be staggered.

Construction works across the Great Porth (Great Par) North of Great Carn site will entail use of rock armour material to construct a new revetment. It is assumed that the new revetment will be constructed using a 360° 30 tonne excavator and 6 tonne dumper truck. The excavator will remove existing rock rubble along the length of the revetment and excavate the revetment toe trench. All excavated material will be placed in a designated area for temporary storage prior to reuse in the revetment or removal from site for disposal.

The existing bank will be regraded to the required revetment angle (1:2) from bank crest to the toe trench. A geotextile membrane will be installed by overlaying the regraded bank to form the base of the revetment. Biodegradable matting will be laid over the dune face. The excavator will then place individual smaller rocks (40-200kg) onto the geotextile membrane as an underlayer before placing 1 to 3 tonne rocks on top. It is assumed that the revetment will be constructed from the toe to the crest along its length.

A storm gate or similar demountable storm barrier will be constructed. This would be a steel frame fixed to the rock crest at both ends, with a stop panel that can be inserted. Site won material will be moved to the leeward side of the revetment to build up the land to the same height of the crest of the armour, and the rear of the crest will be seeded with a native grass seed mix.

Once complete, the working area will be demobilised, and all plant and construction materials will be removed from site.



Figure 3-2: Construction areas at Great Porth (Great Par) North of Great Carn

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located approximately 50m from the Isles of Scilly Complex Special Area of Conservation (SAC) and within the Isles of Scilly Special Protection Area (SPA). The Isles of Scilly Ramsar site is approximately 500m north of the proposed scheme.

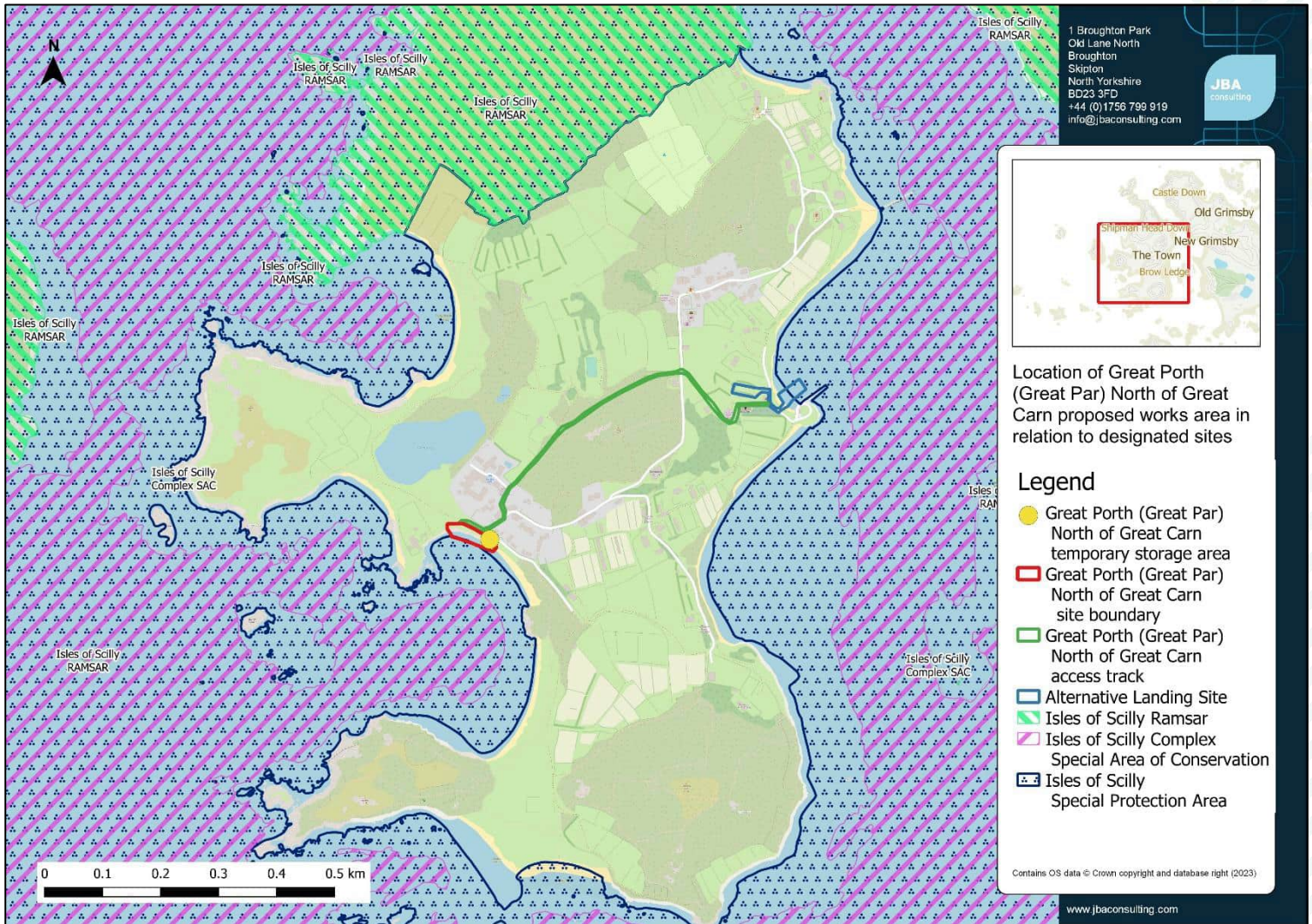


Figure 4-1: D Location of Great Porth (Great Par) North of Great Carn proposed works area in relation to designated sites; Overview

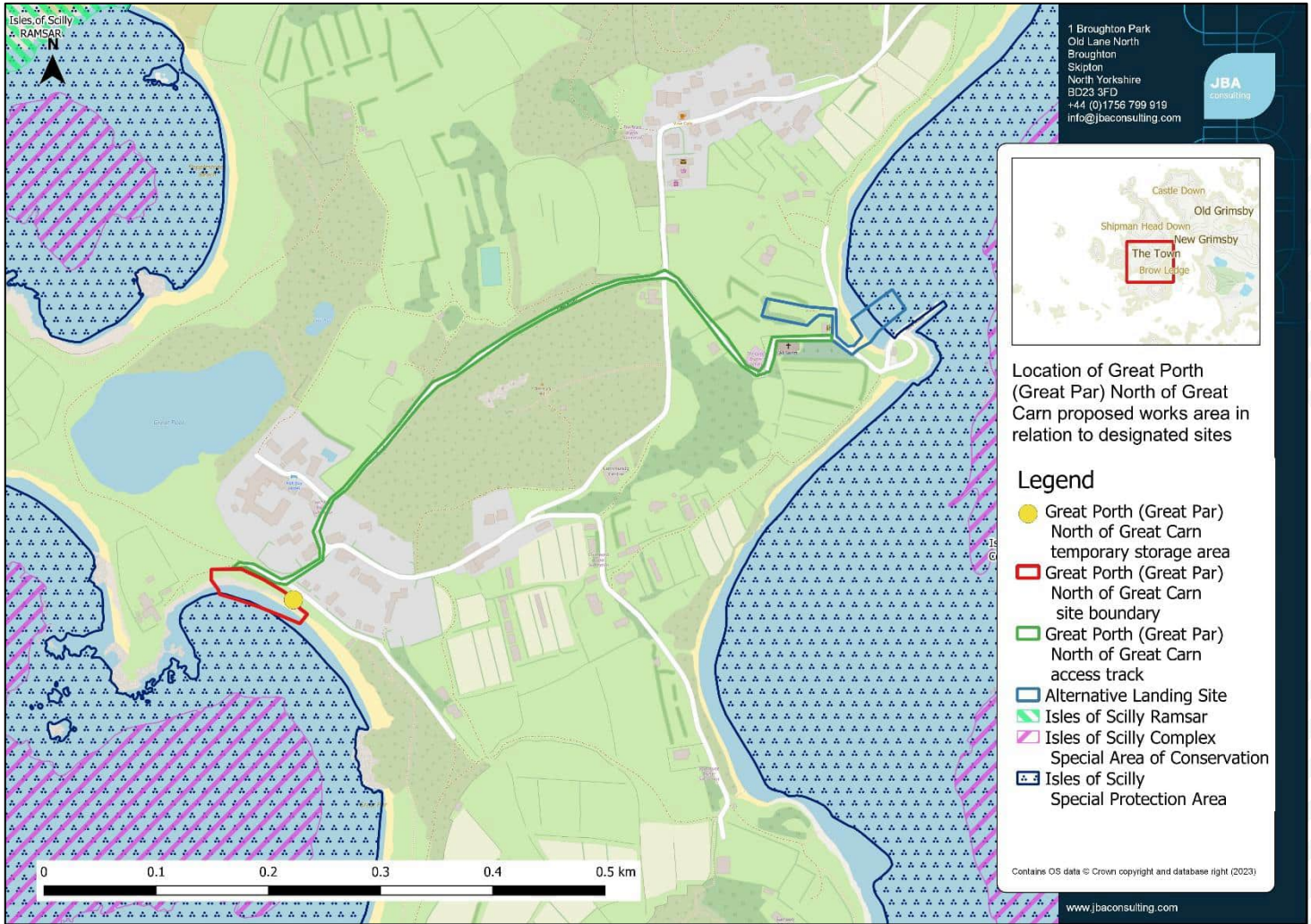


Figure 4-2: Location of Great Porth (Great Par) North of Great Carn proposed works area in relation to designated sites; Close up

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely

- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No

	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss/ community simplification	<p>Materials will be delivered by barge using a landing site in the intertidal area at the beach at Great Porth (Great Par) North of Great Carn and moved to the adjacent materials storage area, or if not feasible, landed at the closest site and transported along the access track along New Road. There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.</p> <p>The majority of the works are confined to the top of the beach crest and will be limited to areas of the beach which are dry or inundated only at high tides.</p> <p>The toe of the proposed rock revetment will fall below the</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

		MHWS. The beach within this area meets the Annex I criteria as a sandflat. There will therefore be a small-scale loss of sandflat habitat. There may also be temporary losses within the construction areas at the top of the beach.			
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present. Hottentot Fig has been recorded within the proposed works boundary and therefore an invasive species management plan will be put in place to ensure that the proposed works do not cause further spread of Hottentot Fig across the site.	No	There is no potential for effects in combination with other PPPs.	No
	Alteration to coastal processes	The proposed profile aligns with the existing profile, however the raised crest of the proposed rock armour may cause some wave reflection and beach lowering which could impact habitats present within the SAC via coastal squeeze. It is expected that the revetment will have a detrimental impact in relation to coastal squeeze. The permanency of the structure will prevent the landward transgression	No	There is no potential for effects in combination with other PPPs.	No

		of intertidal habitats and the species they support as they respond spatially to rising sea levels. Whilst the proposed works will have a detrimental impact with respect to coastal squeeze, these impacts will be small-scale and local to the proposed works area and will not impact the overall site integrity.				
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment		
	Physical damage/mortality	There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and the tracking of vehicles across the site may result in a small amount of damage to habitats present. Materials will be delivered by barge using a landing site in the intertidal area at the beach at Great Porth (Great Par) North of Great Carn and moved to the adjacent materials storage area, or if not	Yes	In combination assessment carried forward to Appropriate Assessment		

		feasible, landed at the closest site and transported along the access track along New Road. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.			
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on Bryher. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey. It is believed to be absent from the works area with no recent records of Shore dock being present. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No

	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact populations of Shore dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in the loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Noise and Visual Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Grey seal that are hauled out. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within	Yes	In combination assessment carried forward to Appropriate Assessment	

		the SAC in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works are small in scale and will take place above the MHWS. While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	Storm petrels are not known to nest on Bryher. The proposed works are sufficiently far away from known nesting sites of Storm petrel associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting individuals. Operations during the construction phase could however cause disturbance to Storm petrel	Yes	In combination assessment carried forward to Appropriate Assessment	

		foraging or resting at sea within the SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
European Shag <i>Phalacrocorax aristotelis</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Shag, Great black-	No	No potential for effects in combination with other	No

<p>Great black-backed gull <i>Larus marinus</i> (breeding) Lesser black-backed gull <i>Larus fuscus</i> (breeding)</p>		<p>backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for the SPA qualifying species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.</p>		<p>PPPs have been identified.</p>
	<p>Noise and Visual Disturbance</p>	<p>Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA.</p> <p>Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>
	<p>Water pollution</p>	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>

		habitats used by breeding Shag, Great black-backed gull and Lesser black-backed gull within the SPA, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting birds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain nesting habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the breeding seabird assemblage of the SPA and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No

	Noise and Visual Disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by the breeding seabird assemblage within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	

Isles of Scilly Ramsar					
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	Habitat loss/ community simplification	The works area is not known to contain breeding habitat for Storm petrel, Shag or Lesser black-backed gull. There will therefore be no foraging or breeding habitat lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	<p>Storm petrels are not known to nest on Bryher however Lesser black-backed gulls and Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar site and it is therefore not considered that the works will result in disturbance to any nesting species.</p> <p>However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Ramsar site.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	

	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to breeding seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): Shag	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the on the Isles of Scilly complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 50m
Isles of Scilly SPA	Within
Isles of Scilly Ramsar	Approximately 500m

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Great Porth (Great Par) North of Great Carn are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, including Great Porth (Great Par) North of Great Carn are located on the island of Bryher. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2, avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I Habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Habitat loss: Works are to construct a rock revetment at the rear of the beach and the majority of the works will be limited to areas of the beach which are dry or inundated only at high tides. The toe of the proposed rock revetment will fall below the MHWS. The beach within this area meets the Annex I criteria as a sandflat. There	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. As similar material to replace the rock rubble habitat is proposed to be placed at the rear of the rock crest, this should not change the long-term land use of the area.	Yes

	<p>will therefore be a small-scale loss of sandflat habitat.</p> <p>There may also be temporary losses within the construction areas at the top of the beach.</p> <p>As part of the proposed works a vessel will be used to transport construction materials to site, this is likely to be in the form of a barge. There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat. Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>		<p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.</p> <p>To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p> <p>The toe of the proposed revetment extends below the MHWS and will result in a small-scale loss of the Annex I habitat sandflats. Whilst intertidal sandflats are a feature of the SAC, habitats described in the SAC site description refer to sheltered sandflats present between the islands and these will not be impacted.</p>	
	<p>Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction</p>	<p>Yes</p>	<p>Any damage to habitats present within the sites via the construction works and barge landing will be temporary and localised.</p>	<p>Yes</p>

	works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.		To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	
Annex II species (primary reason for selection): Shore dock	Water pollution: During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats used by Grey seal within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on	Yes

			<p>Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.</p> <p>Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.</p>	
Isles of Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Storm petrel within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
	Disturbance: Operations during the construction phase could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	<p>To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale</p>	Yes

			in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to breeding Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a	Yes

			biosecurity risk assessment and mitigation strategy.	
Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb resting and foraging Shag, Great Black-backed Gull or Lesser Black-backed Gull utilising the SPA at sea.	Yes	To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting birds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on	Yes

	the island or reintroduced to the rodent-free St Agnes and Gugh.		arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Seabird assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
	Disturbance: Construction activity could cause an increased amount of noise and activity which may disturb seabird assemblages resting or foraging at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be	Yes

			<p>organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting birds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	Yes	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures</p>	Yes

			outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation):	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
<ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (identified subsequent to designation): <ul style="list-style-type: none"> Shag 	Disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes

	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting birds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	<p>Yes</p>
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6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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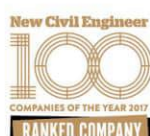
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Appendix 5.1d Green Bay HRA



Isles of Scilly Sea Defences – Green Bay

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



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ISLES OF SCILLY**

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Revision History

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V1.0	Draft Report	The Council of the Isles of Scilly
V2.0	Updates following comments from NE	The Council of the Isles of Scilly
V3.0	Updates following comments from NE	The Council of the Isles of Scilly
V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Green Bay.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as ‘European sites’ within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that “A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site’s conservation objectives.” This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation</p>

HRA stage	Description
<p>where no alternatives and adverse impacts remain</p>	<p>measures or alternative options should be identified.</p> <p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed.</p> <p>However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
<p>Stage 4: Compensatory measures</p>	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Green Bay is located on the east coast of the island of Bryher, approximate central OS Grid Reference SV 87946 14537. The beach comprises of sand and cobble with a well-established vegetated crest. Green Bay has a sheltered orientation within Tresco Sound and is not subject to significant wave action. The location of the proposed scheme can be seen in Figure 3-1.



Figure 3-1: Location of proposed scheme

3.2 Proposed Works

At Green Bay there is a need to improve the permeability of the crest to manage the risk of overtopping since it can lead to flooding of the boatyard in the immediate vicinity.

The proposed works include:

- Implementation of a resistant impermeable barrier at the crest to reduce the discharges reaching the boatyard. The crest will be excavated and impermeable geobags placed at a level of +5.5m, and then covered with natural reclaimed embankment along a stretch of 70m, to provide a permanent barrier layer.
- Reclaimed material will be replaced around the geobags with a minimum 0.3m cover to provide protection for them.
- The embankment will be vegetated to provide additional erosion protection as well as replicating existing habitats. The revegetated crest will be 5m wide, and contoured to blend into the immediate hinterland, to provide an embankment with a natural appearance and an ability to reduce flooding into the boatyard. A geomat will be implemented on the rear slope of the fill to help stabilise the slope whilst vegetation establishes itself.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Green Bay will be undertaken over approximately six days in February 2025.

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between April and August 2024.

Materials will either be delivered directly to the beach via barge using the landing site on the beach, or if not feasible, will be landed and stored at the closest feasible site and transported from Church Quay southwards along the beach at Green Bay to the location at the south of the beach. It is assumed that materials will be transported using an appropriately sized vehicle. All intertidal works, including vehicle movements on the beach will be conducted under dry conditions (i.e., when tide levels expose the work areas).

Construction works across the Green Bay site will entail the implementation of geobags. A 30 tonne excavator will undertake all excavation of the crest, stripping back the existing beach berm, with the excavated material stored on site for reuse as backfill material.

Impermeable geobags will be placed within the crest for a stretch of 70m and covered with natural reclaimed embankment. Reclaimed material will also be replaced around the geobags with a minimum 0.3m cover to provide protection for them. The crest will then be planted.

Once complete, the construction site will be demobilised, and all plant and construction materials will be removed from site, and all disturbed areas will be reinstated to their former condition.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located immediately adjacent to the Isles of Scilly Special Protection Area (SPA) and 100m from the Isles of Scilly Complex Special Area of Conservation (SAC). The Isles of Scilly Ramsar site is approximately 495m west of the proposed scheme.

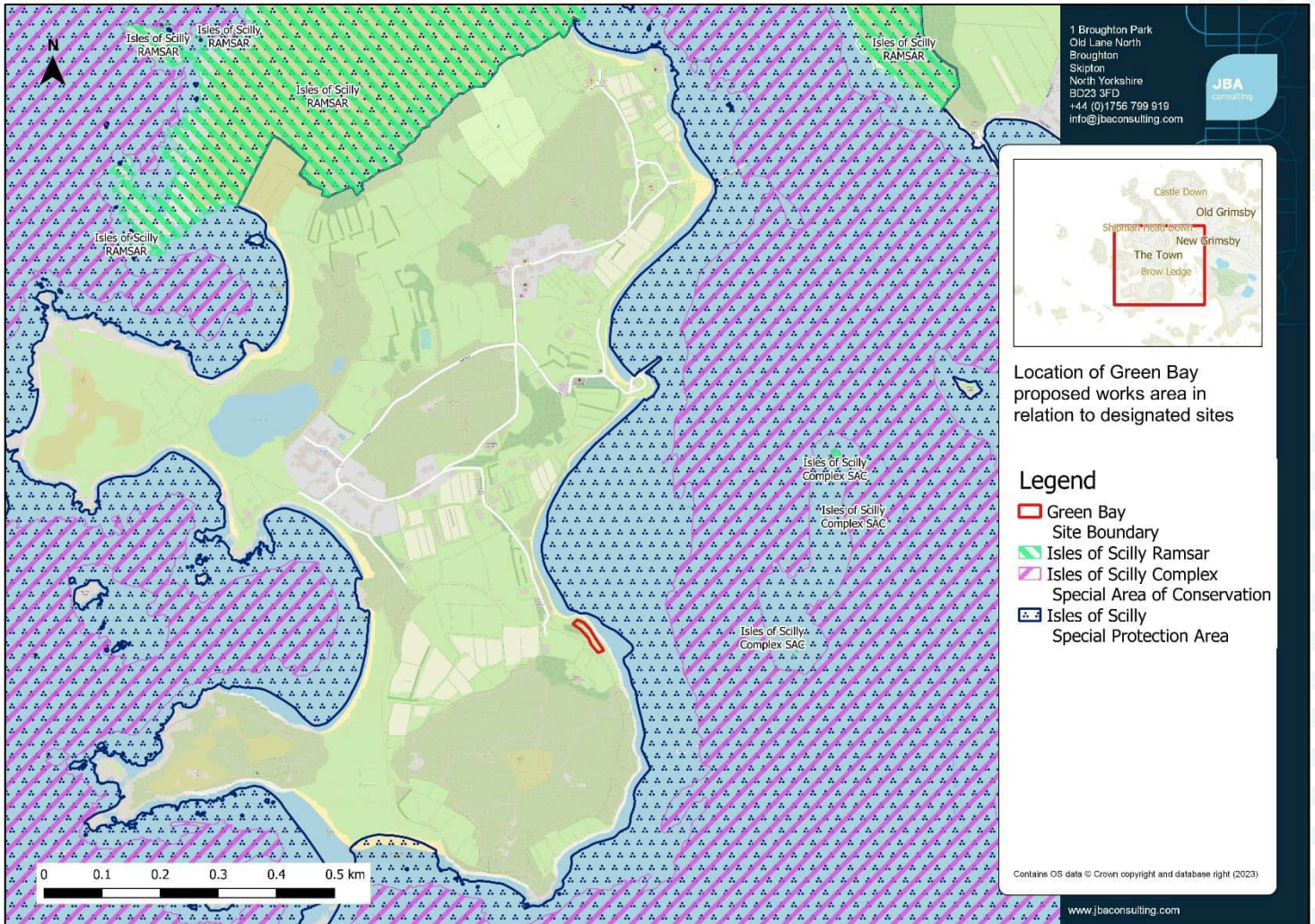


Figure 4-1: Location of Green Bay proposed works area in relation to designated sites; Overview

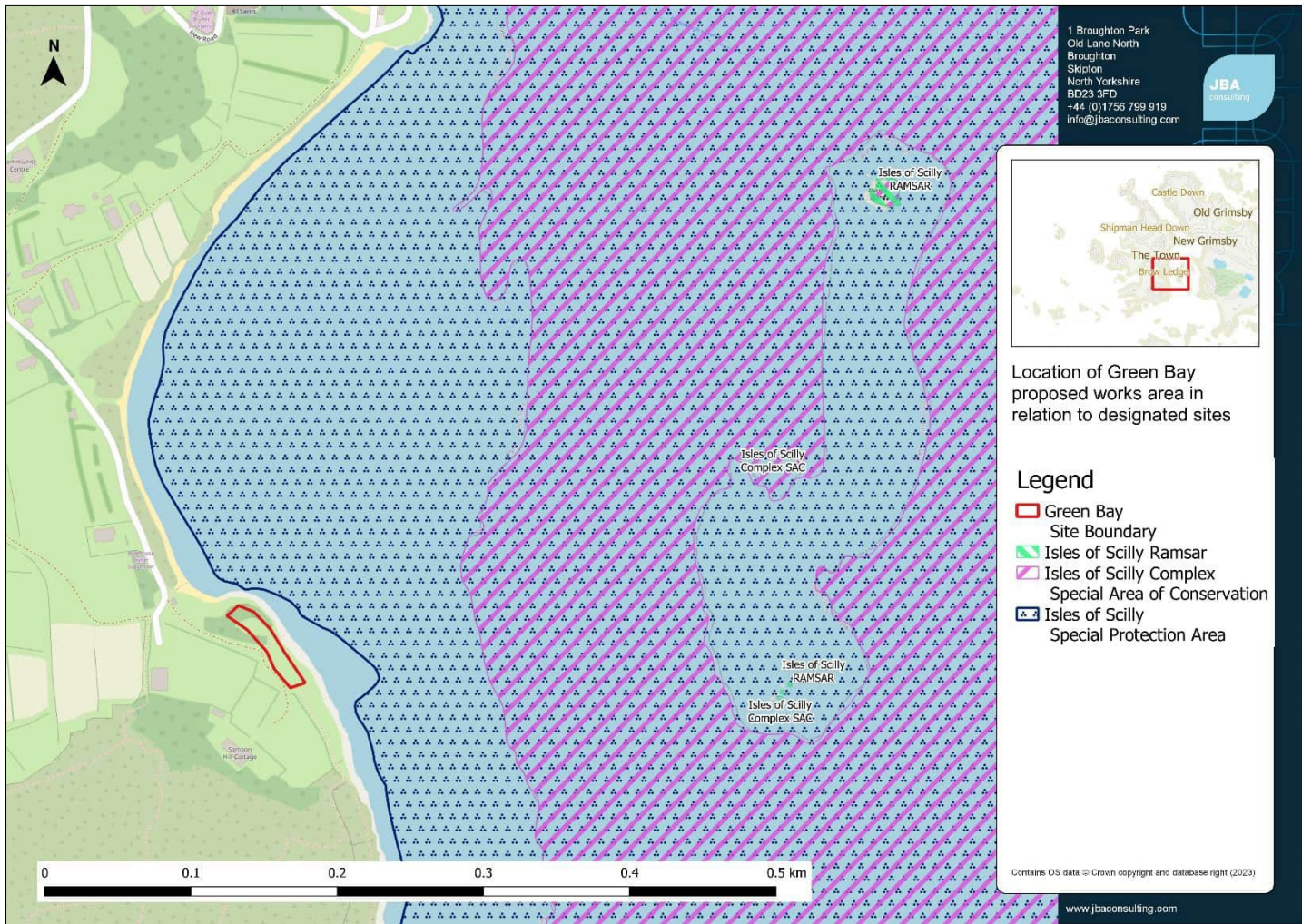


Figure 4-2: Location of Green Bay proposed works area in relation to designated sites; Close Up

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely

- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No

	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss/community simplification	<p>Materials will be delivered by barge using a landing site on the beach, or if not feasible, will be landed and stored at the closest site and transported from Church Quay southwards along the beach at Green Bay to the location at the south of the beach. There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.</p> <p>The works are confined to the beach and dune crest and will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during excavation of the crest.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

	<p>Competition from invasive non-native species (INNS)</p>	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS. There is therefore negligible risk of spreading or introducing marine INNS.</p>	<p>No</p>	<p>No potential for effects in combination with other PPPs have been identified.</p>	<p>No</p>
	<p>Water pollution</p>	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	
	<p>Alteration to coastal processes</p>	<p>The proposed measures to reduce coastal flooding at Green Bay may have a limited impact on coastal squeeze. Whilst the core of the design is based upon the use of geobags they are due to be covered with reclaimed material to form a natural embankment that blends with the existing habitat. The proposed design drawings indicate that the structure will be</p>	<p>No</p>	<p>There is no potential for effects in combination with other PPPs.</p>	<p>No</p>

		<p>located outside of the tidal frame, above the Highest Astronomical Tide (HAT) level. The northern end of the defence structure is expected to be approximately 10 m from the current MHWS mark, reducing to 6 m in the south. This will provide increased opportunity for intertidal habitats to migrate landward in response to the anticipated rise in sea level. Given that the proposed design will use granular fill to reflect the natural environment the expectation is that intertidal habitats within the SAC will not be adversely affected by the structure in the short-term.</p>			
	<p>Physical damage</p>	<p>There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and the tracking of vehicles across the site may result in a small amount of damage to habitats present.</p> <p>Materials will be delivered by barge using a landing site on the beach, or if not feasible, will be landed and stored at the closest site and transported from Church Quay southwards along the beach at Green Bay to the location at the south of the beach. The landing of the barge in this area could potentially result in temporary</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	

		damage to sandflats which are a feature of the SAC.			
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on Bryher. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Competition from invasive non- native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
	Physical damage/mortality	No Shore dock was recorded on site during the site survey. It is believed to be absent from the works area with no recent records of Shore dock being present. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No

Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works are small in scale and will take place above the MHWS tide level. While it is possible for seals to be hauled out on the beach during the works, works would not	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No

		continue if seals were present and likely to be harmed.			
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	Storm petrel are not known to nest on Bryher. The proposed works are sufficiently far away from known nesting sites of Storm petrel associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting individuals. Operations during the construction phase could however cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding Storm petrel within the SPA, in the absence of suitable on-site	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		avoidance and mitigation measures.			
	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
European Shag <i>Phalacrocorax aristotelis</i> (breeding) Great black-backed gull <i>Larus marinus</i> (breeding) Lesser black-backed gull <i>Larus fuscus</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for the SPA qualifying species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north	Yes	In combination assessment carried forward to Appropriate Assessment	

	<p>of Bryher Island. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA.</p> <p>Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.</p>			
Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
Physical damage/mortality	<p>The works areas do not contain any nesting habitat for breeding Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.</p>	No	No potential for effects in combination with other PPPs have been identified.	No
Invasive non-native species (INNS)	<p>Brown rats pose a threat to nesting birds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

		to the island or reintroduced to the rodent-free St Agnes and Gugh.			
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain nesting habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the seabird assemblage of the SPA and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	The proposed works are sufficiently far away from any known nesting sites of the breeding seabird assemblage of the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by seabird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	

	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull Species regularly supported during the breeding season (identified subsequent to designation): <ul style="list-style-type: none"> • Shag 	Habitat loss/ community simplification	The works area is not known as a breeding habitat for Storm petrel, Lesser black-backed gull or Shag and habitats within or adjacent to the site do not provide nesting opportunities. There will therefore be no foraging or breeding habitat of these breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	Storm petrels are not known to nest on Bryher however Lesser black-backed gulls and Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar site and it is therefore not considered that the works will result in disturbance to any nesting species. However, operations during the construction phase could cause	Yes	In combination assessment carried forward to Appropriate Assessment	Yes

		disturbance to seabird assemblages resting or foraging at sea within the Ramsar site.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to breeding seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): Shag	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 100m
Isles of Scilly SPA	Adjacent
Isles of Scilly Ramsar	Approximately 495m

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Green Bay are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, including Green Bay are located on the island of Bryher. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2. avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I Habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat Loss: Works are to reinstate the crest at the rear of the bay and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach. Materials will be delivered by barge using a landing site on the beach, or if not feasible, will be landed and stored at the closest site and transported from Church Quay southwards along the beach at Green Bay to the location at the south of the beach. There is potential that the habitat 'sandflats not covered by	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly	Yes

	<p>seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.</p> <p>The works are confined to the beach and dune crest and will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during excavation of the crest.</p>		<p>recover following the completion of the works.</p>	
	<p>Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.</p>	<p>Yes</p>	<p>Any damage to habitats present within the site via the construction works and barge landing will be temporary and localised.</p> <p>To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p>	<p>Yes</p>
	<p>Water pollution: Construction activity may result in accidental fuel or</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be</p>	<p>Yes</p>

	concrete spills which could cause changes in water chemistry and habitats classified within the Isles of Scilly Complex SAC.		implemented on site, as outlined in Section 6.3.	
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats used by Grey seal within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin. Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works	Yes

			will take place until the seal has moved off of its own accord.	
Isles of Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Storm petrel within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Operations during the construction phase could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to breeding Storm	Yes	Biosecurity measures will be put in place to ensure the proposed works do not	Yes

	<p>petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>		<p>result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
<p>Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	<p>Yes</p>

	<p>Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb Shag, Great Black-backed Gull or Lesser Black-backed Gull utilising the SPA.</p>	<p>Yes</p>	<p>To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	<p>Yes</p>
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting birds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be</p>	<p>Yes</p>

			implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Seabird assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Disturbance: Construction activity could cause an increased amount of noise and activity which may disturb seabird assemblages resting or foraging at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the	Yes

			size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting birds within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity	Yes

			risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Species regularly supported during the breeding season (identified subsequent to designation): <ul style="list-style-type: none"> Shag 	Disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting birds	Yes	Biosecurity measures will be put in place to ensure the proposed works do not	Yes

	<p>within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>		<p>result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
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6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.1e: Kitchen Porth HRA



Isles of Scilly Sea Defences – Kitchen Porth

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



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ISLES OF SCILLY**

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Revision History

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V1.0	Final Report	The Council of the Isles of Scilly
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V3.0	Updates following comments from NE	The Council of the Isles of Scilly
V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Kitchen Porth.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as ‘European sites’ within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that “A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site’s conservation objectives.” This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment where no	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p>

HRA stage	Description
alternatives and adverse impacts remain	<p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Kitchen Porth is located on the northeast coast of the island of Bryher, approximate central OS Grid Reference SV 88043 15482. It is a small beach composed of mainly sand with some cobbles. The south corner of the beach is vulnerable to wave activity. This wave activity leads off the ram and embankment to the rear of the beach. Longer period waves from the Atlantic diffract around the north of the island into this area. The location of the proposed scheme can be seen in Figure 3-1.

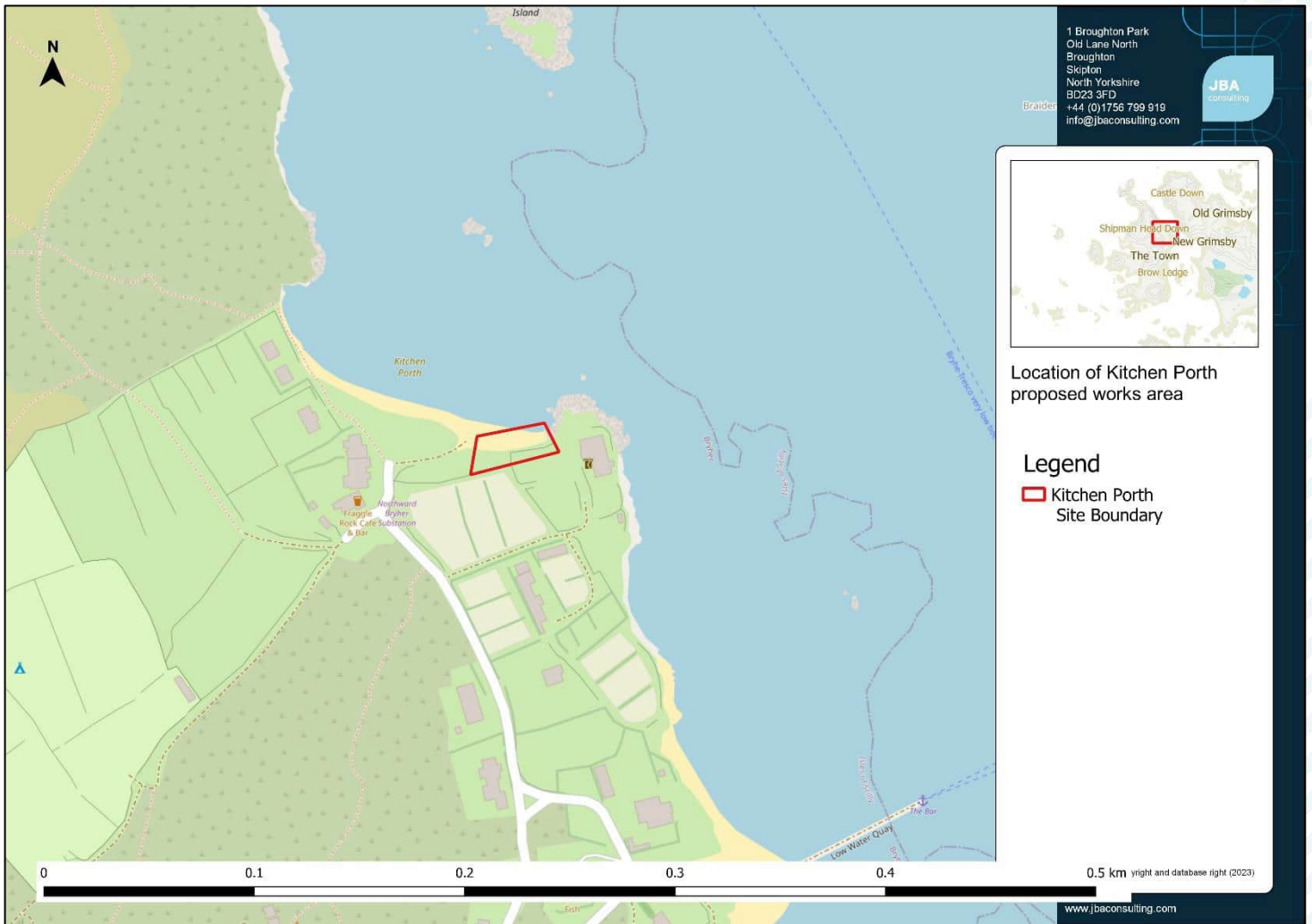


Figure 3-1: Location of proposed scheme

3.2 Proposed Works

At Kitchen Porth there is a need to increase defences to protect a cluster of residential and non-residential properties from flood risk from overtopping, along with the access road to the high-tide quay, the Shipman Head and Shipman Down (Bryher) SSSI and the Isles of Scilly Ramsar.

The proposed works include:

- The provision of additional armourstone in front of the existing structures for approximately 40m from the eastern corner of the beach up to the exit from the beach to the west to protect the exposed embankment and Ram from wave attack.
- The slope of the armourstone will be 1:2, comprising of a mix of 1 to 3 tonne armourstone, either reclaimed from existing resources on the island or imported. It will tie into existing levels at each end, into the existing bank to the north and into the rock outcrop to the south. The implementation of this armourstone should dissipate the wave energy and prevent direct attack on the Ram.
- The proposed armourstone does not include an impermeable layer, nor is the crest level proposed to be increased, and so some overtopping discharge is still expected to reach/percolate to the gardens of the leeward properties.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Kitchen Porth will be undertaken over approximately 20 days between September and October 2024.

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between April and August 2024.

Materials will either be delivered directly to the beach via barge, using the landing site on Kitchen Porth beach, or if not feasible, landed and stored at the closest feasible site and transported along the proposed access track. It is assumed that materials will be transported to the site using a 30 tonne truck, or alternative smaller vehicle if required.

Construction works across Kitchen Porth entail the provision of additional armourstone in front of existing structures. It is assumed that the 1 to 3 tonne armourstone will be moved into position using a 360° 30 tonne excavator.

Once complete, the construction site will be demobilised, and all plant and construction materials will be removed from site, and all disturbed areas will be reinstated to their former condition.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located adjacent to the Isles of Scilly Special Protection Area (SPA), 80m from the Isles of Scilly Complex Special Area of Conservation (SAC) and 120m from the Isles of Scilly Ramsar, as shown in Figures 4-1 and 4-2.

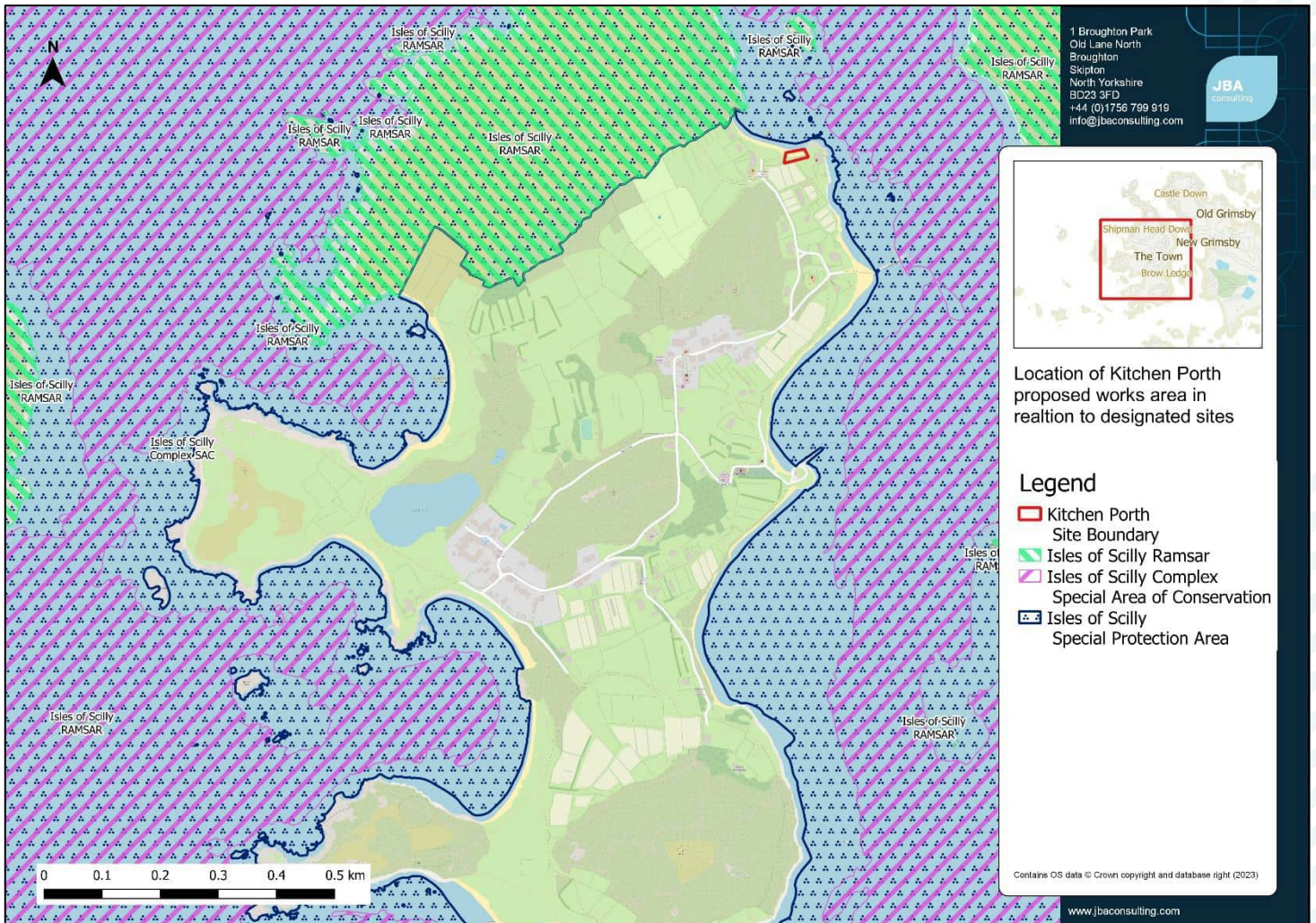


Figure 4-1: Location of Kitchen Porth proposed works area in relation to designated sites; Overview

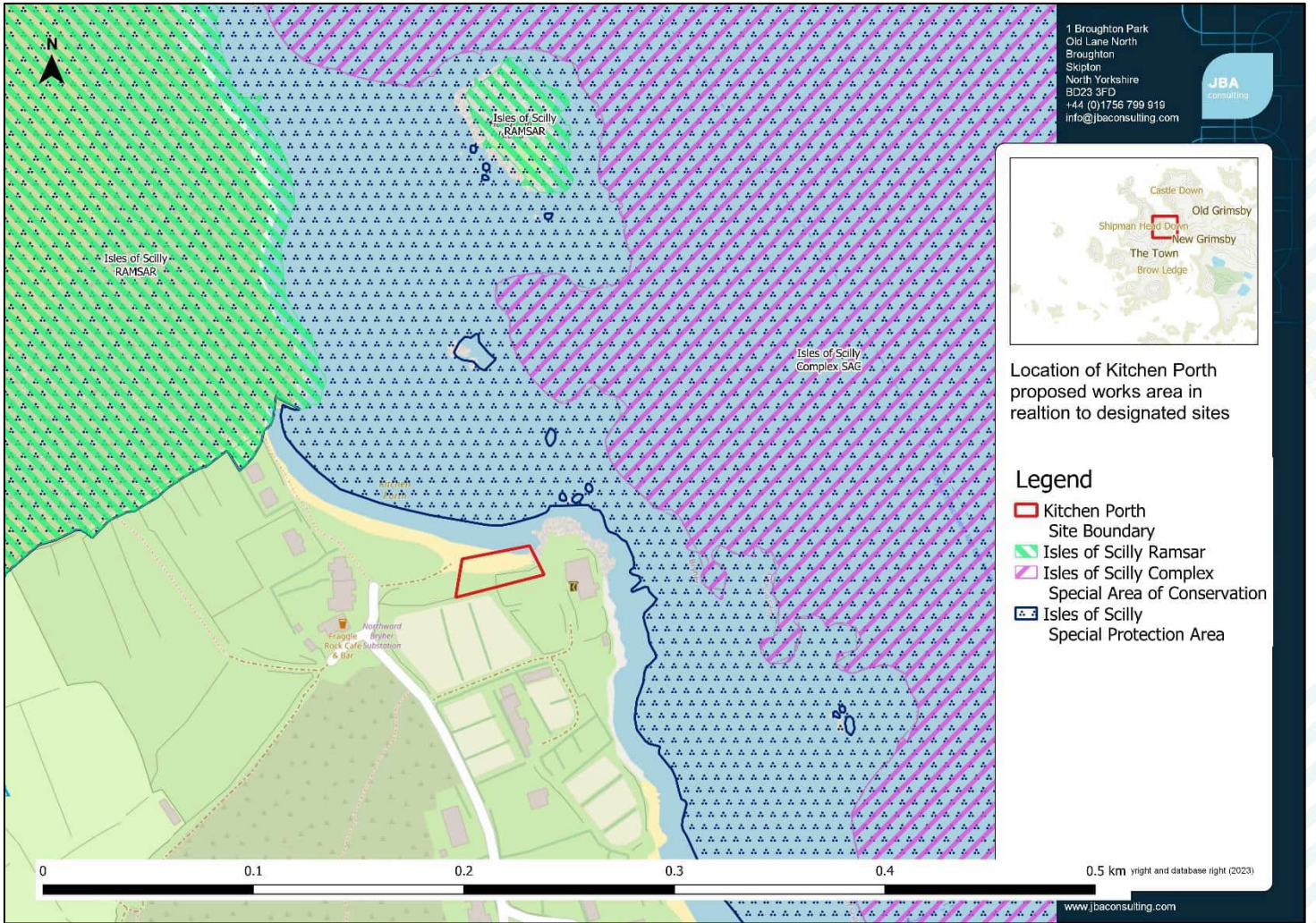


Figure 4-2: Location of Kitchen Porth proposed works area in relation to designated sites; Close Up

4.1.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.1.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.2 Isles of Scilly Special Protection Area (SPA)

4.2.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.2.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.3 Isles of Scilly Ramsar

4.3.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water	Yes	In combination assessment carried forward to Appropriate Assessment	

		chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss/community simplification	<p>Materials will either be delivered directly to the beach via barge, using the landing site on Kitchen Porth beach, or if not feasible, landed and stored at the closest site and be transported along the proposed access track. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p> <p>The works are confined to the beach and existing structure and are therefore not taking place directly on any Annex I habitats. Works will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction due to armour stone and material storage.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

	<p>Competition from invasive non-native species (INNS)</p>	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS. There is therefore negligible risk of spreading or introducing marine INNS.</p>	<p>No</p>	<p>There is no potential for effects in combination with other PPPs.</p>	<p>No</p>
	<p>Water pollution</p>	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	
	<p>Alteration to coastal processes</p>	<p>Although the proposed design is considered as an effective measure for reducing coastal erosion and flooding at Kitchen Porth, the structure will be expected to have a negative impact on intertidal habitats in terms of coastal squeeze. The proposed defence structure currently sits above the MHWS mark. Design drawings indicate</p>	<p>No</p>	<p>There is no potential for effects in combination with other PPPs.</p>	<p>No</p>

		<p>that the toe of the defence is approximately 5 m from the current MHWS mark at the eastern end of the defence and 10 m to the west. This will provide a limited capacity for intertidal habitat to respond and adapt to the anticipated rise in sea levels. Additionally, placing the rock armour in front of the current beach crest will encroach approximately 5 m upon the sandy beach reducing beach width and further limiting available space for intertidal habitat to migrate landward. Whilst the proposed design may have potential impacts with respect to coastal squeeze, these impacts will be minor and small-scale. Any impacts will be local to the proposed site and will not impact the overall site integrity.</p>				
	Physical damage	<p>There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and the tracking of vehicles across the site may result in a small amount of damage to habitats present.</p> <p>Materials will either be delivered directly to the beach via barge, using the landing site on Kitchen</p>	Yes	In combination assessment carried forward to Appropriate Assessment		

		Porth beach, or if not feasible, landed and stored at the closest site and be transported along the proposed access track. The landing of the barge in this area could therefore result in the damage to sandflats which are a feature of the SAC.			
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on Bryher. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey. It is believed to be absent from the works area with no recent records of Shore dock being present. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No

	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result loss of marine habitat.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore, there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal	Yes	In combination assessment carried forward to Appropriate Assessment	

		within the SAC, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS). While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Storm petrels are not known to nest on Bryher. The proposed works are sufficiently far away from known nesting sites of Storm petrel associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting individuals. Operations during the construction phase could however cause disturbance to	Yes	In combination assessment carried forward to Appropriate Assessment	

		Storm petrel foraging or resting at sea within the SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
European Shag <i>Phalacrocorax aristotelis</i> (breeding)	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide	No	No potential for effects in combination with other PPPs have been identified.	No

Great black-backed gull <i>Larus marinus</i> (breeding) Lesser black-backed gull <i>Larus fuscus</i> (breeding)		nesting opportunities for these species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.		
	Noise and visual disturbance	Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA. Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Shag, Great black-backed gull and Lesser black-backed gull within the SPA, in the absence of suitable	Yes	In combination assessment carried forward to Appropriate Assessment

		on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain nesting habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the breeding seabird assemblage and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in	Yes	In combination assessment carried forward to Appropriate Assessment	

		disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Isles of Scilly SPA.			
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by seabird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to breeding seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Isles of Scilly Ramsar					
Species regularly supported during the breeding	Habitat loss/ community simplification	The works area is not known to contain breeding habitat for Storm petrel, Lesser black-	No	No potential for effects in combination with other PPPs have been identified.	No

<p>season (as identified at designation):</p> <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> Shag 		backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat lost as part of the proposed scheme.		
	Noise and visual disturbance	<p>Storm petrels are not known to nest on Bryher however Lesser black-backed gulls and Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar site and it is therefore not considered that the works will result in disturbance to any nesting species.</p> <p>However, operations during the construction phase could cause disturbance to Storm petrel, Lesser black-backed gull or Shag resting or foraging at sea within the Ramsar site.</p>	Yes	In combination assessment carried forward to Appropriate Assessment
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment

	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to breeding seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 80m
Isles of Scilly SPA	Adjacent
Isles of Scilly Ramsar	Approximately 120m

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Kitchen Porth are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, including Kitchen Porth are located on the island of Bryher. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide. 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Habitat loss: Works are to the front of the existing structures and embankment at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction due to armour stone and material storage. Materials will either be delivered directly to the beach via barge, using the	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.	Yes

	landing site on Kitchen Porth beach, or if not feasible, landed and stored at the closest site and be transported along the proposed access track. The landing of the barge in this area could therefore result in the temporary loss of sandflats.		To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	
	Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.	Yes	Any damage to habitats present within the site via the construction works and barge landing will be temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	Yes
Annex II species (primary reason for selection): Shore dock	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

	and habitats used by Grey seal within the Isles of Scilly Complex SAC.			
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	<p>The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.</p> <p>Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.</p>	Yes
Isles of Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

	and habitats utilised by Storm petrel within the SPA.			
	Disturbance: Operations during the construction phase could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	<p>To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof</p>	Yes

			containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb resting and foraging Shag, Great Black-backed Gull or Lesser Black-backed Gull utilising the SPA at sea.	Yes	To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and	Yes

			abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity	Yes

			risk assessment and mitigation strategy.	
Seabird assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity could cause an increased amount of noise and activity which may disturb seabird assemblages resting or foraging at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures	Yes

	<p>which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>		<p>include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
<p>Isles of Scilly Ramsar</p>				
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull 	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	<p>Yes</p>

<p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	<p>Disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.</p>	<p>Yes</p>	<p>To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	<p>Yes</p>
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste</p>	<p>Yes</p>

			<p>management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
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6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.1f: Porth Killier HRA



Isles of Scilly Sea Defences – Porth Killier

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



Council of the
ISLES OF SCILLY

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V1.0	Final Report	The Council of the Isles of Scilly
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V3.0	Updates following comments from NE	The Council of the Isles of Scilly
V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

Prepared by Hannah Webster BSc MSc
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 Senior Ecologist

Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Agnes site Porth Killier.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as 'European sites' within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives." This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of "people over wind" (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment where no	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p>

HRA stage	Description
alternatives and adverse impacts remain	<p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Site 51 – Porth Killier is located on the north of St Agnes Island the southernmost populated island in the Scilly Isles. The central point of the site has OS Grid Reference of SV 88169 08490. There has been demonstrated erosion of the softer ground in front of the toe of the existing wall, this could begin to undermine the wall. There has also been displacement of the armour stone and boulders and exposure of underlying concrete mattress revetment. The location of the proposed work can be seen in Figure 3-1.

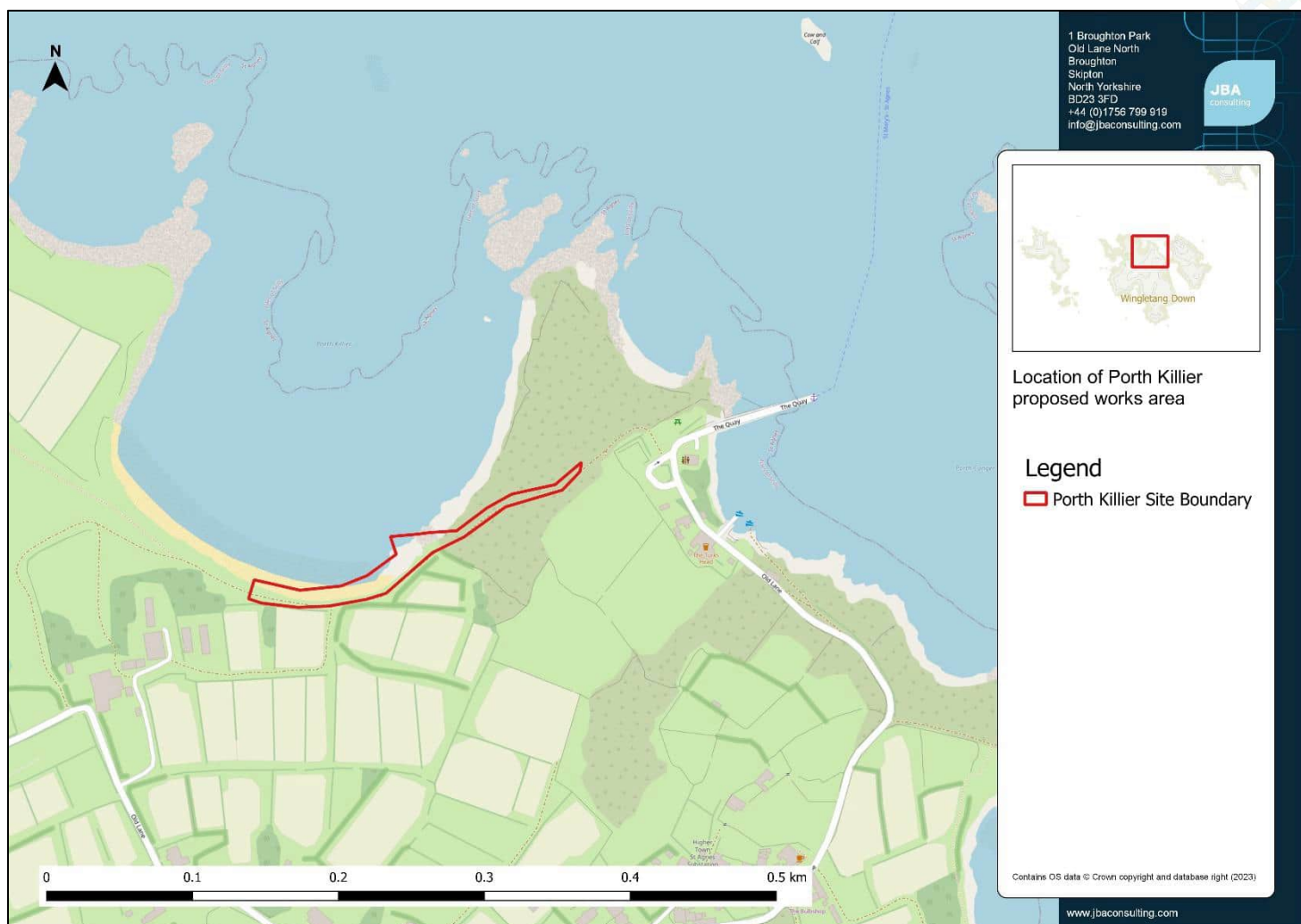


Figure 3-1 Location of proposed work

3.2 Proposed Works

Coastal erosion and flood risk at Porth Killier presents a risk of inundation and contamination at the Big Pool, along with a risk of undermining the road that runs along the southern extent of Porth Killier and residential and non-residential properties and infrastructure in the vicinity.

The Porth Killier site has been divided into three areas of intervention: the sea wall; the eastern end; and the western end. Overtopping has not occurred at the western end and therefore no works are proposed there. The proposed works for the sea wall and the eastern end are outlined below.

The seawall:

- Implementation of a rock scour protection at the foundation of the seawall. Wider toe protection of 1 to 3 tonne rock size with a minimum width of 3m is recommended to protect the wall from undermining and failure, and also to reduce overtopping.
- A 30m section of the eastern side of the wall has been identified as the most damaged and as such, a 3m toe-berm of 1 to 3 tonne rock armour is proposed here. In some locations where damage is more severe, local repairs may be required prior to placing the rocks.
- A 35m section on the western side has been identified as the least damaged and as such, the rock toe here will be characterised by 1.9m wide 1 to 3 tonne rocks and 1.1m of cobbles, which will tie into the existing rock headland.
- Rock material will be sourced locally where possible but will need to be imported if unavailable.

Eastern end:

- Construction of a rock structure revetment with 1 to 3 tonne material to reduce ram erosion. The rock revetment would be placed up to the crest of the underside of the ram/outcrop to reduce the cut back towards the road. In order to minimise the volume of rock required, rock armour will be protected by a cobble toe that will make use of existing materials.
- The presence of the revetment will improve the stability of the ram and also act as a reduction to wave overtopping events.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Porth Killier will be undertaken over approximately 41 days between September and October 2023.

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between June and September 2023. Materials will either be delivered directly to Porth Killier beach by barge using the landing site on the beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track.

It is assumed that after delivery, materials, including rock armour, will be transported using a 20 tonne truck, or alternative smaller vehicle if required due to the width of the track and stored in the temporary storage area.

Construction works at Porth Killier will entail implementation of a rock scour protection at the foundation of the sea wall at the western end, and construction of a rock structure revetment at the eastern end through placement of rock armour and cobbles which will tie into the existing rock headland on the western side.

It is assumed that a 360° 30 tonne excavator and a 6 tonne dumper truck will be used for the construction works. 1 to 3 tonne rocks will be placed at the foundation of the seawall, with a minimum width of 3m. On the eastern side of the seawall which is most damaged, an excavator will move 1 to 3 tonne rocks to create a 3m toe-berm at the bottom of a 30m section of the seawall. On the western side of the seawall which is the least damaged, an excavator will move 1 to 3 tonne rocks to create a 1.9m toe along a 35m section of the seawall. Cobbles sourced from the beach will also be moved to the western side of the seawall and will tie into the existing rock headland.

At the eastern end of Porth Killier, an excavator and dumper truck will be used to construct a rock structure revetment with 1 to 3 tonne material. Cobbles sourced from the beach will be moved to provide a protective cobble toe to the rock revetment.

Once complete, the working area will be demobilised and all plant and construction materials will be removed from site.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located within the Isles of Scilly Special Protection Area (SPA) and Ramsar site and 135m from the Isles of Scilly Complex Special Area of Conservation (SAC).

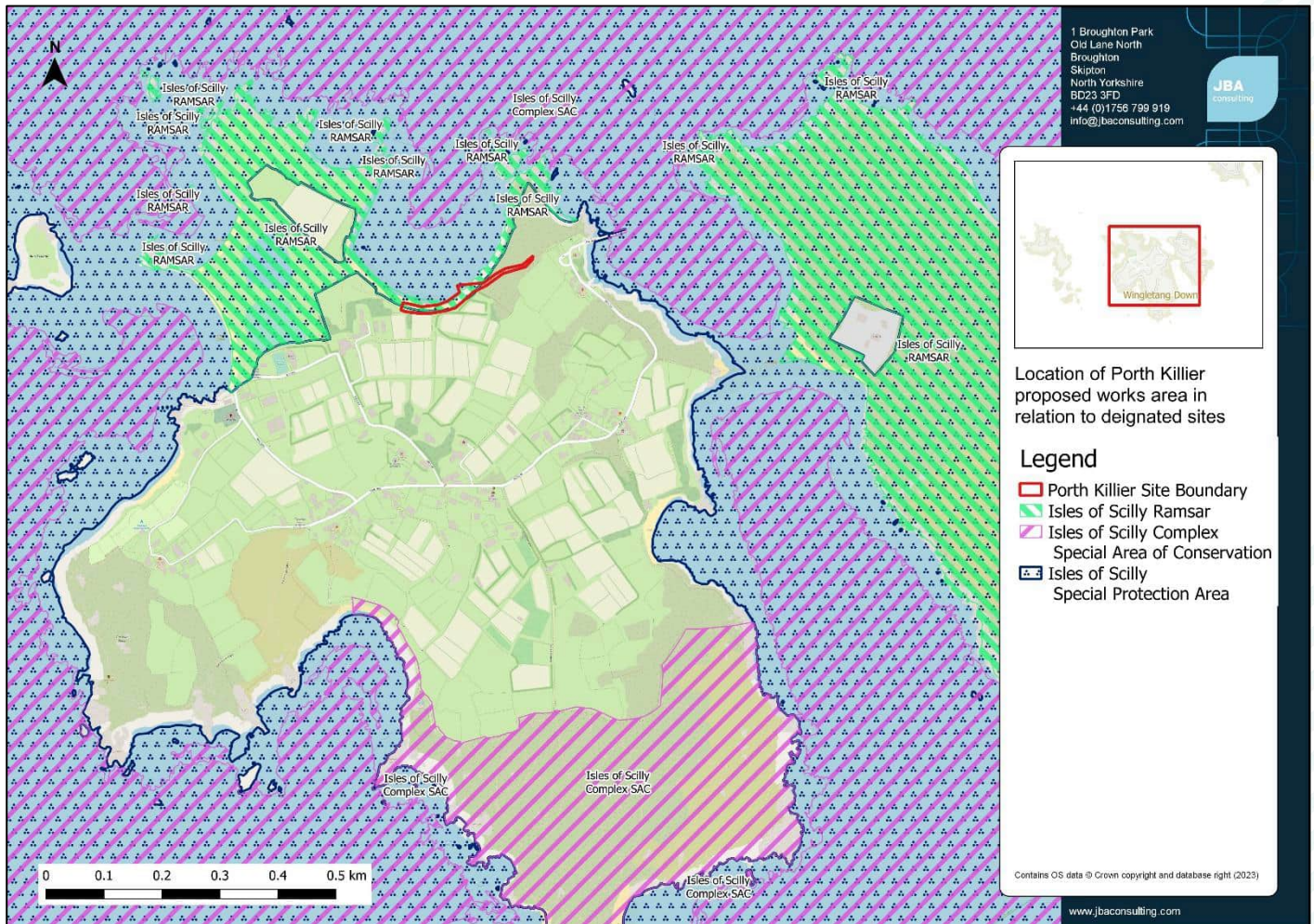


Figure 4-1: Location of Porth Killier proposed works area in relation to designated sites; Overview

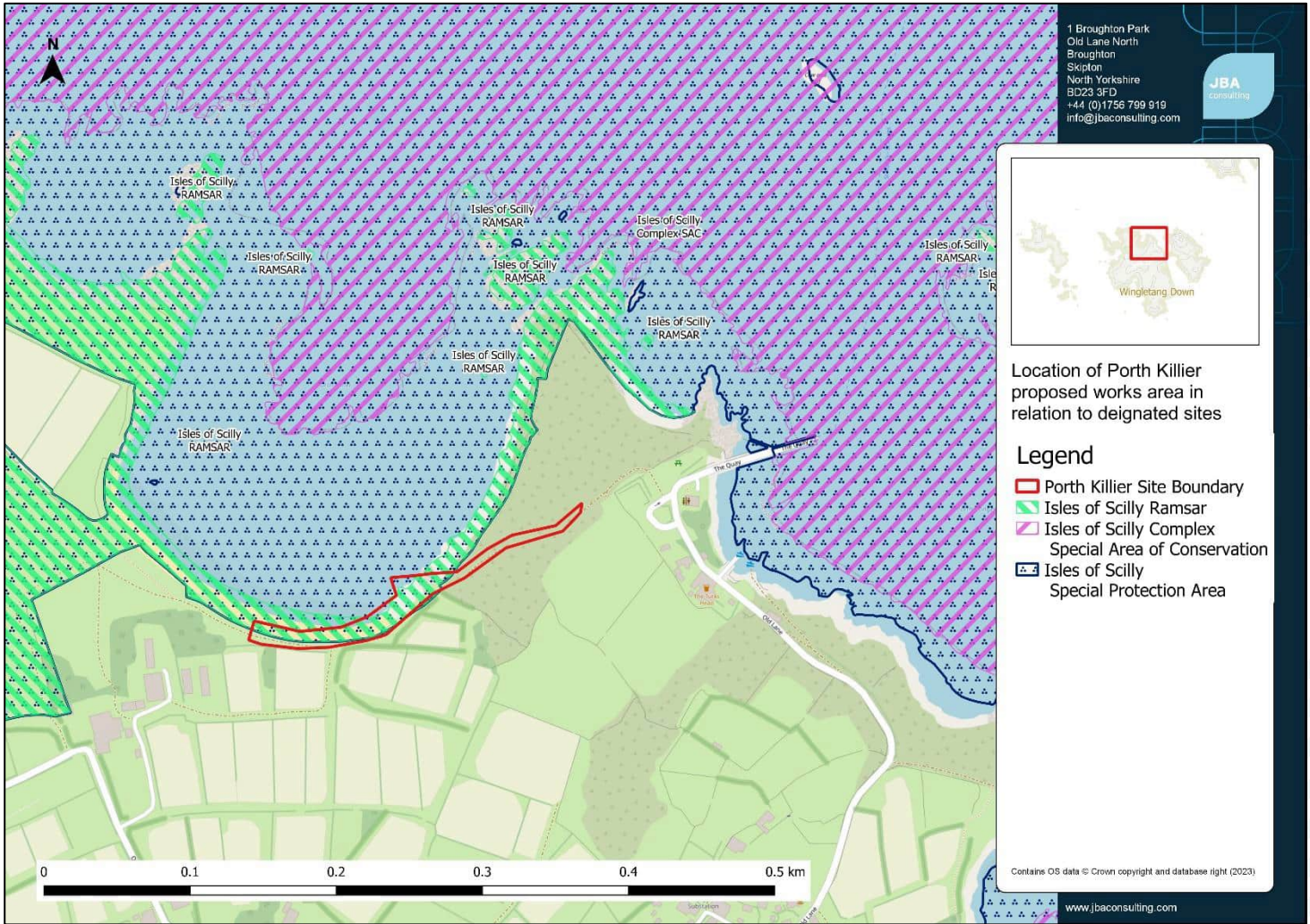


Figure 4-2: Location of Porth Killier proposed works area in relation to designated sites; Close Up

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection: Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely

- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the	Yes	In combination assessment carried forward to Appropriate Assessment	

		habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.		
<p>Annex I habitats:</p> <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	<p>The works are confined to the seawall and the top of the beach and therefore not taking place directly on any Annex I habitats. However, there may be temporary losses within the construction areas at the top of the beach.</p> <p>Materials will either be delivered directly to Porth Killier beach by barge using the landing site on the beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track.</p> <p>The intertidal habitat in this area is predominantly large intertidal boulders with bedded planes, interspersed with rock pools. However, between the cobbles and in areas closer to the low tide mark intertidal sands are present. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p>	Yes	In combination assessment carried forward to Appropriate Assessment
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment
	Alteration to coastal processes	The construction of the rock revetment to reduce the ram erosion may have the potential to contribute towards coastal squeeze. The design drawings indicate that the rock armour will encroach up to 4 m beyond the MHWS tidal level. This will provide limited capacity for intertidal	No	There is no potential for effects in combination with other PPPs.

		<p>habitat to adapt to rising sea levels. Furthermore, the placement of rock armour up to the crest of the ram outcrop will cover an extensive area of intertidal habitat formed upon the exposed bedrock. This loss of habitat will exacerbate coastal squeeze encroaching into an area that could otherwise provide compensation against rising sea levels. Whilst the proposed design may have potential impacts with respect to coastal squeeze, these impacts will be minor and small-scale. Any impacts will be local to the proposed site and will not impact the overall site integrity.</p>				
	Physical damage/mortality	<p>There is the potential for works to damage sandflats, which are a feature of the SAC. The works are confined to the seawall and the top of the beach. Materials will either be delivered directly to Porth Killier beach by barge using the landing site on the beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track.</p> <p>The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.</p>	Yes	In combination assessment carried forward to Appropriate Assessment		
	Competition from invasive non-native species (INNS)	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS,</p>	No	No potential for effects in combination with other PPPs have been identified.	No	

		<p>however, this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS. There is therefore negligible risk of spreading or introducing marine INNS.</p>			
<p>Annex II species (primary reason for selection): Shore dock</p>	Habitat loss	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on St Agnes. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on St Agnes. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
<p>Annex II species (not primary reason for selection): Grey Seal</p>	Direct habitat loss	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in	No

		alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in loss of marine habitat.		combination with these works.	
	Noise and visual disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS). While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Direct habitat loss	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel nesting habitat will be lost as part of the works.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No

	Noise and visual disturbance	Storm petrel are known to breed within the SPA on St Agnes. However, no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. Operations during the construction phase could however cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	In combination assessment carried forward to Appropriate Assessment.	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Direct habitat loss	The works area is not known to contain breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-	No	No potential for effects in combination with other PPPs have been	No

<p>European Shag <i>Phalacrocorax aristotelis</i> (breeding)</p> <p>Great black-backed gull <i>Larus marinus</i> (breeding)</p> <p>Lesser black-backed gull <i>Larus fuscus</i> (breeding)</p>		backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for the SPA qualifying species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.		identified.	
	Noise and visual disturbance	Lesser black-backed gull and Great Black-backed Gull are known to breed within the SPA on St Agnes. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA. Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats	Yes	In combination assessment carried forward to Appropriate Assessment	

		to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.			
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the seabird assemblage of the SPA and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by seabird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats	Yes	In combination assessment carried forward to Appropriate Assessment	

		to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.			
Isles of Scilly Ramsar					
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	Direct habitat loss	The works area is not known to contain breeding habitat for Storm petrel, Lesser black-backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Shag have not been recorded breeding on St Agnes and therefore it is not considered that the proposed works will have any significant effect on breeding Shag within the Ramsar site. Storm petrel and Lesser black-backed gull are known to breed within the Ramsar site on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Ramsar site.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	

	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 135m
Isles of Scilly SPA	Within Site
Isles of Scilly Ramsar	Within Site

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Porth Killier are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Three of these sites, including Porth Killier, are located on the island of St Agnes. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> • Sand banks which are slightly covered by sea water all the time • Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I habitats: <ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide 	Habitat Loss: Works are to restore the seawall at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach. Materials will either be delivered directly to Porth Killier beach by barge using the landing site on the beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track.	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.	Yes

	<p>There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.</p>		<p>To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p>	
	<p>Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats within the Isles of Scilly Complex SAC.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	<p>Yes</p>
	<p>Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.</p>	<p>Yes</p>	<p>Any damage to habitats present within the site via the construction works and barge landing will be temporary and localised.</p> <p>To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p> <p>An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most</p>	<p>Yes</p>

			appropriate landing site in order to minimise impacts to SAC habitats.	
Annex II species (primary reason for selection): Shore dock	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats with Shore dock present within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Annex II species (not primary reason for selection): Grey seal	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats used by Grey seals within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin. Prior to works commencing each day,	Yes

			the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.	
Isles f Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Storm petrel within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Noise and visual disturbance: Construction activity may cause an increased amount of noise and visual activity which could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential	Yes

			disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a	Yes

			biosecurity risk assessment and mitigation strategy.	
Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species resting and foraging within the SPA.	Yes	To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown	Yes

	could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.		rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Seabird Assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1	Yes

	by breeding bird species within the SPA.			
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species foraging and resting at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of	Yes

			<p>rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
Isles of Scilly Ramsar				
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> Storm Petrel 	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.2.1</p>	Yes
	<p>Noise and visual disturbance: Construction activity may cause an increased amount of noise</p>	Yes	<p>To reduce the impact that working on multiple sites could have on</p>	Yes

<ul style="list-style-type: none"> • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	<p>and activity which may disturb bird species resting and foraging at sea.</p>		<p>seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all</p>	<p>Yes</p>

			<p>contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
--	--	--	--	--

6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.1g: Porth Coose HRA



Isles of Scilly Sea Defences – Porth Coose

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

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ISLES OF SCILLY

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V1.0	Final Report	The Council of the Isles of Scilly
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V3.0	Updates following comments from NE	The Council of the Isles of Scilly
V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Agnes site Porth Coose.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as ‘European sites’ within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that “A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site’s conservation objectives.” This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment where no	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p>

HRA stage	Description
alternatives and adverse impacts remain	<p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Porth Coose is located on the northwest border of St Agnes Island the southernmost populated island in the Scilly Isles. The site extends along approximately 140m of beach on the north west of the island with a central OS Grid Reference of SV 87744 08596. Big Pool SSSI sits behind the site, separated from the beach by low sand dunes, and provides the islands main drinking water supply. The coastline faces north and has areas of weakness where the revetment and erosion matting are exposed and the matting damaged. The displacement of rock armour stone and boulders has led to the exposure of the underlying concrete mattress revetment. The location of the proposed work can be seen in Figure 3-1.



Figure 3-1 Location of the proposed work

3.2 Proposed Work

Porth Coose provides protection to Big Pool, important freshwater habitat, wells, aquifers and local infrastructure. Defences have historically been severely overtopped and as such enhanced defences are required.

The proposed works include:

- Provision of a more robust and wider ridge crest along the entire length of the Porth Coose. The crest elevation would be increased through recharge using local and imported material, with rock bags at the rear filled with site won material to grade to existing levels.
- The bags will be placed on a prepared geotextile surface at the top of the slopes and fill material is to be placed behind to tie in the top of the bags to the ground behind. A geomat will be placed to stabilise this slope and encourage establishment of vegetation.
- The crest elevation will be increased to prevent overtopping and should be at approximately +7.3m.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Porth Coose will be undertaken over approximately 23 days between October and November 2023.

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between June and September 2023. Materials will either be delivered directly to Porth Coose beach by barge using the landing site on the adjacent Periglis beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest feasible site and transported along the access track (using the alternative access track during wet periods).

It is assumed that after delivery, materials will be transported using a 30 tonne truck, or alternative smaller vehicle if required.

Construction works at Porth Coose will entail the increase of crest elevation through recharge using movement of material, with a rock mattress (rock bag) laid directly on the existing crest on top of a geotextile. It is assumed that a 360° 30 tonne excavator will be used to move material.

Site won material from the excavation will be used to tie into existing ground. It is assumed that any excess material will be moved to the spare sand storage area to the north east.

Once complete, the working area will be demobilised and all plant and construction materials will be removed from site. The footpath running behind the crest will be reinstated.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located within The Isles of Scilly Special Protection Area (SPA) and Ramsar site and 40m from the Isles of Scilly Complex Special Area of Conservation (SAC).



Figure 4-1: Location of Porth Coose proposed works area in relation to designated sites; Overview

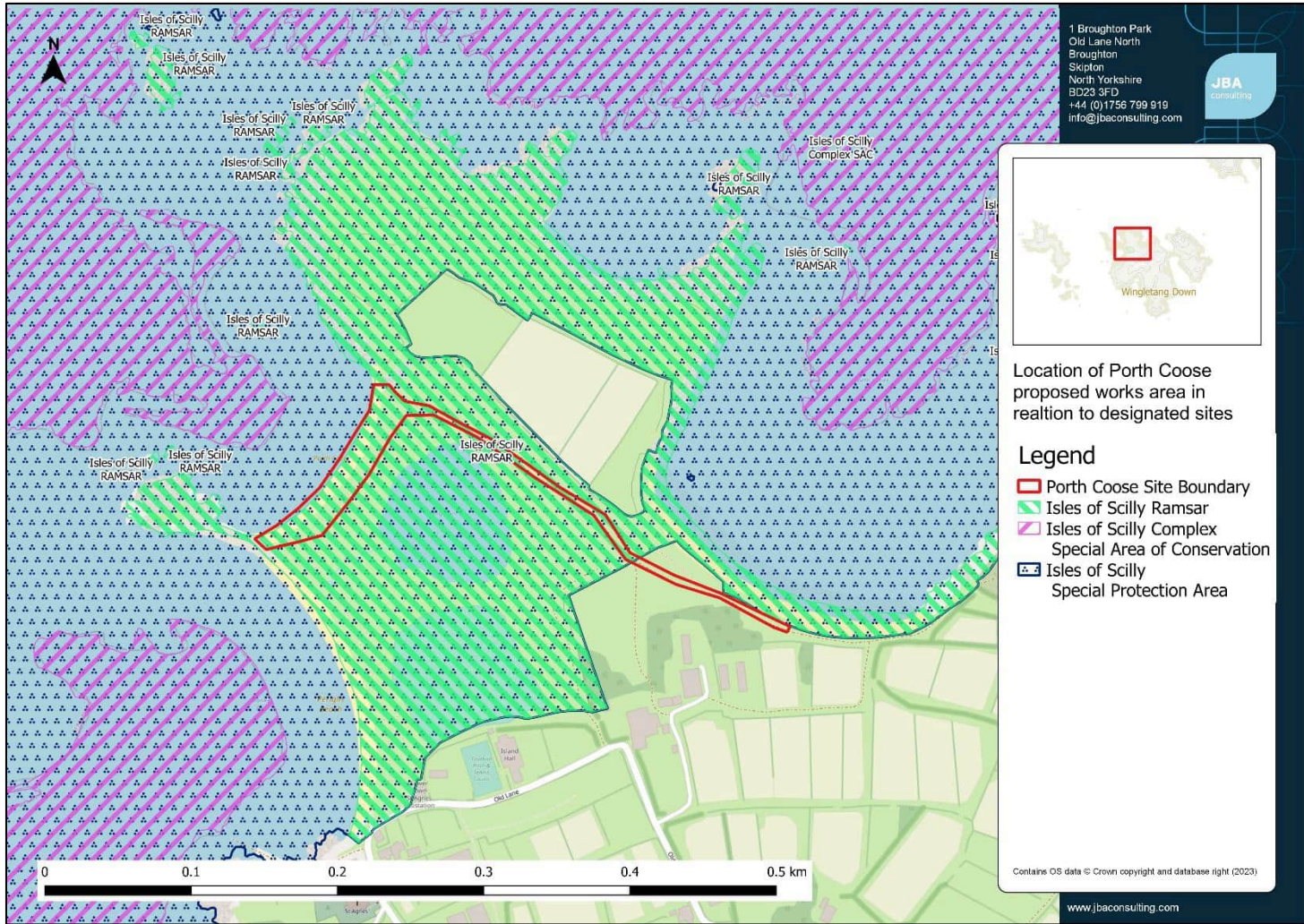


Figure 4-2: Location of Porth Coose proposed works area in relation to designated sites; Close Up

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection: Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely

- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of	Yes	In combination assessment carried forward to Appropriate Assessment	

		suitable on-site avoidance and mitigation measures.			
<p>Annex I habitats:</p> <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	<p>The works are confined to the crest at the rear of the beach and will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during excavation of the crest.</p> <p>Materials will either be delivered directly to Porth Coose beach by barge using the landing site on the adjacent Periglis beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track (using the alternative access track during wet periods). The intertidal habitat in this area is predominantly mixed substratum of boulders and cobbles. However, between the cobbles and in areas closer to the low tide mark intertidal sands are present. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
	Alteration to coastal processes	<p>Although the proposed design is considered as an effective measure for reducing wave overtopping and coastal flooding the structure will be expected to have a potentially negative impact on intertidal</p>	No	There is no potential for effects in combination with other PPPs.	No

		habitats in terms of coastal squeeze. The proposed defence structure will create a barrier that will prevent the natural landward transgression of intertidal habitats in response to increasing sea levels. However, the design drawings indicate that the defence structure is located above the current MHWS mark with the toe of the defence being approximately 15 m from the current MHWS mark at the southwestern end of the defence and 20 m to the northeast. The distance of the structure from the MHWS mark will provide reasonable capacity for the landward migration of intertidal habitats as they respond to changes in sea level. Therefore, no likely significant impacts to SAC Annex I features as a result of the proposed works via coastal squeeze are anticipated.			
	Physical damage/mortality	There is the potential for works to damage sandflats, which are which are a feature of the SAC. While works are focussed on the crest at the back of the beach, some sand and cobbles will be excavated from lower down, near or within the sandflats. Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which	No	No potential for effects in combination with other PPPs have been identified.	No

		would impact the annex I habitats present. Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however, this would not be expected to impact the Annex I habitats. Works will only take place above MHWS. There is therefore negligible risk of spreading or introducing marine INNS.			
Annex II species (primary reason for selection): Shore dock	Habitat loss	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on St Agnes. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on St Agnes. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however it would not be expected to	No	No potential for effects in combination with other PPPs have been identified.	No

		impact populations of Shore Dock.			
Annex II species (not primary reason for selection): Grey Seal	Direct habitat loss	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in loss of marine habitat.	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No
	Noise and visual disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS). While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
Isles of Scilly SPA					
	Habitat loss/ community	The works area is not known to contain breeding or foraging habitat for Storm	No	There are no other known projects which overlap	No

European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	simplification	petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel habitat will be lost as part of the works.		with the works areas. There is no potential for effects in combination with other PPPs.	
	Noise and visual disturbance	Storm petrel are known to breed within the SPA on St Agnes. However, no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. Operations during the construction phase could however cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	In combination assessment carried forward to Appropriate Assessment.	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No

	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
European Shag <i>Phalacrocorax aristotelis</i> (breeding) Great black-backed gull <i>Larus marinus</i> (breeding) Lesser black-backed gull <i>Larus fuscus</i> (breeding)	Direct habitat loss	The works area is not known to contain breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for these species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Lesser black-backed gull and Great Black-backed Gull are known to breed within the SPA on St Agnes. The proposed works are sufficiently far away from known nesting sites of these species, and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA. Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by birds within the SPA, in the absence of suitable on-site avoidance	Yes	In combination assessment carried forward to Appropriate Assessment	

		and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the seabird assemblage of the SPA and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	

	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by seabird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
Isles of Scilly Ramsar					
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> Shag 	Direct habitat loss	The works area is not known to contain breeding or foraging habitat for Storm petrel, Lesser black-backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Shag have not been recorded breeding on St Agnes and therefore it is not considered that the proposed works will have any significant effect on breeding Shag within the Ramsar site. Storm petrel and Lesser black-backed gull are known to breed within the Ramsar site on St Agnes. However no known breeding sites are in	Yes	In combination assessment carried forward to Appropriate Assessment	

		close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, operations during the construction phase could cause disturbance to Storm petrel, Lesser black-backed gull or Shag resting or foraging at sea within the Ramsar site.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Storm petrel, Lesser black-backed gull or Shag within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	Yes
	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 40m
Isles of Scilly SPA	Within Site
Isles of Scilly Ramsar	Within Site

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Porth Coose are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Three of these sites, including Porth Coose, are located on the island of St Agnes. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat Loss: Works are to restore the ridge crest at Porth Coose and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach. Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. The landing of the barge in this area will result in the temporary loss of sandflat habitat. There is potential that the habitat 'sandflats not	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly	Yes

	covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.		recover following the completion of the works	
	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.	Yes	Any damage to habitats present within the site via the construction works and barge landing will be temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats.	Yes

<p>Annex II species (primary reason for selection): Shore dock</p>	<p>Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact upon the habitats with Shore dock present within the Isles of Scilly Complex SAC.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	<p>Yes</p>
<p>Annex II species (not primary reason for selection): Grey seal</p>	<p>Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats used by Grey seal within the Isles of Scilly Complex SAC.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	<p>Yes</p>
	<p>Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.</p>	<p>Yes</p>	<p>The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin. Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out</p>	<p>Yes</p>

			seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.	
Isles f Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Storm petrel within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Noise and visual disturbance: Operations during the construction phase could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction	Yes

			works will not be significant..	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	Yes
Great Black-backed Gull (breeding) Shag (Breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

Lesser Black-backed Gull (breeding)	cause changes in water chemistry and habitats utilised by breeding bird species within the SPA			
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species resting and foraging within the SPA.	Yes	To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all	Yes

			contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Seabird Assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species foraging and resting at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.	Yes

			Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown	Yes

			rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
<p>Species regularly supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.</p>	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	<p>Noise and visual disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.</p>	Yes	<p>To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	Yes
	<p>Invasive non-native species (INNS): Brown rats pose a</p>	Yes	Biosecurity measures will be put in place to ensure the	Yes

	<p>threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>		<p>proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy</p>	
--	--	--	---	--

6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.1h: Periglis HRA

Isles of Scilly Sea Defences – Periglis Beach

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



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ISLES OF SCILLY**

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Revision History

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V1.0	Final Report	The Council of the Isles of Scilly
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V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Agnes site Periglis Beach.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as ‘European sites’ within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that “A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site’s conservation objectives.” This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of “people over wind” (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment where no	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p>

HRA stage	Description
alternatives and adverse impacts remain	<p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Periglis is located in the northern extent of the island of St Agnes approximate central OS Grid Reference SV 87737 08452. The beach is composed of both sand and pebbles and there are numerous residential and non-residential properties located at the southern extent of Periglis beach, including St Agnes church. Big Pool and Browarth Point (St Agnes) SSSI and Isles of Scilly Ramsar site are located immediately adjacent to Periglis beach.

Periglis has a natural embankment helping to protect Big Pool, the outfall from which goes beneath the embankment. The seaward face of the embankment suffers from frequent erosion at higher tides and as such, the geotextile mesh and repairs to the bank after the 2014 storms have not been successful. One tonne dumpy bags filled with local sediment materials form much of the central part of the bank where the bank was breached. Additional rocks and boulders have been added to the defence near the beach entrance.

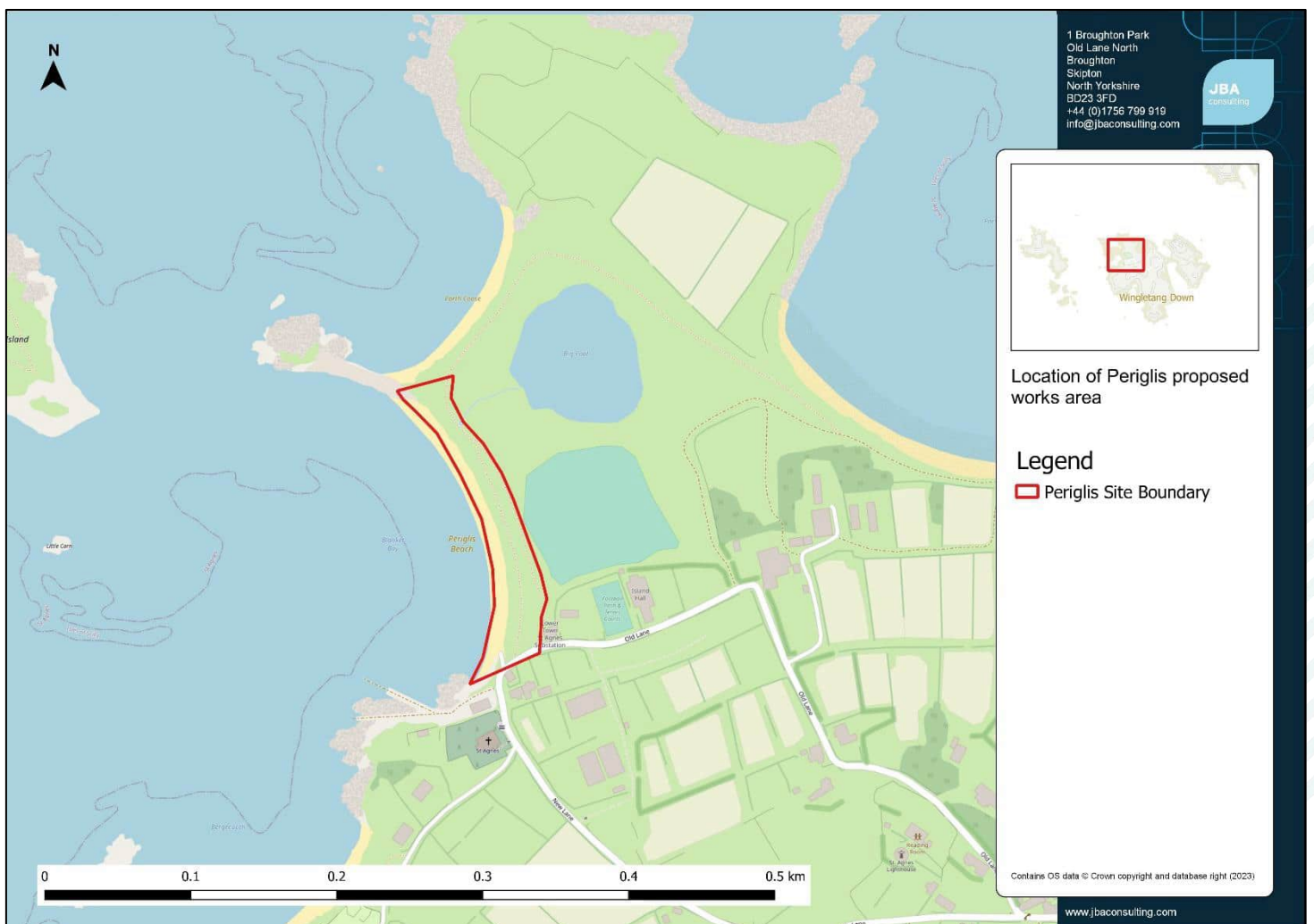


Figure 3-1: Location of proposed scheme.

3.2 Proposed Works

Defences at Periglis provide protection for residential and non-residential properties, infrastructure and Big Pool. As such, there is a need to increase these defences which suffer from frequent erosion.

The proposed works include:

- Protection of Periglis beach through use of geobags constructed into the rear of the dune ridge (3m landward), laid on a geomat and wrapped in geotextile, and covered with excavated cobble/sand material along most of the bay. The geobags will be filled with dry sand of density around 1600kg/m³. If sand material is not available, the geobags may be filled with graded local or imported rocks using high performance nets.
- Crest elevations will be raised to approximately +7.5m, and crest widths increased to reach a minimum of 4m to prevent overtopping. In order to achieve this increase in elevation, the existing dune/bank will be topped up and covered using local materials with biodegradable matting to retain the material whilst the grasses and plants establish. The natural plant fibres will provide a system of erosion control of the material positioned over the top of the dune/bank, while local flora gets naturally established. A local source of recharge sediment will be used for the dunes/banks. If no local material is available, filling material will be imported, possibly from quarries in Cornwall.
- The slipway already has a stop log fitting and stop logs and therefore no further action is required.

This approach will enhance the dune/ bank stability and will provide a robust and permanent approach in terms of protection from coastal erosion.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Periglis will be undertaken over approximately 62 days between November 2023 and January 2024.

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between June and September 2023. Materials will be delivered in advance of the construction works commencing, in approximately 18 loads. Materials will either be delivered directly to Periglis by barge using the landing site on the Periglis beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest feasible site and transported along the access track (using the alternative access route during wet periods).

It is assumed that after delivery, materials will be transported using a 30 tonne truck, or alternative smaller vehicle if required due to access constraints. It is anticipated that deliveries will be staggered.

Construction works at Periglis will entail the excavation and movement of existing material at the top of the beach (mix of sand and cobbles) on the seaward face using a 360° 30 tonne excavator. A geotextile will be laid in the excavation with geocontainers filled with dry sand or rocks placed into the core of the dune/bank and covered/protected by a mix of local sand and cobbles, topped up by excavated material. A geomat will be laid on top of the existing bank, and it will be raised through deposition of excavated materials, or other local recharge, on top of it.

Once complete, the working area will be demobilised and all plant and construction materials will be removed from site. The footpath running behind the crest will be reinstated.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located within the Isles of Scilly Special Protection Area (SPA) and Ramsar site and 45m from the Isles of Scilly Complex Special Area of Conservation (SAC).



Figure 4-1: Location of Periglis Beach proposed works area in relation to designated sites; Overview

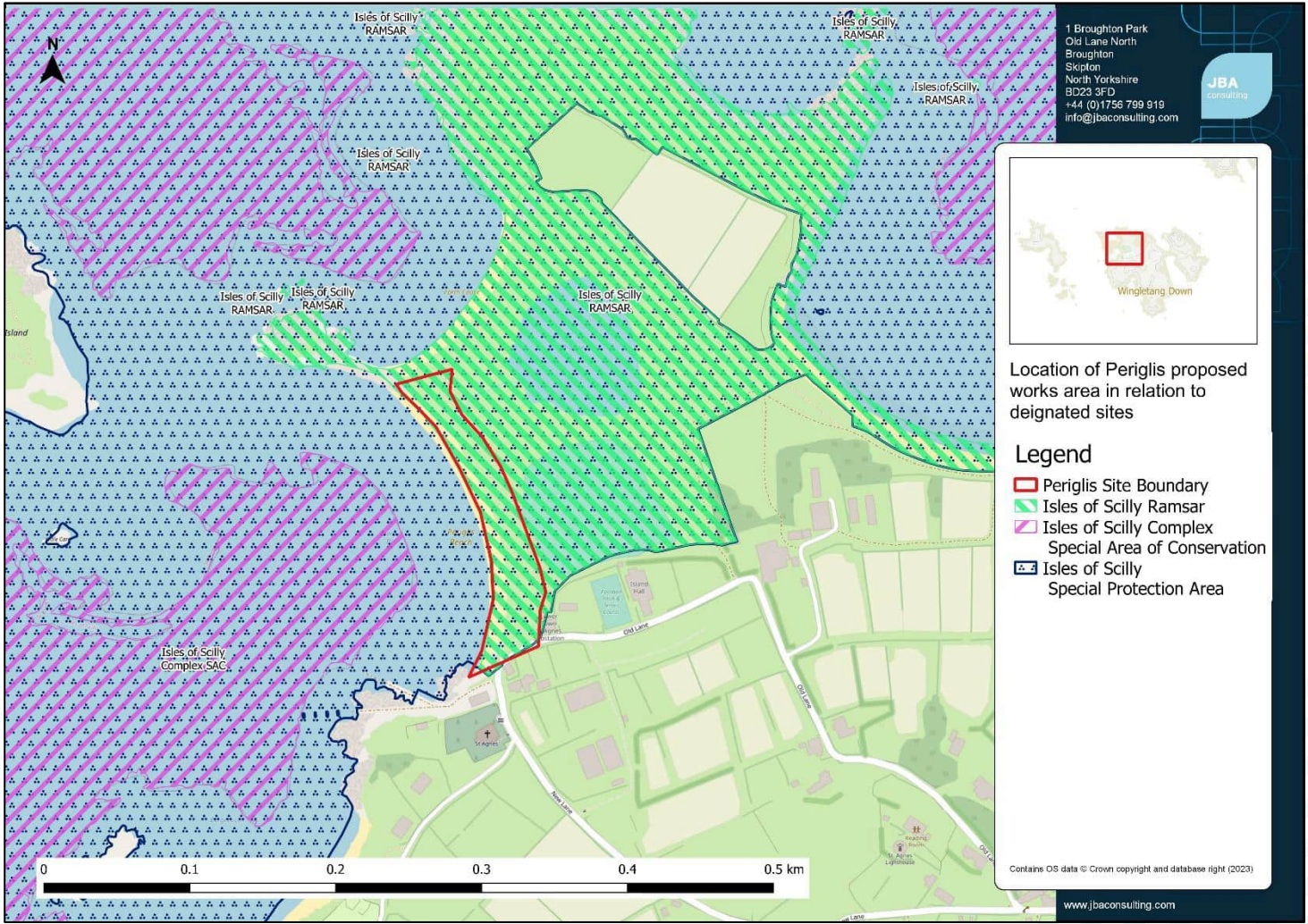


Figure 4-2: Location of Periglis Beach proposed works area in relation to designated sites; Close Up

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

Annex I habitats under the Habitat Regulations that are a primary reason for selection:

- Sandbanks which are slightly covered by sea water all the time
- Mudflats and sandflats not covered by seawater at low tide
- Reefs

Annex II species that are a primary reason for selection:

- Shore dock *Rumex rupestris*

Annex II species present as qualifying feature, but not primary reason for selection

- Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):

- Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

- Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of	Yes	In combination assessment carried forward to Appropriate Assessment	

		suitable on-site avoidance and mitigation measures.		
<p>Annex I habitats:</p> <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss/ community simplification	<p>The works are confined to the existing defences and dunes at the rear of the beach and will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during excavation of the crest.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Perigilis beach is unsuitable. The intertidal habitat in this area is predominantly mixed substratum of boulders and cobbles. However, between the cobbles and in areas closer to the low tide mark intertidal sands are present. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p>	Yes	In combination assessment carried forward to Appropriate Assessment
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment
	Alteration to coastal processes	As the SAC extends over the lower shore of the site the proposed works could impact habitats via coastal squeeze. No works will be situated below MHWS once constructed, with the structural core being approximately 25 m from the existing MHWS level and the backfill that covers it approximately 10 m from the MHWS level.	No	There is no potential for effects in combination with other PPPs.

		The placement of the geobag core will provide adequate space within which intertidal habitat and species, including the Annex I habitat, will be able to migrate as sea levels rise. Therefore, no likely significant impacts to SAC Annex I features as a result of the proposed works via coastal squeeze are anticipated.			
	Physical damage/mortality	<p>There is the potential for works to damage sandflats, which are a feature of the SAC. While works are focussed on the crest at the back of the beach, some sand and cobbles will be excavated from lower down, near or within the sandflats. This will then be replaced following the positioning of geocontainers.</p> <p>Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. The landing of the barge in this area could potentially result in temporary damage to sandflats which are a feature of the SAC.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
	Competition from invasive non-native species (INNS)	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however, this would not be expected to impact the Annex I habitats.</p>	No	No potential for effects in combination with other PPPs have been identified.	No

		Works will only take place above MHWS. There is therefore negligible risk of spreading or introducing marine INNS.			
Annex II species (primary reason for selection): Shore dock	Habitat loss	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on St Agnes. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on St Agnes. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Competition from invasive non-native species (INNS)	Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey Seal	Direct habitat loss	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would	No	No other works impacting Grey Seal habitat, either terrestrial or marine, have been identified that are likely to act in combination with these works.	No

		be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result in loss of marine habitat.			
	Noise and visual disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore, there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works will take place above the Mean High Water Spring (MHWS). While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Direct habitat loss	The works area is not known as to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel habitat will be lost as part of the works.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Noise and visual disturbance	Storm petrel are known to breed within the SPA on St Agnes. However, no known	Yes	In combination assessment carried forward to Appropriate Assessment.	

		breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. Operations during the construction phase could however cause disturbance to Storm petrel foraging or resting at sea within the SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Direct habitat loss	The works area is not known to contain	No	No potential for effects in	No

<p>European Shag <i>Phalacrocorax aristotelis</i> (breeding) Great black-backed gull <i>Larus marinus</i> (breeding) Lesser black-backed gull <i>Larus fuscus</i> (breeding)</p>		<p>breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for these species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.</p>		<p>combination with other PPPs have been identified.</p>	
	<p>Noise and visual disturbance</p>	<p>Lesser black-backed gull and Great Black-backed Gull are known to breed within the SPA on St Agnes. The proposed works are sufficiently far away from known nesting sites of these species, and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA. Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	
	<p>Water pollution</p>	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the SPA, in the absence of suitable on-site avoidance and mitigation measures.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	
	<p>Physical damage/mortality</p>	<p>The works areas do not contain any nesting habitat for breeding Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.</p>	<p>No</p>	<p>There are no other known projects which overlap with the works areas. There is no potential for effects in combination with other PPPs.</p>	<p>No</p>

	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the seabird assemblage of the SPA and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by seabird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds	No	No potential for effects in combination with other PPPs have been	No

		present in the works area can reasonably be expected to move away from harm.		identified.	
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation):	Direct habitat loss	The works area is not known as a breeding habitat for Storm petrel, Lesser black-backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat of breeding bird species lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
<ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull 					
Species regularly supported during the breeding season (identified subsequent to designation):	Noise and visual disturbance	Shag have not been recorded breeding on St Agnes and therefore it is not considered that the proposed works will have any significant effect on breeding Shag within the Ramsar site. Storm petrel and Lesser black-backed gull are known to breed within the Ramsar site on St Agnes. However no known breeding sites are in close proximity to any proposed site works, with the closest known active burrow site located approximately 600m from the closest proposed works site. In this case it is considered unlikely that the proposed works will have any significant effect on burrowing seabirds or any nesting colonies on St Agnes. However, operations during the construction phase could cause disturbance	Yes	In combination assessment carried forward to Appropriate Assessment	
<ul style="list-style-type: none"> Shag 					

		to seabird assemblages resting or foraging at sea within the Ramsar site.		
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment
	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified. No
	Competition from invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 45m
Isles of Scilly SPA	Within Site
Isles of Scilly Ramsar	Within Site

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Periglis Beach are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Three of these sites, including Periglis Beach, are located on the island of St Agnes. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> • Sand banks which are slightly covered by sea water all the time • Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I habitats: <ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide 	Habitat Loss: Works are to restore the dunes at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there will be temporary losses within the construction areas at the top of the beach. Materials will be delivered by barge using a landing site in the intertidal area at Periglis beach or at an alternative site if Periglis beach is unsuitable. There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will	Yes

			rapidly recover following the completion of the works	
	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
	Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.	Yes	Any damage to habitats present within the sites via the construction works and barge landing will be temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats.	Yes
Annex II species (primary reason for selection): Shore dock	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact upon the habitats with Shore dock present within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

Annex II species (not primary reason for selection): Grey seal	Water Pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats used by Grey seal within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin. Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.	Yes
Isles of Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

	habitats utilised by Storm petrel within the SPA.			
	Noise and visual disturbance: Construction activity may cause an increased amount of noise and visual activity which may disturb Storm petrel foraging and resting at sea.	Yes	To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof	Yes

			containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species resting and foraging within the SPA.	Yes	To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that	Yes

			with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>	Yes	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	Yes

Seabird Assemblage (Breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species foraging and resting at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel	Yes

			transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation):	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
<ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull Species regularly supported during the breeding season (identified)	Noise and visual disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that	Yes

subsequent to designation): <ul style="list-style-type: none"> • Shag 			<p>works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined</p>	<p>Yes</p>

			above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
--	--	--	--	--

6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.1i: Lower Town Beach HRA



Isles of Scilly Sea Defences – Lower Town Beach

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

www.jbaconsulting.com



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ISLES OF SCILLY**

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Revision History

Revision Ref/Date	Amendments	Issued to
V1.0	Final Report	The Council of the Isles of Scilly
V2.0	Updates following comments from Natural England	The Council of the Isles of Scilly
V3.0	Updates following comments from Natural England	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

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Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
bb	Abbreviation

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis Beach (two sites) and Porth Coose are located on the island of St Agnes. The tenth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting have been commissioned to provide a report in support of a Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the St Martin's site Lower Town Beach only but where appropriate cumulative impacts from the other schemes will be considered.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and

instead form a National Site Network. SPAs and SACs continue to be referred to collectively as 'European sites' within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives." This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of "people over wind" (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 Holohan v An Bord Pleanála, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation</p>

HRA stage	Description
where no alternatives and adverse impacts remain	<p>measures or alternative options should be identified.</p> <p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Lower Town Beach is located on the north-west border of St Martin’s Island on the central north margins of the Isles of Scilly archipelago. The site extends from the north-east corner of Lower Town to the beach and footpaths on the west, the approximate central OS Grid Reference is SV 91508 16145. This is the only island with sand dunes on its southern coast and they are under possible threat from climate change. However, they have been showing positive signs of self-repair with increasing successional grass coverage, following the 2014 storms that hit the isles of Scilly. There are signs of erosion due to human activity from access to the beach and from cabling that has become exposed at the Lower Town Beach. The location of the proposed work can be seen in Figure 3-1.



Figure 3-1 Location of proposed scheme

3.2 Proposed Works

The main objective of the proposed works at Lower Town Beach are to prevent further erosion caused by human activity which may erode and weaken the dune defences.

The proposed works include:

- Fencing off the most sensitive area of dunes at the rear of the beach, including the area to the east of the access track where cabling has become exposed to help recovery by limiting access to this area and encouraging accretion of sand at the foot of the dunes.
- Additional erosion protection for the beach access at the west of the beach. This is proposed to be an open grid product appropriate for vehicle loading that will fill with sand to match the existing appearance whilst providing erosion protection to this area.
- General pedestrian footpath management to limit and control access to the beach through provision of signage and short sections of fencing to allow access locations through the dunes along the beach time to recover, whilst still providing different access points through the dunes, without the need for any restoration or other intervention.
- Provision of a removable slipway that can be lain as needed and removed and stored during winter to enhance beach access. This will be an aluminium mat that can be rolled out and back up as required with a maximum axle load of 13 tonnes to meet the requirements of the tractors and boat trailers typically used here.

3.3 Construction Methodology

Materials will be transported to St Martin's by an appropriate vessel which will arrive either at St Martin's quay and transported via Lower Town ramp, or at the beach landing site approximately 120m south. Construction materials will be offloaded and transported to the temporary storage area behind the beach. It is anticipated that deliveries will be staggered. Any intertidal works will cease three hours prior to the anticipated high tide time.

It is anticipated that it will take a total of approximately seven working days in April 2025 to complete the proposed scheme at Lower Town beach. It is acknowledged that the beach access ramp is used for boating purposes and therefore works will avoid April and October.

Works will entail the construction of timber fencing at the most sensitive area of the dunes at the rear of the beach, including the area east of the access track where cabling has become exposed. At the western extent of the beach, excavation will be undertaken for the installation of geotextile and Type 1 sub-base to the access track. A 30mm layer of 5 to 20mm aggregate will be placed and compacted, and grid erosion protection matting will be placed and filled with 5-20mm granite aggregate.

It is assumed that a 360° 20 tonne excavator will be used to fill the open grid protection matting. Signs and fencing will be erected around the dune for pedestrian footpath management.

A removable aluminium mat slipway will also be installed which can be lain and removed as needed.

Once complete, the working area will be demobilised and any plant and construction materials will be removed from site.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is adjacent to the Isles of Scilly Complex Special Area of Conservation (SAC) and the Isles of Scilly Special Protection Area (SPA). The Isles of Scilly Ramsar site is approximately 105m west of the proposed scheme.

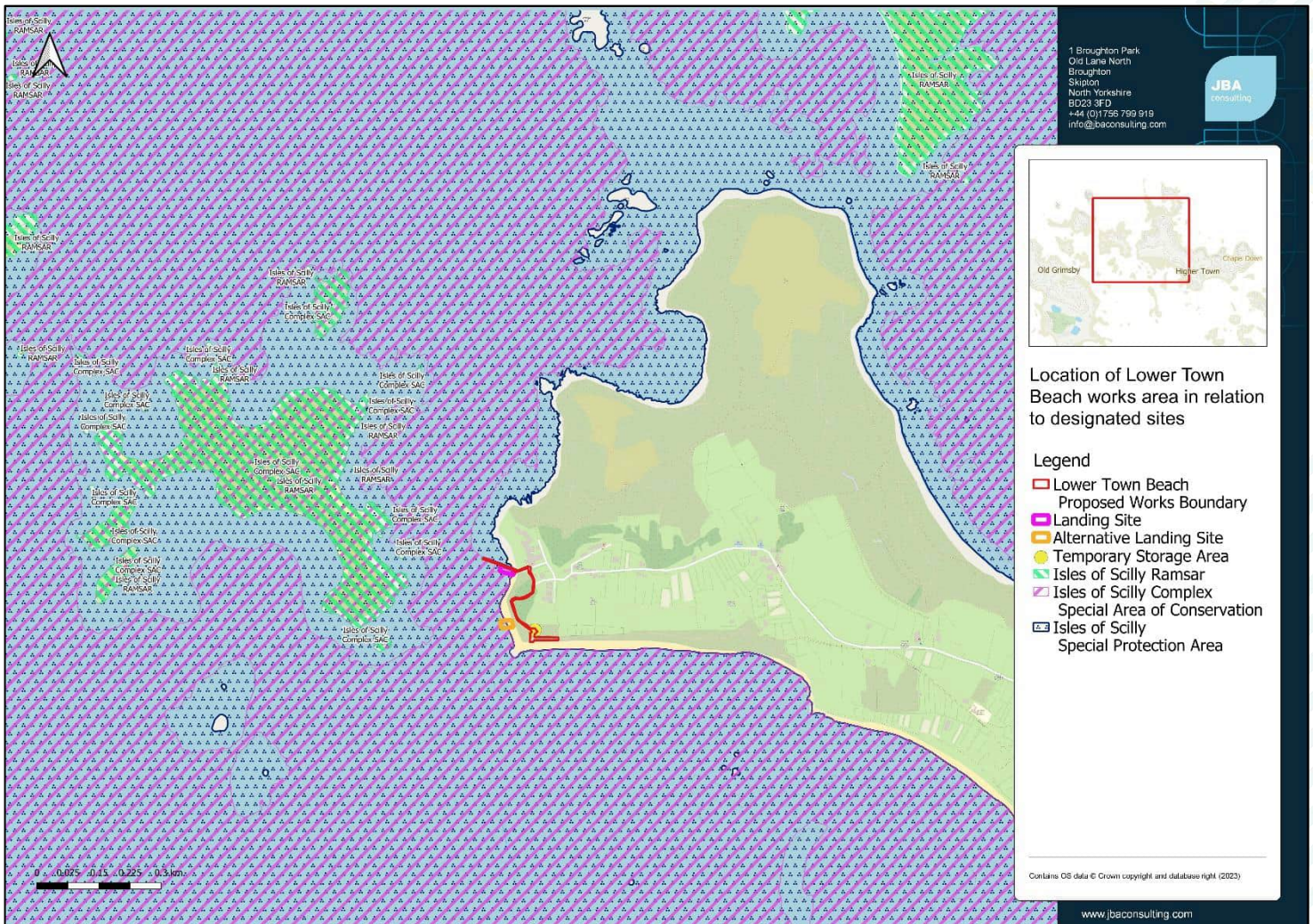


Figure 4-1: Designated sites overview

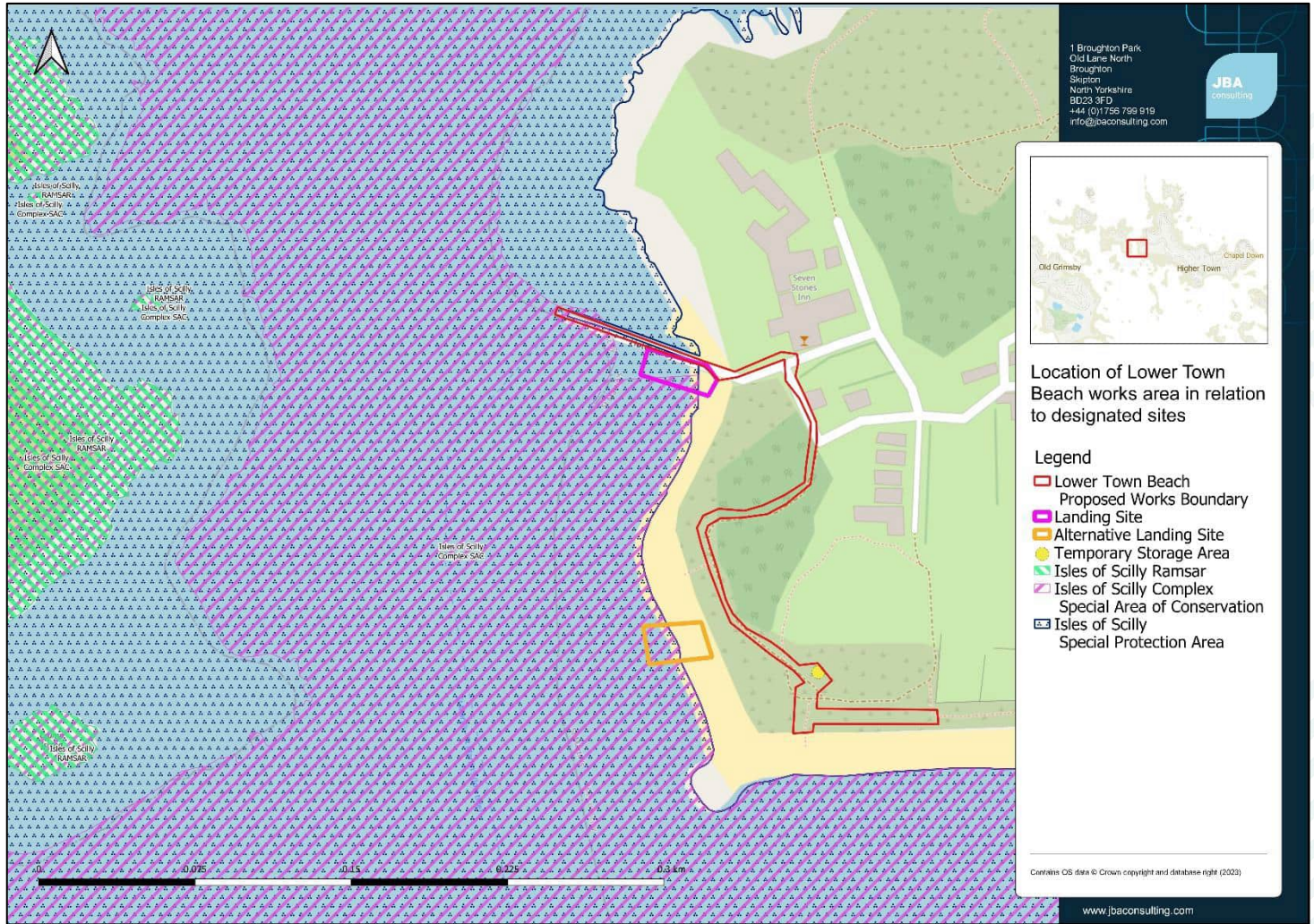


Figure 4-2: Location of St Martins proposed works area in relation to designated sites

4.2 Isles of Scilly Complex Special Area of Conservation (SAC)

4.2.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats, and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection: Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time.
 - Mudflats and sandflats not covered by seawater at low tide.
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection:
 - Grey seal *Halichoerus grypus*

4.2.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.3 Isles of Scilly Special Protection Area (SPA)

4.3.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.3.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.4 Isles of Scilly Ramsar

4.4.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.4.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely

- The populations of qualifying species, and,
- The distribution of qualifying species within the site

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and	Yes	In combination assessment carried forward to Appropriate Assessment	

		impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.		
<p>Annex I Habitats:</p> <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide. 	Habitat loss/community simplification	Construction works will be limited to areas of the beach which are dry or inundated only at high tides. The tracking of vehicles across the site may result in a small amount of habitat loss or damage. Also, as part of the proposed works a vessel will be used to transport construction materials to site, this is likely to be in the form of a barge. There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.	Yes	In combination assessment carried forward to Appropriate Assessment
	Competition from invasive non-native species (INNS)	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the annex I habitats present.</p> <p>Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above Mean High Water Springs (MHWS). There is therefore negligible risk of spreading or introducing marine INNS</p>	No	<p>There is no potential for effects in combination with other PPPs.</p> <p>No</p>

	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Alteration to coastal processes	As the SAC extends over the lower shore of the site the proposed works could impact habitats via coastal squeeze. No works will be situated below MHWS once constructed, so they are adjoined not by the SAC Annex I feature, but by the fine to medium sand and open dune habitat present on site. Without the works, coastal squeeze following sea level rise would occur to the same degree as with the works. Therefore, no likely significant impacts to SAC Annex I features as a result of the proposed works via coastal squeeze are anticipated.	No	There is no potential for effects in combination with other PPPs.	No
	Physical damage	There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and the tracking of vehicles across the site may result in a small amount of damage to habitats present. As part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.	Yes	In combination assessment carried forward to Appropriate Assessment	
Annex II species (primary reason for selection):	Habitat loss/community simplification	No Shore dock was recorded on site during the site survey and it is believed to be absent from the works area with no recent records of Shore dock being	No	No potential for effects in combination with other PPPs have been identified.	No

Shore dock		present on St Martin. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).			
	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact populations of Shore dock.	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey. It is believed to be absent from the works area with no recent records of Shore dock being present on St Martin. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible that it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works.	No	No potential for effects in combination with other PPPs have been identified.	No

		Works will not result in loss of marine habitat.			
	Disturbance	Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Grey seal that are hauled out. There is to be no impact pile driving or working in water; therefore there will be no impacts on Grey Seals in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS). While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel nesting habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No

	Noise and visual disturbance	<p>Storm petrels are not known to nest on St Martins or on the island of Tean (the closest island also designated within the SPA). The proposed works are therefore sufficiently far away from known nesting sites of Storm petrel associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting individuals.</p> <p>Operations during the construction phase could however cause disturbance to Storm petrel foraging or resting at sea within the SPA.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works area is not known as a breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free	Yes	In combination assessment carried forward to Appropriate Assessment	

		following the Isles of Scilly Seabird Recovery Project.			
<p>European Shag <i>Phalacrocorax aristotelis</i> (breeding)</p> <p>Great black-backed gull <i>Larus marinus</i> (breeding)</p> <p>Lesser black-backed gull <i>Larus fuscus</i> (breeding)</p>	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide nesting opportunities for these species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Habitats within or adjacent to the site do not provide nesting opportunities for Shag, Great black-backed gull, or Lesser black-backed gull. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA. Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding Shag, Great black-backed gull and Lesser black-backed gull within the	Yes	In combination assessment carried forward to Appropriate Assessment	

		SPA, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for Shag, Great black-backed gull or Lesser black-backed gull. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain breeding or foraging habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the seabird assemblage of the SPA and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting bird species. However, operations during the construction phase could cause	Yes	In combination assessment carried forward to Appropriate Assessment	

		disturbance to seabird assemblages resting or foraging at sea within the SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding bird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	
Isles of Scilly Ramsar					
Species regularly supported during the breeding season (as identified at designation):	Habitat loss/ community simplification	The works area is not known as a breeding habitat for Storm petrel, Lesser black-backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat lost as part of the proposed scheme.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Lesser black-backed gulls are known to nest within the Ramsar site to the west of the proposed site on Tean and Shag are known to breed within the SPA on the outer isles of St Martins (Pernagie	Yes	In combination assessment carried forward to Appropriate Assessment	
<ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull 					

<p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 		and Guther's). The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Ramsar site.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Storm petrel, Lesser black-backed gull or Shag within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to breeding seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	In combination assessment carried forward to Appropriate Assessment	

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Adjacent
Isles of Scilly SPA	Adjacent
Isles of Scilly Ramsar	Approximately 105m

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Lower Town beach are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> • Sand banks which are slightly covered by sea water all the time • Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I habitats: <ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide 	Habitat Loss: Construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site, this is likely to be in the form of a barge. There is potential that the habitat 'sandflats not covered by seawater at low tide' is present within the proposed landing site of the barge and therefore there is potential that the proposed works will impact this Annex I habitat.	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	Yes

	Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.	Yes	Any damage to habitats present within the site via the construction works and barge landing will be temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	Yes
	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Annex II species (primary reason for selection): Shore dock	Water pollution: During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact habitats used by Grey seal within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal	Yes

			<p>habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.</p> <p>Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.</p>	
Isles of Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by Storm petrel within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Noise and visual disturbance: Construction activity may cause an increased amount of noise and visual activity which may disturb Storm petrel foraging and resting at sea within the SPA.	Yes	<p>To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting Storm petrel	Yes	Biosecurity measures will be put in place to ensure the proposed works	Yes

	<p>within the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>		<p>do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
<p>Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)</p>	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.</p>	<p>Yes</p>	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	<p>Yes</p>
	<p>Noise and visual disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species resting and foraging within the SPA.</p>	<p>Yes</p>	<p>To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in</p>	<p>Yes</p>

			relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	Yes
Seabird assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

	<p>Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb breeding bird species foraging and resting at sea within the SPA.</p>	<p>Yes</p>	<p>To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	<p>Yes</p>
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the</p>	<p>Yes</p>

			works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
<p>supported during the breeding season (as identified at designation):</p> <ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	<p>Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.</p>	Yes	<p>Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3</p>	Yes
	<p>Noise and visual disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.</p>	Yes	<p>To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	Yes
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project.</p>	Yes	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope</p>	Yes

			<p>guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
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6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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Appendix 5.2a: St Martin's MCZ Screening

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Stage 1, Part 2)

Stage 1 assessment: Part 2 - Are there other means of proceeding that would create a substantially lower risk?

This is a record of the assessment of whether there are other means of proceeding that would create a substantially lower risk. It is to meet our duties under Sections 125-126 of the Marine and Coastal Access Act 2009. This record starts at Section 11 because it follows on from Stage 1, Part 1 which covers the assessment of whether there is a risk of hindering the achievement of the conservation objectives for the MCZ.

11. Assessment

There are no other means of proceeding with a substantially lower risk to the MCZ or its conservation objectives.

12. Decision

The Environment Agency || are satisfied that there is no other means of proceeding with the PPP / concludes that there are other means of proceeding with the PPP. ||

Name of Environment Agency officer:

Job title:

Date: || Select date ||

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Consultation)

13. Consultation

Date sent to Natural England:

Date response received from Natural England:

Do Natural England have concerns about the assessment?

Do Natural England have concerns about the decision?

Natural England advice

Write here...

Name of Natural England officer:

Job title:

Date:

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Stage 1, Part 1)

Published: 22/02/2022

Stage 1 assessment: Part 1 - Is there a significant risk of hindering the conservation objectives?

This is a record of the assessment of the risk of the PPP (detailed in section 1) hindering the achievement of the conservation objectives for the MCZ(s). It is to meet our duties under Sections 125-126 of the Marine and Coastal Access Act 2009. If there is, or may be, a significant risk, this record is used to notify Natural England. The Marine Conservation Zones assessed are:

Isles of Scilly: Tean

Revision	Date	Description	By	Review	Approved
P01	February 2022	Draft	HW	JH	
P02	February 2022	Submission to NE			

This record || was / was not || sent to Natural England.

|| For EPR permits only (excluding Flood Risk Activity Permits): An additional component charge for habitats assessment was levied / was not levied / was not applicable for this application ||

1. Permission, plan or project (PPP) details

Type of PPP: Flood and Coastal Erosion Risk Management

Environment Agency reference:

National grid reference: SV 91485 16031

Site/project name or reference: Isles of Scilly Sea Defences – St Martin's, Lower Town Beach

2. Description of proposal

This assessment relates to the proposed works at Lower Town Beach, St Martin's as part of the coastal flood protection works across the islands off the Isles of Scilly. The objective of the proposed works at Lower Town Beach is to prevent further erosion caused by human activity which may erode and weaken dune defences.

Background:

The Council of the Isles of Scilly (CloS) is proposing to construct coastal flood protection works at nine sites on islands of the Isles of Scilly. The works aim to

sensitively restore the natural strength and adaptive flexibility of the extensive dunes across inhabited islands to improve the value of flood protection (ecosystem) services they provide. One of these sites is Lower Town Beach. Lower Town Beach is located on the western extent of the island of St Martin's. There are signs of erosion across Lower Town Beach that have occurred due to human activity from access to the beach and from cabling that has become exposed. The dunes are known to erode and accrete on an annual cycle. In order to prevent severe erosion of the dunes, which may lead to weak points in the dune defences and increase risk of flooding of Lower Town, measures to manage and control access to the beaches through the dunes are required.

Proposed Works:

The main objective of the proposed works at Lower Town Beach are to prevent further erosion caused by human activity which may erode and weaken dune defences.

The proposed works include:

- Fencing off the most sensitive area of dunes at the rear of the beach, including the area to the east of the access track where cabling has become exposed to help recovery by limiting access to this area and encouraging accretion of sand at the foot of the dunes.
- Additional erosion protection for the beach access at the west of the beach. This is proposed to be an open grid product appropriate for vehicle loading that will fill with sand to match the existing appearance whilst providing erosion protection to this area.
- General pedestrian footpath management to limit and control access to the beach through provision of signage and short sections of fencing to allow access locations through the dunes along the beach time to recover, whilst still providing different access points through the dunes, without the need for any restoration or other intervention.
- Provision of removable slipway that can be lain as needed and removed and stored during winter to enhance beach access. This will be an aluminium mat that can be rolled out and back up as required with a maximum axle load of 13 tonnes to meet the requirements of the tractors and boat trailers typically used here.

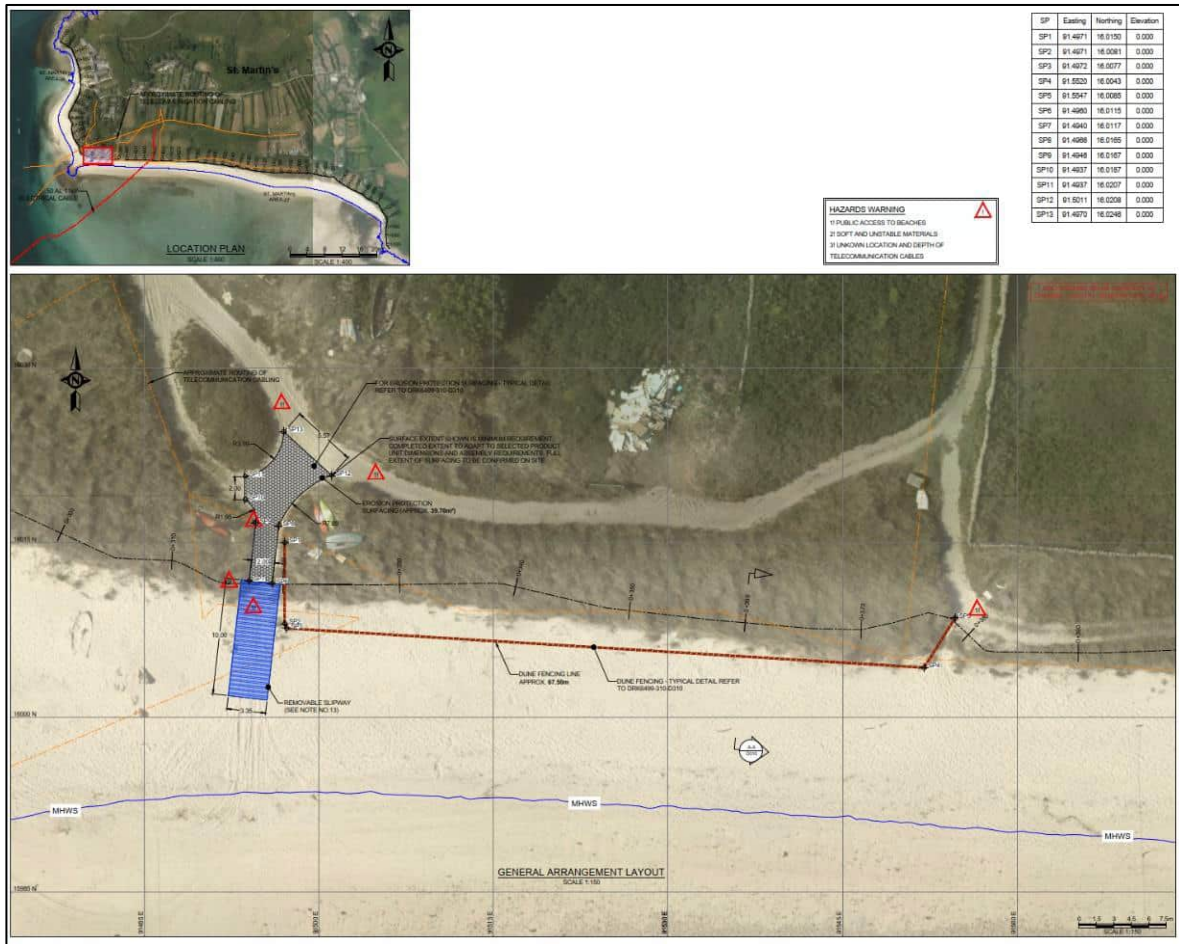


Figure 1 Extent of proposed works at Lower Town Beach

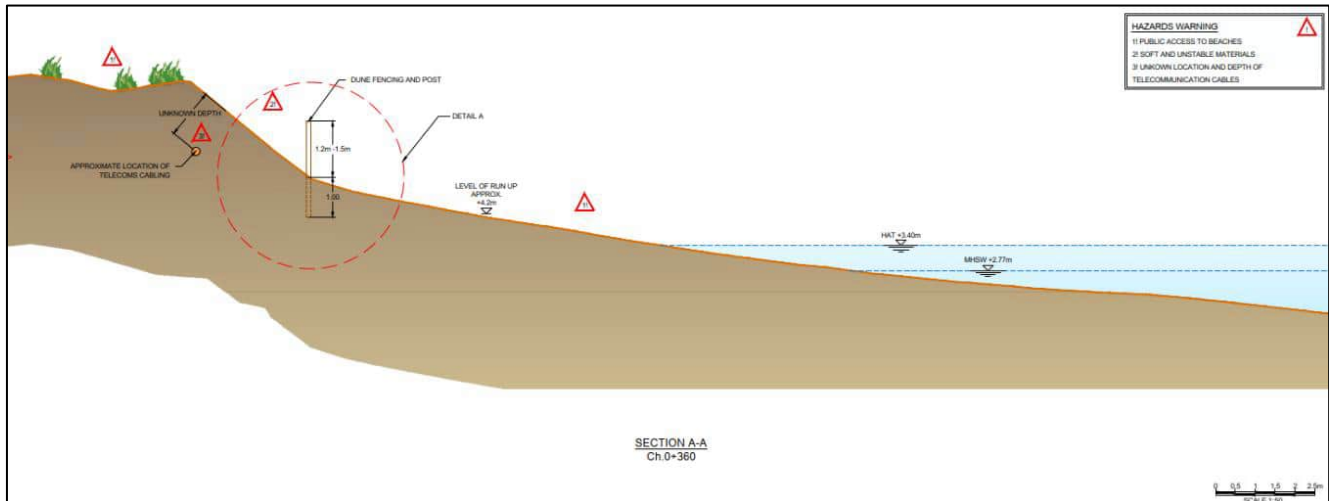


Figure 2 Cross-section of extent of fencing at Lower Town Beach

Construction Methodology:

Construction of the proposed scheme on the island of St Martin's will be facilitated through the access route illustrated in Figure 3 below. Specific details for the proposed construction works at Lower Town Beach are outlined below:

- Construction materials will be transported to St Martin's by an appropriate vessel which will arrive either at St Martin's quay and transported via Lower Town ramp, or at the beach landing site approximately 120m south. Construction materials will be offloaded and transported to the temporary storage area behind the beach. It is anticipated that deliveries will be staggered. Any intertidal works will cease three hours prior to the anticipated high tide time.
- It is anticipated that it will take a total of approximately 7 working days in April 2025 to complete the construction of the proposed scheme at Lower Town beach.
- Construction works will entail the construction of timber fencing at the most sensitive area of the dunes at the rear of the beach, including the area east of the access track where cabling has become exposed. At the western extent of the beach, excavation will be undertaken for the installation of geotextile and Type 1 sub-base to the access track. A 30mm layer of 5 to 20mm aggregate will be placed and compacted, with grid erosion protection matting will be placed and filled with 5-20mm granite aggregate.
- It is assumed that a 360° 20 tonne excavator will be used to fill the open grid protection matting. Signs and fencing will be erected around the dune for pedestrian footpath management.
- A removable aluminium mat slipway will also be installed which can be lain and removed as needed.
- Once complete, the working area will be demobilised, and any plant and construction materials will be removed from site.

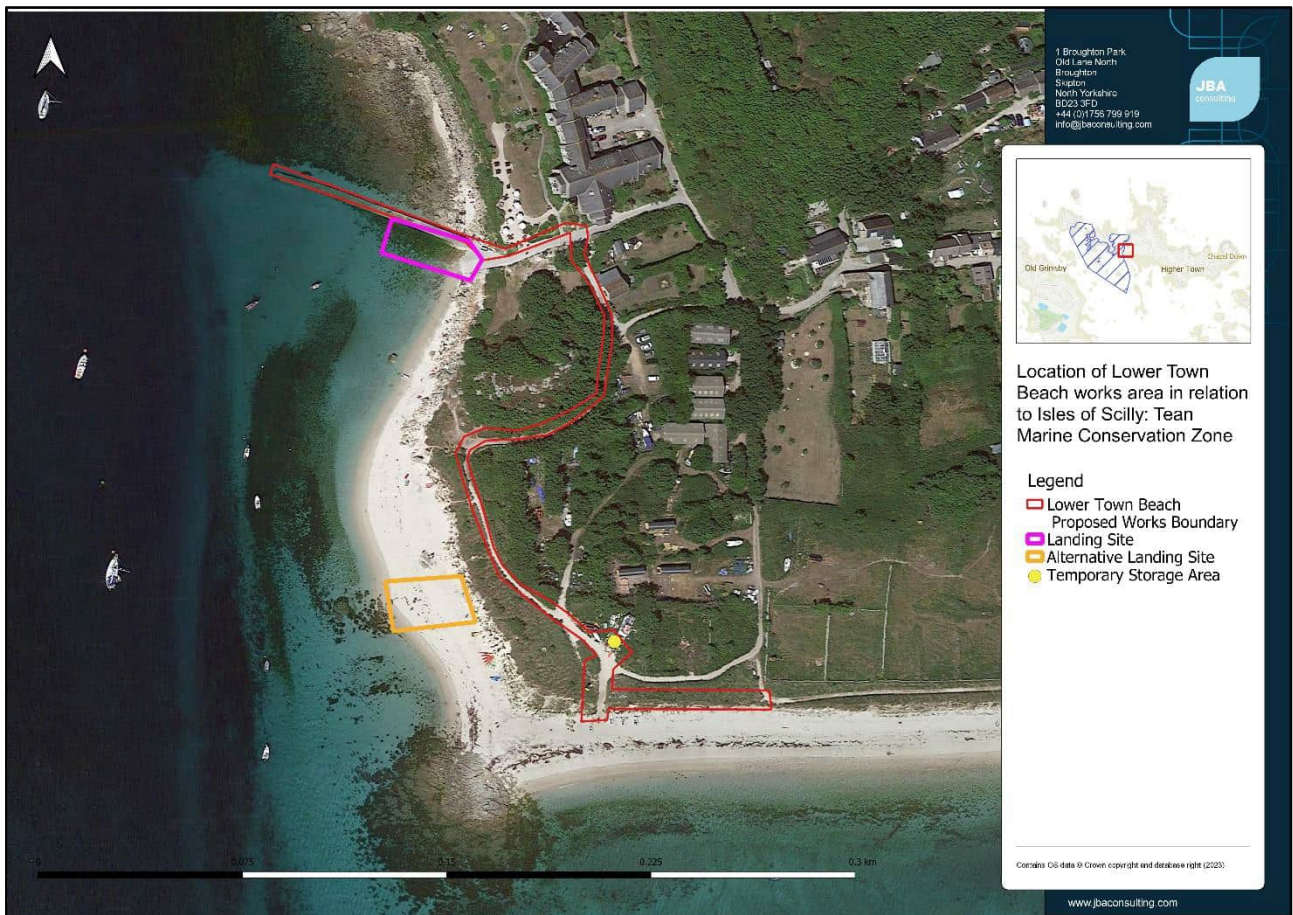


Figure 3 Construction access routes across the island of St Martin's

3. Map(s) showing PPP location and MCZ(s)



Figure 4 Location of Lower Town Beach proposed works area in relation to Isles of Scilly: Tean Marine Conservation Zone

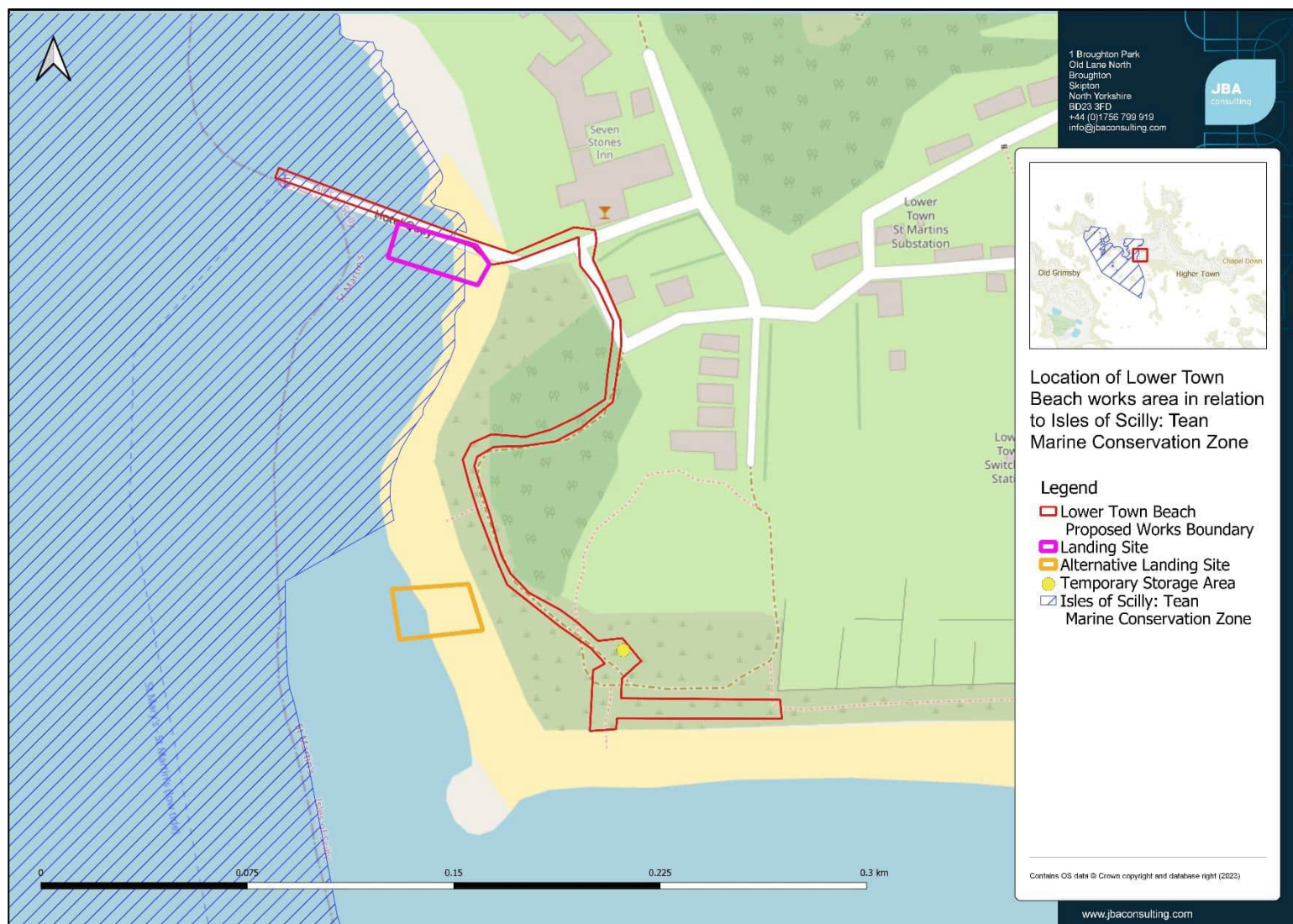


Figure 5 Location of Lower Town Beach proposed work sites in relation to Isles of Scilly: Tean Marine Conservation Zone

4. MCZs requiring assessment¹

The small-scale nature of the proposed works means that the zone of influence was, on a precautionary basis, taken to be 1km from the red line boundary shown in 4. The Marine Conservation Zone included within this zone of influence is also presented in 4.

Table 1: Marine Conservation Zones requiring assessment

Marine Conservation Zone	Complete list of designated features
Isles of Scilly: Tean Marine Conservation Zone	<ul style="list-style-type: none">• Intertidal Coarse Sediment• Intertidal Sand and Muddy Sand• Intertidal Under Boulder Communities• Moderate Energy Intertidal Rock

5. Conservation objectives

The assessment will consider the risk of significantly hindering the site's conservation objectives.

Table 2: Conservation Objectives

Site name: Isles of Scilly: Tean MCZ Version: 1 Date: 19/03/2021
<p>Conservation objectives for Isles of Scilly: Tean MCZ:</p> <p>The conservation objective of the zone is that the protected habitats are:</p> <ul style="list-style-type: none">• Maintained in favourable condition if they are already in favourable condition.• Brought into favourable condition if they are not already in favourable condition. <p>For each protected habitat favourable condition means that, within a zone:</p> <ul style="list-style-type: none">• Its extent is stable or increasing.• Its structure and functions, its quality, and the composition of its characteristic biological communities (including diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that its condition remains healthy and does not deteriorate. <p>Any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery.</p> <p>Any alteration to a feature brought about entirely by natural processes is to be disregarded when determining whether a protected feature is in favourable condition.</p>

¹ This is based on screening criteria the Environment Agency consider appropriate to identify possible significant risk

6. Risks (pressures) relevant to the type of PPP being assessed

These are the reasonably foreseeable risks for this type of PPP, assessed using the Supplementary Advice on Conservation Objectives for Isles of Scilly: Tean MCZ (Natural England, 2021b). Possible risks that might occur during the proposed works at Lower Town Beach that could impact on the habitats in the Isles of Scilly: Tean MCZ are detailed in Table 3. Where possible, these risks have been summarised broadly, rather than considered separately for different habitats.

Given the small scale of the works, its temporary nature and the relatively short proposed construction time, some of these risks listed within the Supplementary Advice on Conservation Objectives are not relevant to the proposed works being assessed; these are:

- Loss of key structural and influential species
- Changes to presence and spatial distribution of biological communities
- Changes to extent and distribution
- Changes to sediment total organic carbon content
- Changes in species composition of competent communities
- Changes in energy/exposure
- Changes in topography
- Changes in physico-chemical properties
- Reduction in water quality through decrease in dissolved oxygen
- Reduction in water quality through increased nutrient levels
- Changes to hydrodynamic regime

Risks that are not considered to be foreseeable outcomes of the proposed works at Lower Town Beach are not included in Table 3 and are not considered further.

Table 3: Threats to Isles of Scilly: Tean MCZ

Threat Type	Relevant Feature
Introduction and spread of non-native species and pathogens	All features
Changes to sediment composition and distribution	All features
Decrease in water quality through increase in levels of contaminants	All features
Decrease in water quality through increase in levels of turbidity	All features

7. MCZ assessment table

This section is a record of the screening for each risk (pressure) and the qualifying features that could be sensitive to that risk. The features may be grouped if they will be affected in the same way and the screening is the same for each feature. If appropriate, the assessment may be considered at a site level, rather than feature by feature.

The individual conservation objectives for each feature are not started in this table; rather, it is assumed that for all features the objective to recover and improve on current conditions. It is assumed that if the PPP would not hinder feature improvement, it would not hinder any conservation objective for maintenance of current condition either.

Table 4: MCZ assessment table

Threat	Protected feature(s) that could be impacted	Capable of affecting either the protected species of the MCZ, or any ecological or geomorphological process on which the conservation of any protected feature of the MCZ is dependent?	Will there be any in-combination with other plans or projects on the feature?	Can impacts be mitigated for in the proposed method statement?	Will the conservation objective for the feature(s) be hindered?
Introduction and spread of non-native species and pathogens	All features	<p>Yes - There is potential for the proposed works to impact designated features through the introduction and spread of non-native species and pathogens.</p> <p>Hottentot Fig has been recorded within the proposed works boundary and therefore an invasive species management plan will be put in place to ensure that the proposed works do not cause further spread of Hottentot Fig across the site.</p> <p>Brown rats pose a threat to nesting birds within the Isles of Scilly and therefore biosecurity measures will be put in place to ensure the</p>	No	Yes - To ensure that no non-native species or pathogens are spread to the proposed site as a result of plant movement or contaminated PPE, strict biosecurity measures will be implemented, ensuring that equipment is clean and free of any specimens of both native and invasive non-native species before, during, and upon completion of site work. This will be done by following Check-Clean-Dry procedures and ensuring adequate biosecurity measures are available for day-to-	No

Threat	Protected feature(s) that could be impacted	Capable of affecting either the protected species of the MCZ, or any ecological or geomorphological process on which the conservation of any protected feature of the MCZ is dependent?	Will there be any in-combination with other plans or projects on the feature?	Can impacts be mitigated for in the proposed method statement?	Will the conservation objective for the feature(s) be hindered?
		<p>proposed works do not facilitate the spread of Brown rats across the site. Measures include the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers.</p> <p>It is considered unlikely that these species would have an impact upon the features of this MCZ, however, mitigation to avoid their spread has been included in the CEMP (ES Volume II) and summarised here.</p>		<p>day site work. A toolbox talk will be given to all site staff regarding the importance of biosecurity on site.</p> <p>Following the procedures stated above, it is considered that there will be no significant effects on designated features as a result of non-native species or pathogens in the MCZ.</p>	
Changes to sediment composition and distribution	All features	<p>Yes – As part of the proposed works a vessel will be used to transport construction materials to site, this is likely to be in the form of a barge. There is potential that the landing of the barge on site will impact designated features through disturbing or compaction of sediment. Any disturbance to sediment via the barge landing will be temporary and localised. There is also potential that the landing of the barge and the tracking of vehicles across the site may result in a small amount of sediment movement and compaction.</p> <p>.</p>	No	<p>Yes - Any disturbance to sediment via the barge landing will be temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p> <p>Following the procedures stated above, it is considered that there will be no significant effects on</p>	No

Threat	Protected feature(s) that could be impacted	Capable of affecting either the protected species of the MCZ, or any ecological or geomorphological process on which the conservation of any protected feature of the MCZ is dependent?	Will there be any in-combination with other plans or projects on the feature?	Can impacts be mitigated for in the proposed method statement?	Will the conservation objective for the feature(s) be hindered?
				sediment composition and distribution in the MCZ.	
Decrease in water quality through increase in levels of contaminants	All features	Yes – There is the potential to negatively impact designated features through pollution incidents. Appropriate mitigation measures will therefore be implemented through the construction phase to ensure that water quality is not adversely affected through pollution incidents and the release of contaminants from site.	No	Yes - Best guidance pollution prevention will be followed to minimise the risk of any such event, including a secure store for chemicals and vehicles off the beach, use of drip-trays for refuelling, and the carrying of spill-kits while carrying out works. No refuelling of machinery will occur within 7m of any waterbody. A toolbox talk will be given to all site staff for pollution prevention and incident response. All site staff will undertake emergency drills for incident response.	No
Decrease in water quality through increase in levels of turbidity	All features	Yes – As part of the proposed works a vessel will be used to transport construction materials to site, this is likely to be in the form of a barge. There is potential that the landing of the barge on site will impact designated features through disturbing sediment and therefore increasing turbidity levels, affecting water quality.	No	Yes - Any increases in turbidity via the barge landing will be temporary and localised and it is therefore considered that there will be no significant effects on sediment composition and turbidity in the MCZ.	No

8. Information / Advice (if applicable)

This section summarises the information and/or advice requested/received during the assessment.

Environment Agency internal advice and consultation (if applicable)

No advice was requested.

Natural England information / advice (if applicable)

No advice was requested.

Third party information / advice (if applicable)

No advice was requested.

9. References

GOV.UK (2019a) *Isles of Scilly MCZ: factsheet*. Available Online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/926991/mcz-isles-of-scilly-2019.pdf [Accessed: 02/02/2023]

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Natural England (2021a) *Natural England Conservation Advice for Marine Protected Areas - Isles of Scilly: Tean MCZ*. Available Online: <https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=MCZ0008-11&SiteName=scilly&SiteNameDisplay=Isles%20of%20Scilly:%20Tean%20MCZ&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=&HasCA=1#hlco> [Accessed: 02/02/2023]

Natural England (2021b) *Isles of Scilly: Tean MCZ – Supplementary Advice on Conservation Objectives*. Available online: <https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=MCZ0008-11&SiteName=scilly&SiteNameDisplay=Isles+of+Scilly%3a+Tean+MCZ&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeasonality=> [Accessed: 02/02/2023]

10. Decision

The Environment Agency concludes that there is no significant risk / a significant risk and intends to refuse the application or not proceed with the activity / need for further assessment.

Name of Environment Agency officer:

Job title:

Date:

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Stage 1, Part 2)

Stage 1 assessment: Part 2 - Are there other means of proceeding that would create a substantially lower risk?

This is a record of the assessment of whether there are other means of proceeding that would create a substantially lower risk. It is to meet our duties under Sections 125-126 of the Marine and Coastal Access Act 2009. This record starts at Section 11 because it follows on from Stage 1, Part 1 which covers the assessment of whether there is a risk of hindering the achievement of the conservation objectives for the MCZ.

11. Assessment

There are no other means of proceeding with a substantially lower risk to the MCZ or its conservation objectives.

12. Decision

The Environment Agency || are satisfied that there is no other means of proceeding with the PPP / concludes that there are other means of proceeding with the PPP. ||

Name of Environment Agency officer:

Job title:

Date: || Select date ||

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Consultation)

13. Consultation

Date sent to Natural England:

Date response received from Natural England:

Do Natural England have concerns about the assessment?

Do Natural England have concerns about the decision?

Natural England advice

Write here...

Name of Natural England officer:

Job title:

Date:

Appendix 5.2b: St Agnes MCZ Screening

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Stage 1, Part 1)

Published: 22/02/2022

Stage 1 assessment: Part 1 - Is there a significant risk of hindering the conservation objectives?

This is a record of the assessment of the risk of the PPP (detailed in section 1) hindering the achievement of the conservation objectives for the MCZ(s). It is to meet our duties under Sections 125-126 of the Marine and Coastal Access Act 2009. If there is, or may be, a significant risk, this record is used to notify Natural England. The Marine Conservation Zones assessed are:

Isles of Scilly: Smith Sound Tide Swept Channel

Revision	Date	Description	By	Review	Approved
P01	February 2023	Draft	HW	JH	
P02	April 2023	Submission to NE			

This record || was / was not || sent to Natural England.

|| For EPR permits only (excluding Flood Risk Activity Permits): An additional component charge for habitats assessment was levied / was not levied / was not applicable for this application ||

1. Permission, plan or project (PPP) details

Type of PPP: Flood and Coastal Erosion Risk Management

Environment Agency reference:

National grid reference: SV877084, SV877086, SV879085

Site/project name or reference: Isles of Scilly Sea Defences – St Agnes, Porth Killier, Periglis Beach and Porth Coose

2. Description of proposal

This assessment relates to the proposed works at three sites Porth Killier, Periglis Beach and Porth Coose on St Agnes as part of the coastal flood protection works across the islands off the Isles of Scilly. The objective of the proposed works on St Agnes is to prevent further coastal erosion and reduce flood risk.

Background:

The Council of the Isles of Scilly (CloS) is proposing to construct coastal flood protection works at nine sites on islands of the Isles of Scilly. The works aim to

sensitively restore the natural strength and adaptive flexibility of the extensive dunes across inhabited islands to improve the value of flood protection (ecosystem) services they provide. Three of these sites are located on St Agnes.

Porth Killier

Coastal erosion and flood risk at Porth Killier presents a risk of inundation and contamination at the Big Pool, along with a risk of undermining the road that runs along the southern extent of Porth Killier and residential and non-residential properties and infrastructure in the vicinity.

The Porth Killier site has been divided into three areas of intervention: the sea wall; the eastern end; and the western end. Overtopping has not occurred at the western end and therefore no works are proposed there.

Proposed works:

The seawall

- Implementation of a rock scour protection at the foundation of the seawall. Wider toe protection of 0.3 to 1.0 tonne rock size with a minimum width of 3m is recommended to protect the wall from undermining and failure, and also to reduce overtopping.
- A 30m section of the eastern side of the wall has been identified as the most damaged and as such, a 3m toe-berm of 0.3 to 1.0 tonne rock armour toe berm is proposed here. In some locations where damage is more severe, local repairs may be required prior to placing the rocks.
- A 35m section on the western side has been identified as the least damaged and as such, the rock toe here will be characterised by 1.9m wide 0.3 to 1.0 tonne rocks and 1.1m of cobbles, which will tie into the existing rock headland.
- Rock material will be sourced locally where possible but will need to be imported if unavailable.

Eastern end

- Construction of a rock structure revetment with 0.3 to 1 tonne material to reduce halt ram erosion. The rock revetment would be placed up to the crest of the underside of the ram/outcrop to reduce the cut back towards the road. In order to minimise the volume of rock required, rock armour will be protected by a cobble toe that will make use of existing materials.
- The presence of the revetment will improve the stability of the halt ram and also act as a reduction to wave overtopping events.

Construction Methodology

- It is anticipated that construction of the proposed scheme at Porth Killier will be undertaken over approximately 41 days between September and October 2023.

- The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).
- Materials will either be delivered directly to Porth Killier beach by barge using the landing site on the beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track.
- It is assumed that after delivery, materials, including rock armour, will be transported using a 20 tonne truck, or alternative smaller vehicle if required due to the width of the track and stored in the temporary storage area. It is anticipated that deliveries will be staggered.
- Construction works at Porth Killier will entail implementation of a rock scour protection at the foundation of the sea wall at the western end, and construction of a rock structure revetment at the eastern end through placement of rock armour and cobbles which will tie into the existing rock headland on the western side.
- It is assumed that a 360° 20 tonne excavator and a 6 tonne dumper truck will be used for the construction works. 0.3 to 1 tonne rocks will be placed at the foundation of the seawall, with a minimum width of 3m. On the eastern side of the seawall which is most damaged, an excavator will move 0.1 to 3 tonne rocks to create a 3m toe-berm at the bottom of a 30m section of the seawall. On the western side of the seawall which is the least damaged, an excavator will move 0.1 to 3 tonne rocks to create a 1.9m toe along a 35m section of the seawall. Cobbles sourced from the beach will also be moved to the western side of the seawall and will tie into the existing rock headland.
- At the eastern end of Porth Killier, an excavator and dumper truck will be used to construct a rock structure revetment with 0.3 to 1 tonne material. Cobbles sourced from the beach will be moved to provide a protective cobble toe to the rock revetment.
- Once complete, the working area will be demobilised and all plant and construction materials will be removed from site.

Periglis Beach

Defences at Periglis provide protection for residential and non-residential properties, infrastructure and Big Pool. As such, there is a need to increase these defences which suffer from frequent erosion.

Proposed Works:

- Protection of Periglis beach through use of geobags, laid on a geomat and wrapped in geotextile, and covered with excavated cobble/sand material along most of the bay. Part of the existing material at the top of the beach (mix of sand and cobbles) will be excavated, from the seaward face, to allow the positioning of geobags in the existing footprint in the core of the dune/bank. The

geobags will be filled with dry sand of density around 1600kg/m³. If sand material is not available, the geobags may be filled with graded local or imported rocks using high performance nets.

- The geobags will be covered/protected by a mix of local sand and cobbles and topped up by locally excavated material where available. As such, the geobags will not be exposed directly to the waves and will not be directly visible. The fill will be protected with a matting to encourage establishment of vegetation and to provide additional erosion protection. The new reshaped seaward slope will follow the natural slope of the existing dune/bank.
- Crest elevations will be raised to approximately +7.5m, and crest widths increased to reach a minimum of 4m to prevent overtopping. In order to achieve this increase in elevation, the existing dune/bank will be topped up and covered using local materials with biodegradable matting to retain the material whilst the grasses and plants establish. The natural plant fibres will provide a system of erosion control of the material positioned over the top of the dune/bank, while local flora gets naturally established. A local source of recharge sediment will be used for the dunes/banks. If no local material is available, filling material will be imported, possibly from local quarries in Cornwall.
- The slipway already has a stop log fitting and stop logs and therefore no further action is required.
- This approach will enhance the dune/ bank stability and will provide a robust and permanent approach in terms of protection from coastal erosion.

Construction Methodology:

- It is anticipated that construction of the proposed scheme at Periglis will be undertaken over approximately 62 days between November 2023 and January 2024.
- The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).
- Materials will either be delivered directly to Periglis by barge using the landing site on the Periglis beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track (using the alternative access route during wet periods).
- It is assumed that after delivery, materials will be transported using a 20 tonne truck, or alternative smaller vehicle if required due to access constraints. It is anticipated that deliveries will be staggered.
- Construction works at Periglis will entail the excavation and movement of existing material at the top of the beach (mix of sand and cobbles) on the seaward face using a 360° 20 tonne excavator. A geotextile will be laid in the excavation with geocontainers filled with dry sand or rocks placed into the core of the dune/bank and covered/protected by a mix of local sand

and cobbles, topped up by excavated material. A geomat will be laid on top of the existing bank, and it will be raised through deposition of excavated materials, or other local recharge, on top of it.

- Once complete, the working area will be demobilised and all plant and construction materials will be removed from site. The footpath running behind the crest will be reinstated.

Porth Coose

Porth Coose provides protection to Big Pool, important freshwater habitat, wells, aquifers and local infrastructure. Defences have historically been severely overtopped and as such enhanced defences are required.

Proposed works:

- Provision of a more robust and wider ridge crest along the entire length of the Porth Coose. The crest elevation would be increased through recharge using local and imported material, with rock bags with the rear filled with site won material to grade to existing levels.
- The bags will be placed on a prepared geotextile surface at the top of the slopes and fill material is to be placed behind to tie in the top of the bags to the ground behind. A geomat will be placed to stabilise this slope and encourage establishment of vegetation.
- The crest elevation will be increased to prevent overtopping and should be at approximately +7.3m.

Construction Methodology:

- It is anticipated that construction of the proposed scheme at Porth Coose will be undertaken over approximately 23 days between October and November 2023.
- The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).
- Materials will either be delivered directly to Porth Coose beach by barge using the landing site on the adjacent Periglis beach, and moved to the adjacent temporary storage area, or if not feasible, landed at the closest site and transported along the access track (using the alternative access track during wet periods).
- It is assumed that after delivery, materials will be transported using a 20 tonne truck, or alternative smaller vehicle if required. It is anticipated that deliveries will be staggered.
- Construction works at Porth Coose will entail the increase of crest elevation through recharge using movement of material, with a rock mattress (rock bag) laid directly on the existing crest on top of a geotextile. It is assumed that a 360° 20 tonne excavator will be used to move material.
- Site won material from the excavation will be used to tie into existing ground. It is assumed that any excess material will be moved to the spare sand storage area to the north east.

- Once complete, the working area will be demobilised and all plant and construction materials will be removed from site. The footpath running behind the crest will be reinstated.

3. Map(s) showing PPP location and MCZ(s)



Figure 1 Location of proposed works on St Agnes in relation to Isles of Scilly: Smith Sound Tide Swept Channel MCZ

4. MCZs requiring assessment¹

The small-scale nature of the proposed works means that the zone of influence was, on a precautionary basis, taken to be 1km from the red line boundary shown in 4. The Marine Conservation Zone included within this zone of influence is also presented in 4.

Table 1: Marine Conservation Zones requiring assessment

Marine Conservation Zone	Complete list of designated features
Isles of Scilly: Smith Sound Tide Swept Channel Marine Conservation Zone	<ul style="list-style-type: none">• High Energy Intertidal Rock• Moderate Energy Intertidal Rock• Spiny Lobster <i>Palinurus elephas</i>

5. Conservation objectives

The assessment will consider the risk of significantly hindering the site's conservation objectives.

¹ This is based on screening criteria the Environment Agency consider appropriate to identify possible significant risk

Table 2: Conservation Objectives

Site name: Isles of Scilly: Smith Sound Tide Swept Channel Marine Conservation Zone
Version: 1 Date: 19/03/2021

Conservation objectives for Isles of Scilly: Smith Sound Tide Swept Channel MCZ:

The conservation objective of the zone is that the protected habitats are:

- Maintained in favourable condition if they are already in favourable condition.
- Brought into favourable condition if they are not already in favourable condition.

For each protected habitat favourable condition means that, within a zone:

- Its extent is stable or increasing.
- Its structure and functions, its quality, and the composition of its characteristic biological communities (including diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that its condition remains healthy and does not deteriorate.

Any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery.

For each species of marine fauna, favourable condition means that a population within a zone is supported in numbers which enable it to thrive, by maintaining:

- The quality and quantity of its habitat
- The number, age and sex ratio of its population

Any alteration to a feature brought about entirely by natural processes is to be disregarded when determining whether a protected feature is in favourable condition.

6. Risks (pressures) relevant to the type of PPP being assessed

These are the reasonably foreseeable risks for this type of PPP, assessed using the Supplementary Advice on Conservation Objectives for Isles of Scilly: Smith Sound Tide Swept Channel MCZ (Natural England, 2021b). Possible risks that might occur during the proposed works at St Agnes that could impact on the habitats in the Isles of Scilly: Smith Sound Tide Swept Channel MCZ are detailed in **Table 3**. Where possible, these risks have been summarised broadly, rather than considered separately for different habitats.

Given the small scale of the works, its temporary nature and the relatively short proposed construction time, some of these risks listed within the Supplementary Advice on Conservation Objectives are not relevant to the proposed works being assessed; these are:

- Loss of key structural and influential species
- Changes to presence and spatial distribution of biological communities
- Changes to extent and distribution
- Changes to sediment total organic carbon content
- Changes in species composition of competent communities
- Changes in energy/exposure
- Changes in topography
- Changes in physico-chemical properties
- Reduction in water quality through decrease in dissolved oxygen
- Reduction in water quality through increased nutrient levels
- Changes to hydrodynamic regime

Risks that are not considered to be foreseeable outcomes of the proposed works at Lower Town Beach are not included in Table 3 and are not considered further.

Table 3: Threats to Isles of Scilly: Smith Sound Tide Swept Channel MCZ

Threat Type	Relevant Feature
Introduction and spread of non-native species and pathogens	All features
Changes to sediment composition and distribution	All features
Decrease in water quality through increase in levels of contaminants	All features
Decrease in water quality through increase in levels of turbidity	All features

7. MCZ assessment table

This section is a record of the screening for each risk (pressure) and the qualifying features that could be sensitive to that risk. The features may be grouped if they will be affected in the same way and the screening is the same for each feature. If appropriate, the assessment may be considered at a site level, rather than feature by feature.

The individual conservation objectives for each feature are not started in this table; rather, it is assumed that for all features the objective to recover and improve on current conditions. It is assumed that if the PPP would not hinder feature improvement, it would not hinder any conservation objective for maintenance of current condition either.

Table 4: MCZ assessment table

Threat	Protected feature(s) that could be impacted	Capable of affecting either the protected species of the MCZ, or any ecological or geomorphological process on which the conservation of any protected feature of the MCZ is dependent?	Will there be any in-combination with other plans or projects on the feature?	Can impacts be mitigated for in the proposed method statement?	Will the conservation objective for the feature(s) be hindered?
Introduction and spread of non-native species and pathogens	All features	<p>Yes - There is potential for the proposed works to impact designated features through the introduction and spread of non-native species and pathogens.</p> <p>Hottentot Fig is locally abundant adjacent to the works area, although none was recorded within the site boundary and therefore an invasive species management plan will be put in place to ensure that the proposed works do not cause further spread of Hottentot Fig across the site.</p> <p>Brown rats pose a threat to nesting birds within the Isles of Scilly, Materials will be delivered by barge which could potentially provide a pathway</p>	No	Yes - To ensure that no non-native species or pathogens are spread to the proposed site as a result of plant movement or contaminated PPE, strict biosecurity measures will be implemented, ensuring that equipment is clean and free of any specimens of both native and invasive non-native species before, during, and upon completion of site work. This will be done by following Check-Clean-Dry procedures and ensuring adequate biosecurity measures are available for day-to-	No

Threat	Protected feature(s) that could be impacted	Capable of affecting either the protected species of the MCZ, or any ecological or geomorphological process on which the conservation of any protected feature of the MCZ is dependent?	Will there be any in-combination with other plans or projects on the feature?	Can impacts be mitigated for in the proposed method statement?	Will the conservation objective for the feature(s) be hindered?
		<p>for rats to be brought on to the island which has been rodent-free following the Isles of Scilly Seabird Recovery Project. are all contained in rodent proof containers.</p> <p>It is considered unlikely that these species would have an impact upon the features of this MCZ, however, mitigation to avoid their spread has been included in the CEMP (ES Volume II) and summarised here.</p>		<p>day site work. A toolbox talk will be given to all site staff regarding the importance of biosecurity on site.</p> <p>Biosecurity measures will be put in place to ensure the proposed works do not facilitate the spread of Brown rats across the site. Measures include the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. All local biosecurity measures to ensure that the works do not facilitate the spread of Brown Rats will be adhered to and documented in a biosecurity risk assessment.</p> <p>Following the procedures stated above, it is considered that there will be no significant effects on designated features as a result of non-native species or pathogens in the MCZ.</p>	
Changes to sediment	All features	Yes – As part of the proposed works a vessel will be used to transport construction materials	No	Yes - Any disturbance to sediment via the barge landing will be	No

Threat	Protected feature(s) that could be impacted	Capable of affecting either the protected species of the MCZ, or any ecological or geomorphological process on which the conservation of any protected feature of the MCZ is dependent?	Will there be any in-combination with other plans or projects on the feature?	Can impacts be mitigated for in the proposed method statement?	Will the conservation objective for the feature(s) be hindered?
composition and distribution		<p>to site, this is likely to be in the form of a barge. There is potential that the landing of the barge on site will impact designated features through disturbing or compaction of sediment. Any disturbance to sediment via the barge landing will be temporary and localised. There is also potential that the landing of the barge and the tracking of vehicles across the site may result in a small amount of sediment movement and compaction.</p> <p>.</p>		<p>temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p> <p>Following the procedures stated above, it is considered that there will be no significant effects on sediment composition and distribution in the MCZ.</p>	

Threat	Protected feature(s) that could be impacted	Capable of affecting either the protected species of the MCZ, or any ecological or geomorphological process on which the conservation of any protected feature of the MCZ is dependent?	Will there be any in-combination with other plans or projects on the feature?	Can impacts be mitigated for in the proposed method statement?	Will the conservation objective for the feature(s) be hindered?
Decrease in water quality through increase in levels of contaminants	All features	Yes – There is the potential to negatively impact designated features through pollution incidents. Appropriate mitigation measures will therefore be implemented through the construction phase to ensure that water quality is not adversely affected through pollution incidents and the release of contaminants from site.	No	Yes - Best guidance pollution prevention will be followed to minimise the risk of any such event, including a secure store for chemicals and vehicles off the beach, use of drip-trays for refuelling, and the carrying of spill-kits while carrying out works. No refuelling of machinery will occur within 7m of any waterbody. A toolbox talk will be given to all site staff for pollution prevention and incident response. All site staff will undertake emergency drills for incident response.	No
Decrease in water quality through increase in levels of turbidity	All features	Yes – As part of the proposed works a vessel will be used to transport construction materials to site, this is likely to be in the form of a barge. There is potential that the landing of the barge on site will impact designated features through disturbing sediment and therefore increasing turbidity levels, affecting water quality.	No	Yes - Any increases in turbidity via the barge landing will be temporary and localised and it is therefore considered that there will be no significant effects on sediment composition and turbidity in the MCZ.	No

8. Information / Advice (if applicable)

This section summarises the information and/or advice requested/received during the assessment.

Environment Agency internal advice and consultation (if applicable)

No advice was requested.

Natural England information / advice (if applicable)

No advice was requested.

Third party information / advice (if applicable)

No advice was requested.

9. References

GOV.UK (2019a) *Isles of Scilly MCZ: factsheet*. Available Online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/926991/mcz-isles-of-scilly-2019.pdf [Accessed: 28/02/2023]

GOV.UK (2019b) *Isles of Scilly MCZ: Feature Maps*. Available Online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/926990/isles-scilly-mcz-feature-maps.pdf [Accessed: 28/02/2023]

Natural England (2021a) *Natural England Conservation Advice for Marine Protected Areas - Isles of Scilly: Smith Sound Tide Swept Channel MCZ*. Available Online: [Marine site detail \(naturalengland.org.uk\)](https://www.naturalengland.org.uk/marine/marine-protected-areas/Isles-of-Scilly-Smith-Sound-Tide-Swept-Channel-MCZ) [Accessed: 28/02/2023]

Natural England (2021b) *Isles of Scilly: Smith Sound Tide Swept Channel MCZ – Supplementary Advice on Conservation Objectives*. Available online: [Designated Sites View \(naturalengland.org.uk\)](https://www.naturalengland.org.uk/marine/marine-protected-areas/Isles-of-Scilly-Smith-Sound-Tide-Swept-Channel-MCZ-Supplementary-Advice-on-Conservation-Objectives) [Accessed: 28/02/2023]

10. Decision

The Environment Agency concludes that there is || no significant risk / a significant risk and intends to refuse the application or not proceed with the activity / need for further assessment. ||

Name of Environment Agency officer:

Job title:

Date: || Select date ||

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Stage 1, Part 2)

Stage 1 assessment: Part 2 - Are there other means of proceeding that would create a substantially lower risk?

This is a record of the assessment of whether there are other means of proceeding that would create a substantially lower risk. It is to meet our duties under Sections 125-126 of the Marine and Coastal Access Act 2009. This record starts at Section 11 because it follows on from Stage 1, Part 1 which covers the assessment of whether there is a risk of hindering the achievement of the conservation objectives for the MCZ.

11. Assessment

There are no other means of proceeding with a substantially lower risk to the MCZ or its conservation objectives.

12. Decision

The Environment Agency || are satisfied that there is no other means of proceeding with the PPP / concludes that there are other means of proceeding with the PPP. ||

Name of Environment Agency officer:

Job title:

Date: || Select date ||

Marine Conservation Zone (MCZ) Stage 1 Assessment

Environment Agency record of assessment (Consultation)

13. Consultation

Date sent to Natural England:

Date response received from Natural England:

Do Natural England have concerns about the assessment?

Do Natural England have concerns about the decision?

Natural England advice

Write here...

Name of Natural England officer:

Job title:

Date:

Appendix 5.3a: Bryher WFD Assessment

Water Framework Directive Assessment Bryher

Final Report

April 2023

www.jbaconsulting.com



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ISLES OF SCILLY**

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Revision History

Revision Ref/Date	Amendments	Issued to
April 2023	Final Report	Council of the Isles of Scilly

Contract

This report describes work commissioned by the Council of the Isles of Scilly. JBA Consulting carried out this work.

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Purpose

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Abbreviations

CEMP.....	Construction Environmental Management Plan
DrWPA.....	Drinking Water Protected Area
EA.....	Environment Agency
HRA	Habitats Regulations Assessment
RBD.....	River Basin District
RBMP	River Basin Management Plan
RNAG	Reasons for Not Achieving Good
SAC	Special Area of Conservation
SgZ.....	Safeguard Zones
SMP	Sediment Management Plan
SSSI	Site of Special Scientific Interest
WFD.....	Water Framework Directive

1 Introduction

1.1 WFD Overview

The Water Framework Directive (WFD) came into force in 2000 and is the most substantial piece of EU water legislation to date. The Directive imposes legal requirements to protect and improve the water environment. All activities in the water environment need to take the Directive into account. The EU Water Framework Directive was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The 2003 regulations were consolidated and replaced with the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. The Floods and Water (Amendment etc.) (EU Exit) Regulations 2019 ensure that floods and water legislation continues to be operable in the United Kingdom following withdrawal from the EU in January 2021. The instrument addresses deficiencies in retained EU law arising from the UK's withdrawal from the EU. The purpose of the instrument is to preserve and protect the existing policy regime rather than to introduce new policy. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, as amended by the Floods and Water (Amendment etc.) (EU exit) Regulations 2019, are hereafter referred to as the WFD Regulations in this report.

1.1.1 Scope of the WFD Assessment

The WFD Regulations require that Environmental Objectives be set for all surface and ground waters in England and Wales to enable them to achieve Good Status (or Good Ecological Potential for Heavily Modified and Artificial Water Bodies) by a defined date. These Environmental Objectives are listed below:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters.
- Aim to achieve at least good status/potential for all water bodies by 2021. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status/potential by 2027.
- Meet the requirements of Water Framework Directive Protected Areas.
- Promote sustainable use of water as a natural resource.
- Conserve habitats and species that depend directly on water.
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment.
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants.
- Contribute to mitigating the effects of floods and droughts.

1.1.2 Preventing Deterioration in Status

Any activity which has the potential to have an impact on the ecology of a water body will need consideration in terms of whether it could cause deterioration in its Ecological Status or Potential¹.

For each water body, three different status objectives are identified within the RBMP. These are the overall status objective, the ecological status or potential objective and the chemical status objective. A default objective for all water bodies is to prevent the deterioration in the Ecological Status (or Ecological Potential for Heavily Modified and Artificial Water Bodies) of the water body. Note, the Ecological Status applies only to surface water bodies, and not ground water bodies. A separate assessment may be required to assess the impacts on the chemical and quantitative status of a ground water body, if the proposed activity is likely to cause impact.

The Ecological Status of a water body is determined through analysis of its constituent Biological Quality Elements. These elements are in turn supported by a series of Physico-Chemical and Hydromorphological Quality Elements. These Quality Elements are taken from Annex V of the WFD Regulations and are listed below. The overall Ecological Status is determined by the lowest element status.

The Biological Quality Elements assessed in the WFD include:

- Invertebrates

The WFD defines the flow and physical characteristics of a water body as its 'hydromorphology'. Any proposed works can impact upon a water body and the natural processes that occur within it, including:

- Flow patterns (tidal, freshwater inputs, wave exposure)
- Depth variation
- Sediment availability/ transport
- Ecology and biology (i.e. habitats which support plants and animals)
- The WFD considers the chemistry of a water body through general water quality (physico-chemical measurements), harmful algae and chemical pollutants. All three environmental components; morphology, hydrology and chemistry, support the Biology of a water body.

Any activity that has the potential to have an impact upon any of the Quality Elements will need consideration in terms of whether it could cause a deterioration in the status of a water body. The activity will also need to be considered in terms of whether it will compromise the ability of the water body to reach Good Ecological Status or Good Ecological Potential by the date specified in the Catchment Data Explorer.

Any adverse impacts can cause a water body's ecology to deteriorate and prevent environmental improvements from being undertaken. Nevertheless, works can also be beneficial if they can be designed to help achieve environmental improvements included in the RBMP, thus enhancing the water environment for plants and animals.

¹ Environment Agency (2010) Assessing new modifications for compliance with WFD: detailed supplementary guidance: 488_10_SD01

1.1.3 Artificial or Heavily Modified Water Bodies

Whilst good ecological status is defined as a slight variation from undisturbed natural conditions in natural water bodies, artificial and heavily modified water bodies are unable to achieve natural conditions. Instead, artificial and heavily modified water bodies have a target to achieve Good Ecological Potential, which recognises their important uses, whilst making sure ecology is protected as far as possible. Ecological potential is also measured on the scale high, good, moderate, poor and bad. The chemical status of these water bodies is measured in the same way as for natural water bodies.

Specific mitigation measures have been identified for each Artificial and Heavily Modified Water body and are listed in the RBMP. These mitigation measures are necessary to reduce the existing hydromorphological impacts on the water body and all measures need to be in place in order for the water body to achieve 'Good' Ecological Status or Potential.

1.2 Purpose of this WFD Assessment

JBA Consulting was commissioned by the Council of the Isles of Scilly to undertake a WFD assessment for proposed coastal flood defence works to be undertaken at five locations around the island of Bryher.

This WFD assessment aims to determine the effects of the proposed works on ecological, hydromorphological and chemical quality and identify any potential impacts that could cause deterioration in the current status of the water body or could hinder the water body from meeting its WFD objectives in the future.

The works sites are located adjacent to the Scilly Isles water body (Water Body ID GB620807080000) and falls within the Scilly Isles Coastal Operational Catchment. The Environmental Objectives, together with the specific actions (mitigation measures) necessary to enable the water body to meet these objectives, are set out in the South West river basin district river basin management plan (RBMP) and Catchment Data Explorer (EA, 2023)².

² Environment Agency Catchment Data Explorer. Accessed on 13th February 2023 via <https://environment.data.gov.uk/catchment-planning/>

2 Assessment Methodology

2.1 Overview

The following chart summarises the WFD Assessment process

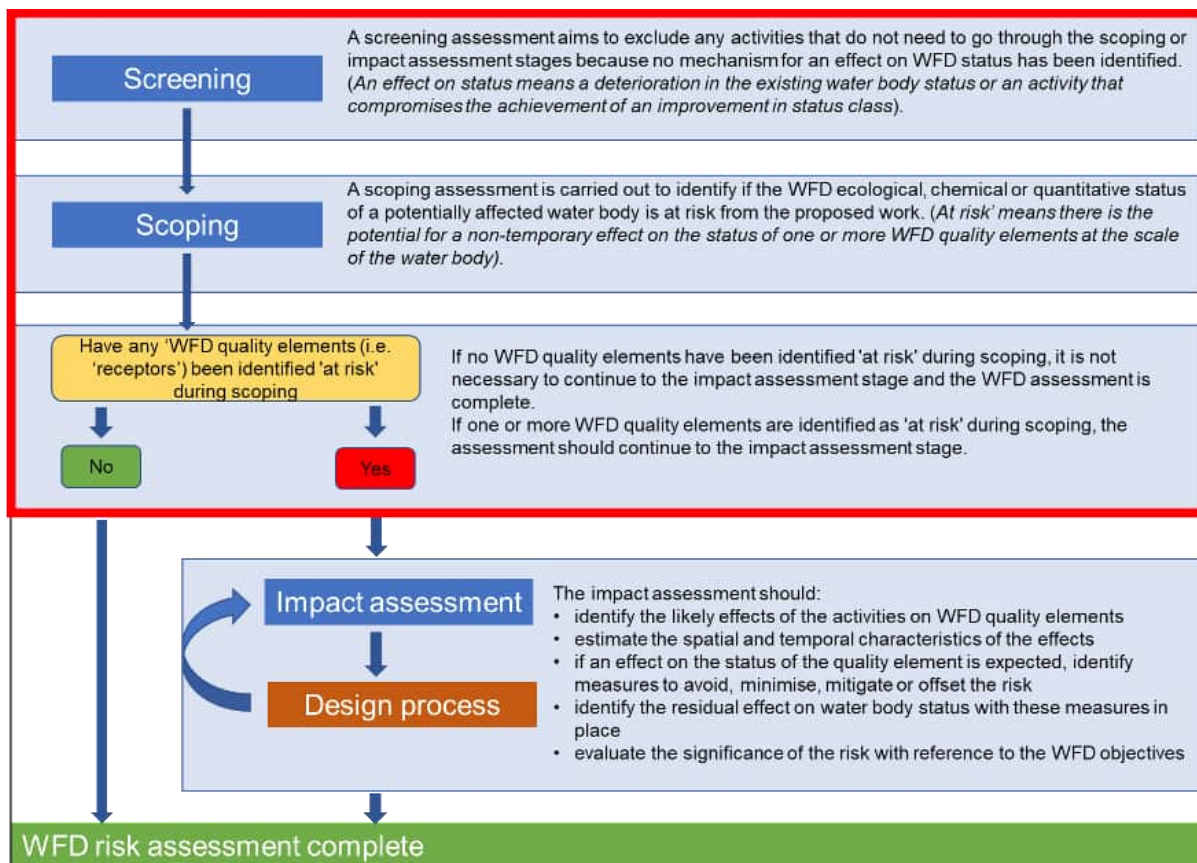


Figure 2-1: WFD assessment process flow chart

2.2 Screening Assessment

The Screening Assessment aims to exclude any activities that do not need to go through the scoping or impact assessment stages.

The South West RBMP and the Environment Agency's web-based Catchment Data Explorer website were used to determine which water bodies could be potentially affected by the proposed works. The names, ID numbers, designation, status classification and objectives for all relevant water bodies were obtained and downloaded from the Environment Agency's Catchment Data Explorer website.

The initial stage of the assessment screens the proposed works against the Ecological and Chemical Status objectives for the water bodies potentially affected by the works, together with their Quality Elements. The aim of this process is to determine whether the works could have an impact upon any of these criteria. Those criteria for which no potential adverse effects are identified are not considered further in the assessment. Any potential adverse effects are screened into the assessment and are carried forward to a detailed assessment.

2.3 Scoping Assessment

A detailed assessment is then undertaken to determine the effects that the proposed works could have upon those Quality Elements screened into the assessment. Any impacts identified are then considered in relation to the Ecological Status of the water body, which comprises biology, hydrology, hydromorphology and water chemistry, and the water body objectives.

The following assessment objectives are then used to determine whether the proposed works comply with the overarching objectives of the WFD. These objectives were therefore derived from the Environmental Objectives of the Directive (as listed in section 1.1.2).

- Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the water body.
- Objective 2: The proposed works do not compromise the ability of the water body to achieve its WFD status objectives.
- Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD.
- Objective 4: The proposed works contribute to the delivery of the WFD objectives.

In order to establish whether the proposed works comply with the WFD it is necessary to ascertain whether the works have the potential to result in:

- Failure of a water body to achieve Good Ecological Status or Potential; or
- Failure to prevent a deterioration in the Ecological Status or Potential of a water body

If the answer to these questions is 'no' the proposed works can be considered WFD compliant. If either of these failures is identified and if any receptors are identified as 'at risk', further assessment may be required to identify if the proposed works meet all of the conditions set out by the WFD Legislation.

2.4 Impact Assessment

The third stage of the WFD Assessment, if determined as necessary from the Screening and Scoping Assessments, is to undertake an Impact Assessment to consider the impacts of the proposed works in more detail and recommend necessary mitigation measures. An impact assessment must be carried out for each receptor identified during scoping as being at risk from your activity.

The Impact Assessment describes how any identified impacts from the proposed works will be mitigated, to either avoid or minimise the impacts. The assessment shows how any impact on WFD receptor caused by the proposed activity fits with the objectives of any affected WFD water bodies. After the works have been amended to try and avoid, minimise, mitigate or compensate for the risks to WFD receptors the following questions will need to be answered:

- Could the activity still cause a water body to deteriorate from one WFD status class to another or cause significant localised impacts that could contribute to this happening?
- Could the activity prevent or undermine action to get water bodies to good status?

When these questions are answered, the following should be borne in mind:

- A water body deteriorates in status when one WFD receptor (an "element") is affected such that it drops from one WFD status class to another.
- A significant localised impact on an element is one that is either long-lasting; causes severe harm; or affects a wide area within a water body. These are likely to contribute to a water body dropping from one status to another and highly likely to prevent action to get water bodies to good status.
- Elements at high status are very sensitive. The assessment will need to demonstrate that there will be a negligible impact on those aspects of the water environment.
- Elements at bad status must not be made worse.

If it cannot be demonstrated with a high level of confidence that the activity supports RBMP objectives, then in order for the Environment Agency to permit the activity it must be shown that the activity meets the criteria set out in Article 4(7) of the WFD. Article 4(7) sets out stringent environmental and socio-economic tests to assess if a scheme meets strict environmental and sustainability criteria.

3 Project Description

3.1 Project Overview

The proposals consist of a series coastal defence schemes around the island of Bryher, Isles of Scilly. The works will take place in five locations:

- Great Popplestone;
- Stinking Porth;
- Great Porth (Great Par), North of Great Carn;
- Green Bay; and
- Kitchen Porth.

These works are to be completed in support of improving resilience of the island’s drinking water supply from coastal inundation as well as resilience from coastal flooding and erosion. Locations of the works are presented in Figure 3-1.



Figure 3-1: Location of works – Bryher

3.2 Proposed Works

3.2.1 Great Popplestone

Works are required at Great Popplestone to protect the island's water supply from seawater inundation and consequently contamination of the island's drinking water supply (Great Pool and the low-lying water meadow at Great Popplestone). The proposed development will comprise the following elements:

- Raising of rock armour crest level to reduce overtopping (protecting Great Pool). Two options are being considered for this, option 1: import rock required to raise crest level, option 2: movement of scattered rocks from historical revetment further north in the bay for this purpose.
- The proposed development would make use of the existing protection and enhance it rather than require any demolition works. If option 2 were to be chosen, these rocks would not be replaced, however, the dune behind will be re-graded to allow it to adjust to the new situation naturally and reduce the risk of wave overtopping. This option would avoid the need to import rock.

3.2.2 Stinking Porth

At Stinking Porth there is a need to increase the crest height above the present level at the rear of the beach, along with a requirement for a stable structure resistant to wave attack, to protect the island's water supply (Great Pool) from seawater inundation. The proposed works include:

- A new revetment with a higher crest level along a 55m section of Stinking Porth, where the existing crest levels are below 5.5m. The rear of the structure here needs to be increased in width and level to provide resistance to overtopping discharges. The proposed revetment is a robust solution that will provide resilience against extreme storm events and protection for Great Pool.
- The slope of the main armour will be 1:2, comprising of a mix of 1 to 3 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour layer will be set at +6.5m to prevent overtopping. Using existing and reclaimed material, the leeward side of the structure can be brought up to +6.5m to match the crest and also help re-establish the footpath behind.
- The rock armour and underlayer/geotextile will replace the top of the beach and provide a suitable structure to resist overtopping and maintain the required crest level.
- The seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.
- Whilst the revetment is a change to the appearance of the beach from the existing dune appearance, it will provide the necessary protection.

3.2.3 Great Porth (Great Par) North of Great Carn

There is a need to increase defences at Great Porth (Great Par) north of Great Carn to protect the island's water supply (Great Pool) from seawater inundation, and also to

maintain the protection of people and property, infrastructure, and the Pool of Bryher and Popplestone Bank (Bryher) SSSI. There is also a need to replace unsuitable informal defences that have been laid. The proposed development comprises the following elements:

- Design and construction of a new 80m rock revetment with an impermeable core, incorporating a vehicle and boat access point through a storm gate or similar demountable storm barrier. The new revetment would be a robust solution that will provide resilience against extreme storm events.
- The slope of the main armour will be 1:2, comprising of a mix of 1 to 3 tonne rocks. It is anticipated that some rock can be sourced from the islands themselves, however, there may be a requirement to import some rock.
- The crest of the armour will be set at +6.0m, with a 3m wide crest to prevent overtopping.
- It is proposed that material will be placed on the rear of the rock crest to tie into existing ground levels. The material will provide some initial resistance to any overtopping discharges and will help the rear of the crest tie into the area behind.
- A demountable flood barrier is proposed to protect the lower level crest of the boat ramp. This would be a steel frame and stop log panel that can easily be erected by one person. The frame will need to be fixed to the rock crest at both ends. This flood barrier will rely on human intervention and as such, an appropriate warning system will be required so that the stop logs are inserted to provide the required protection.
- Seeding/planting of grasses behind the crest will help to quickly re-establish the habitat and will fix the topsoil/sand to protect the rear of the crest line from any erosion.
- Whilst the revetment presents a change to the appearance of the beach from the existing dune appearance, the proposed extents are however similar to the existing revetment at the north of the beach.

An additional design concept has been presented to limit the impact of the proposed works on a Scheduled Monument (Gig Shed) at the rear of the beach at Great Porth. The additional design option has been presented by HR Wallingford (2023)³ with the aim of reducing the impact and extent of encroachment on the Scheduled Monument boundary. The consequence of the re-design is that the footprint of the rock revetment will encroach on to the adjacent beach and intertidal habitats.

3.2.4 Green Bay

At Green Bay there is a need to improve the permeability of the crest to manage the risk of overtopping since it can lead to flooding of the boatyard in the immediate vicinity. The proposed works include:

- Implementation of a resistant impermeable barrier at the crest to reduce the discharges reaching the boatyard. The crest will be excavated and impermeable geobags placed at a level of +5.5m, and then covered with natural reclaimed embankment along a stretch of 70m, to provide a permanent barrier layer.

3 HR Wallingford (2022) Isles of Scilly – Design Services for Off Islands Coastal Erosion Defence and Dune Management. Climate Adaptation Scheme – Detailed Design Report

- Reclaimed material will be replaced around the geobags with a minimum 0.3m cover to provide protection for them.
- The embankment will be vegetated to provide additional erosion protection as well as replicating existing habitats. The revegetated crest will be 5m wide, and contoured to blend into the immediate hinterland, to provide an embankment with a natural appearance and an ability to reduce flooding into the boatyard. A geomat will be implemented on the rear slope of the fill to help stabilise the slope whilst vegetation establishes itself.

3.2.5 Kitchen Porth

At Kitchen Porth there is a need to increase defences to protect a cluster of residential and non-residential properties from flood risk from overtopping, along with the access road to the high-tide quay, the Shipman Head and Shipman Down (Bryher) SSSI and the Isles of Scilly Ramsar. The proposed works include:

- The provision of additional armourstone in front of the existing structures for approximately 40m from the eastern corner of the beach up to the exit from the beach to the west to protect the exposed embankment and ram deposits from wave attack.
- The slope of the armourstone will be 1:2, comprising of a mix of 1 to 3 tonne rocks, either reclaimed from existing resources on the island or imported. It will tie into existing levels at each end, into the existing bank to the north and into the rock outcrop to the south. The implementation of this armourstone should dissipate the wave energy and prevent direct attack on the ram deposits.
- The proposed armourstone does not include an impermeable layer, nor is the crest level proposed to be increased, and so some overtopping discharge is still expected to reach/percolate to the gardens of the leeward properties.

4 WFD Screening Assessment

4.1 Overview

This screening assessment aims to screen in any works that require WFD Assessment and to identify which WFD water bodies are within and near to the proposed works.

The results of the screening assessment are presented below. The baseline status of the Quality Elements within the water bodies screened into the assessment are discussed in this chapter. As discussed in the Introduction and Methodology, if this section finds there is potential for the proposed works to cause deterioration in the status of a water body, or prevent it from achieving its status objectives, the relevant water body and its Quality Elements should be taken forward and considered further in the Scoping Assessment chapter.

4.2 WFD Water Bodies

The site of the proposed works is located within the South West TraC Management Catchment. The following water bodies are considered:

- Scilly Isles (Water Body ID - GB620807080000) - Coastal Water
- Isles of Scilly (Water Body ID - GB40802G081200) - Groundwater

4.2.1 Current Status

Details of the 2019 classification, status and objectives, as described by the EA Catchment Data Explorer, are summarised in Table 4-1.

Table 4-1: Water Body Screening Outcome

Water Body ID	Water Body Name	Hydromorphological Designation	Current Ecological Status/Potential	Overall Status Objective
GB620807080000	Scilly Isles	Not designated artificial or heavily modified	Good	Good (2019)
GB40802G081200	Isles of Scilly	N/A	N/A	Poor (2019)

4.3 Screening Outcome: Water Bodies

The following table indicates which water bodies have been screened in or out of the assessment and the reasons for this decision.

Table 4-2: Water Body Screening Outcome

Water Body	Reason	Screening Outcome
Scilly Isles	The proposed works are to take place adjacent to the Scilly Isles Coastal Water body, and some works may be expected to take place within the tidal frame.	Screened In
Isles of Scilly	This Groundwater body is located adjacent to and within the works boundary.	Screened In

4.4 Baseline Status of Screened in Water Bodies

For each water body screened into the assessment, details on the status of each element, as described by the Environment Agency’s Catchment Data Explorer are given below.

4.4.1 Scilly Isles (GB620807080000)

The three tables below describe the current status of the Ecological Elements according to the most recent WFD cycle.

Table 4-3 Biological Quality Elements Status

Biological Quality Element	Current Status (year)	Objective
Invertebrates	Good (2019)	Good
Angiosperms / Saltmarsh	Not assessed	Not assessed
Fish	Not assessed	Not assessed
Macroalgae	Not assessed	Not assessed
Phytoplankton	Not assessed	Not assessed

Table 4-4: Hydromorphological Quality Element Status

Hydromorphological Quality Element	Current Status (year)	Objective
Morphology	High (2019)	Not assessed

Table 4-5: Chemical Quality Elements Status

Chemical Quality Element	Current Status (year)	Objective
Priority hazardous substances		
Benzo(a)pyrene	Good (2019)	Good
Dioxins and dioxin-like compounds	Good (2019)	Good

Chemical Quality Element	Current Status (year)	Objective
Hexabromocyclododecane (HBCDD)	Good (2019)	Good
Hexachlorobenzene	Good (2019)	Good
Hexachlorobutadiene	Good (2019)	Good
Mercury and Its Compounds	Fail (2019)	Good
Perfluorooctane sulphonate (PFOS)	Good (2019)	Good
Polybrominated diphenyl ethers (PBDE)	Fail (2019)	Good
Priority Substances		
Fluoranthene	Good (2019)	Good

As a result of the classification of pollutants listed in Table 4-5, Priority hazardous substances is classified as a 'Fail'. No particular sectors or activities have been identified as Reasons for not achieving good (RNAG).

Water Quality also requires an assessment of historic occurrences and recording of harmful algae. However, this is not currently monitored within this water body and no further details are listed in the Environment Agency WFD Water Body Summary Table⁴.

4.4.2 Isles of Scilly (GB40802G081200)

Table 4-6 and Table 4-7 below describe the current status of the Quantitative and Chemical Elements of the groundwater body according to the most recent WFD cycle.

Table 4-6 Quantitative Quality Elements Status

Quantitative Quality Element	Current Status (year)	Objective
Quantitative Dependent Surface Water Body Status	Good (2019)	Good
Quantitative GWDTEs test	Good (2019)	Good
Quantitative Saline Intrusion	Poor (2019)	Good
Quantitative Water Balance	Good (2019)	Good

⁴ Water Framework Directive assessment guidance: Estuarine and Coastal Waters. Accessed on 3rd March 2023 via: <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>

Table 4-7 Chemical Quality Elements Status

Chemical Quality Element	Current Status (year)	Objective
Chemical Dependent Surface Water Body Status	Good (2019)	Good
Chemical Drinking Water Protected Area	Good (2019)	Good
Chemical GWDTes test	Good (2019)	Good
Chemical Saline Intrusion	Poor (2019)	Good
General Chemical Test	Poor (2019)	Good

As a result of the classification of Quantitative and Chemical Quality elements in Table 4-6 and Table 4-7 the overall water body is classified as 'Poor'. No particular sectors or activities have been identified as Reasons for not achieving good (RNAG).

4.5 Protected Areas

The WFD specifies that areas requiring special protection under other retained EC Directive and waters used for the abstraction of drinking water are identified as protected areas. These areas have their own objectives and standards. Article 4 of the WFD requires Member States to achieve compliance with the standards and objectives set for each protected area.

4.5.1 Drinking Water Groundwater Safeguard Zones (SgZ)

Drinking Water Protected Areas (DrWPA) are designated under the Water Framework Directive, with the aim of avoiding deterioration in their quality in order to reduce the level of purification treatment required in the production of drinking water. SgZs are areas where actions will be targeted to address the causes of DrWPA objective failure/risk of failure.

There are no SgZs on Bryher, with the nearest located 50 km east in Cornwall, on the British mainland. This is considered to be outside of the range whereby any associated impacts from the proposed works would affect groundwater sources.

4.6 Summary

To conclude the Screening Assessment, the following quality elements need to be considered further within the Scoping Assessment:

Scilly Isles (GB620807080000):

- Biological Elements;
- Hydromorphological Elements;
- Chemical Elements.

Isles of Scilly (GB40802G081200)

- Quantitative Quality Elements;

- Chemical Quality Elements.

5 WFD Scoping Assessment

5.1 Overview

This scoping assessment identifies whether the water body's receptors, identified during the screening assessment, are at risk from the proposed works discussed in Chapter 3. The proposed development works are being appraised in terms of their impact on WFD status and objectives. If any Quality Elements are found to be at risk of detrimental impact, further assessment and/ or mitigation may be required in the next chapter (as demonstrated by the final column).

Some WFD Quality Elements have not been formally assessed as part of the classification for this water body. However, due to the scale and nature of the proposed works, all WFD Quality Elements have been included in the previous screening and any identified impacts have been considered in relation to the ecological status of the water body and the status objectives.

Article 4.7 of the Directive defends deterioration in status or failure to meet WFD objectives resulting from new modifications or sustainable human development activities (if all conditions set out under this Article are met). If the assessment procedure predicts that an activity will cause deterioration in water body status or prevent a water body from meeting its ecological objectives, then an assessment is also required against the conditions listed in Article 4.7 of the WFD. If all the assessment conditions are met, there will not be a breach of the WFD and compliance will be attained.

5.2 Scoping Assessment

The Scoping Assessment considers the Scilly Isles Coastal Waterbody and the Isles of Scilly Groundwater body.

5.3 Scilly Isles Coastal Water Body (GB620807080000):

5.3.1 Biological Quality Assessment

Table 5-1 presents an assessment of the potential impact of the proposed works against the biological quality elements of the Scilly Isles Coastal Water Body.

Table 5-1 Potential impacts of proposed works relative to WFD Biological Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Invertebrates	Good	<p>Construction works have the potential to disrupt invertebrate communities and habitat via excavation of substrate material although this is expected to be temporary and limited to the construction phase of the scheme only.</p> <p>There is also the potential for indirect temporary impact to invertebrate populations via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for invertebrates.</p>	Yes (temporary, direct and indirect impacts)
Angiosperms	Not assessed	No saltmarsh has been identified within close proximity of the proposed works.	No
Fish	Not assessed	<p>There is also the potential for indirect temporary impact to fish populations via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for fish.</p>	Yes (temporary, indirect impacts)
Macroalgae	Not assessed	<p>Macroalgae will not be impacted directly, however, there is the potential to impact macroalgae on the adjacent rocky shore via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for macroalgae.</p>	Yes

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Phytoplankton	Not assessed	There is the potential accidental pollution spillages will have a negative impact upon ph. The permanent works are not expected to cause alteration to the WFD quality element status for macroalgae.	Yes

5.3.2 Hydromorphological Quality Assessment

Table 5-2 presents an assessment of the potential impact of the proposed works against the hydromorphological quality elements of the Scilly Isles Coastal Water Body.

Table 5-2 Potential impacts of proposed works relative to WFD Hydromorphological Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Morphology: Depth variation	Not assessed	Significant variation and/or changes to depth within the water body may impact on species present. e.g., alter light availability and restrict movement of non-sessile organisms. The location and scale of works relative to the water body are not considered to adversely impact on depth variation.	No
Morphology: Quantity, structure and substrate of the bed	Not assessed	Changes to structure and/or substrate within the water body may result from the possible transport of mobile sediment. The location and scale of works relative to the water body are not considered to adversely impact on quantity, structure and substrate of the bed.	No
Morphology: Structure of the intertidal zone	Not assessed	Changes to the structure of the intertidal zone may occur from the excavation and potential transport of mobile sediment and encroachment of defences into the intertidal zone. This could present an impact to wave and tidal hydrodynamics and impact on intertidal habitats and reliant species. The defences at Great Porth will encroach into the tidal frame and hence	Yes (direct and indirect impacts)

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
		there will be loss of intertidal area. There is also the potential for future coastal squeeze leading to further loss of intertidal habitat.	
Tidal regime: Freshwater flow	Not assessed	Alteration in the freshwater regime within the waterbody may change salinity levels impacting on species present. There are no directly connected freshwater inputs to the coastal water body therefore there are no adverse impacts on freshwater flow.	No
Tidal regime: Wave exposure	Not assessed	Changes to tidal conditions and wave exposure within the water body may result in alteration to the extent of sediment accretion/erosion further altering morphology. The location and scale of works relative to the water body are not considered to adversely impact on tidal regime and associated hydromorphological elements.	No

5.3.3 Chemical Quality Assessment

Table 5-3 presents an assessment of the potential impact of the proposed works against the Chemical quality elements of the Scilly Isles Coastal Water Body.

Table 5-3 Potential impacts of proposed works relative to WFD Chemical Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Benzo(a)pyrene	Good	Construction works are not expected to result in changes to the chemical quality elements within the coastal water body. Where possible works are proposed to be carried out in the dry, or during low tide, therefore, reducing the likelihood of disturbing sediments which could	Yes (temporary, direct and indirect impacts)
Dioxins and dioxin-like compounds	Good		
Hexabromocyclododecane (HBCDD)	Good		
Hexachlorobenzene	Good		
Hexachlorobutadiene	Good		
Mercury and Its Compounds	Fail		

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Perfluorooctane sulphonate (PFOS)	Good	<p>change chemical levels within the waterbody. In addition, the scale of works is small in relation to the size of the water body and hence the magnitude of any sediment disturbances are not expected to be significant.</p> <p>However, accidental pollution events could lead to chemicals entering this water body which could lead to temporary changes to the chemical quality elements present.</p> <p>The permanent works are not expected to cause alteration to the chemical quality elements for this coastal water body.</p>	
Polybrominated diphenyl ethers (PBDE)	Fail		
Fluoranthene	Good		

5.4 Isles of Scilly Groundwater Body (GB40802G081200)

5.4.1 Quantitative Quality Assessment

Table 5-4 presents an assessment of the potential impact of the proposed works against the quantitative quality elements of the Isles of Scilly Groundwater Body.

Table 5-4 Potential impacts of proposed works relative to WFD Quantitative Quality Elements of the Isles of Scilly Water Body

WFD Quality Element	Current Status (2015)	Potential Impact	Further assessment and/or mitigation required?
Quantitative Dependent Surface Water Body Status	Good	<p>Contamination and reduced groundwater quality may result from spillages and/or leaks of hazardous substances (e.g., oil, petrol, diesel) from machinery operation or equipment refuelling.</p> <p>Due to the highly permeable geology in the region, risk of impacts to groundwater from</p>	Yes (temporary, direct and indirect impacts)
Quantitative GWDTes test	Good		
Quantitative Saline Intrusion	Poor		

WFD Quality Element	Current Status (2015)	Potential Impact	Further assessment and/or mitigation required?
Quantitative Water Balance	Good	pollution incidents is enhanced.	

5.4.2 Chemical Quality Assessment

Table 5-5 presents an assessment of the potential impact of the proposed works against the chemical quality elements of the Isles of Scilly Groundwater Body.

Table 5-5 Potential impacts of proposed works relative to WFD Chemical Quality Elements of the Isles of Scilly Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Chemical Dependent Surface Water Body Status	Good	Contamination and reduced groundwater quality may result from spillages and/or leaks of hazardous substances (e.g., oil, petrol, diesel) from machinery operation or equipment refuelling. Due to the highly permeable geology in the region, risk of impacts to groundwater from pollution incidents is enhanced.	Yes (temporary, direct and indirect impacts)
Chemical Drinking Water Protected Area	Good		
Chemical GWDTes test	Good		
Chemical Saline Intrusion	Poor		
General Chemical Test	Poor		

5.5 Impacts of the Proposed Works on Protected Sites

5.5.1 Designated Nature Conservation Sites

The designated sites outlined in Table 5-6 are located adjacent to and within the scheme red line boundary.

Table 5-6 Designated Sites located adjacent to and within the scheme red line boundary

Designation	Primary reason(s) for designation
Isles of Scilly Complex Special Area of Conservation (SAC)	Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time

Designation	Primary reason(s) for designation
	<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide • Reefs Annex II species: <ul style="list-style-type: none"> • Shore dock <i>Rumex rupestris</i>
Isles of Scilly Special Protection Area (SPA);	Annex I species: <ul style="list-style-type: none"> • Storm Petrel <i>Hydrobates pelagicus</i> • Lesser Black-backed Gull <i>Larus fuscus</i> Breeding bird populations: <ul style="list-style-type: none"> • Great Black-backed Gull <i>Larus marinus</i> • Shag <i>Phalacrocorax aristotelis</i> • Lesser Black-backed Gull • Storm Petrel
Isles of Scilly Ramsar	Qualifying species: <ul style="list-style-type: none"> • European Storm Petrel • Lesser black-backed gull

Since Isles of Scilly SPA and Ramsar sites are designated primarily for their bird populations, these sites will not be considered further as part of this WFD Assessment. A Habitats Regulations Assessment (HRA) has been completed which details the impacts of the proposed scheme on these sites.

Impacts to the Isles of Scilly Complex SAC may arise from the construction phase of the scheme. As such, impacts to this designated site are scoped into the assessment.

WFD higher and lower sensitivity habitats are present in adjacent to works areas. These habitats include:

- Subtidal Seagrass Beds;
- Subtidal Rocky Reef;
- Rocky shore (intertidal rock);
- Subtidal Soft Sediment;
- Intertidal Soft Sediment;
- Gravel & Cobbles.

All of these habitats form part of the Isles of Scilly SAC designation and impacts to each habitat has been assessed as part of the HRA process and summarised in this report. .

6 WFD Impact Assessment

6.1 Overview

The Scoping Assessment presented in Chapter 5 identified some receptors may potentially be at risk from the proposed works. An Impact Assessment is therefore required to describe how these identified impacts will be mitigated.

The Impact Assessment needs to consider if there is a pathway linking the pressure to the receptor. If there is no pathway there can be no impact on the receptor and there is no need for any further assessment of that receptor to be carried out. If there is a potential pathway the assessment should consider if the activity, and the pressure it creates, may cause deterioration of the receptor.

In order to effectively assess the potential impacts of the proposed works and decide upon suitable mitigation measures, a good understanding of the proposed scheme and design is required. Should any revisions be made to the proposed works that could impact any of the WFD Quality Elements, this section should be revised.

6.2 Impact Assessment

Table 6-1 and Table 6-2 discuss each of the receptors identified as being potentially at risk in the scoping assessment. Mitigation measures are recommended to mitigate the effects of the proposed works.

Table 6-1: Impacts and Mitigation Measures – Scilly Isles Coastal Water Body (GB620807080000)

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Biological		
Invertebrates	Indirect and direct	<p>Temporary impact: Short-term localised loss or disturbance of intertidal habitats for invertebrates. However, these impacts will be short-lived and invertebrates will be able to colonise naturally following the completion of the works.</p> <p>Temporary impact: The temporary works may impact invertebrates through pollution events.</p> <p>Mitigation: Pollution prevention measures will be required to be implemented via a Construction Environmental Management Plan (CEMP) throughout construction in order to prevent a pollution event (e.g. sediment release, fuel leaks etc.).</p>
Fish	Indirect	<p>Temporary impact: The temporary works may impact fish, macroalgae and phytoplankton through pollution events.</p> <p>Mitigation: Pollution prevention measures will be required to be implemented via a Construction Environmental Management Plan (CEMP) throughout construction in order to prevent a pollution event (e.g. sediment release, fuel leaks etc.).</p>
Macroalgae		
Phytoplankton		
Hydromorphological		
Morphology: Structure of the intertidal zone	Direct and Indirect	<p>Temporary Impact: Construction works have the potential to disturb substrate material through excavation works. This impact is expected to be temporary and limited to the construction phase of the scheme only. Defences at Great Porth will encroach into the tidal frame, leading to loss of intertidal habitat. Coastal squeeze resulting from the construction of hard defences may lead to an increased loss of intertidal habitat over time.</p> <p>However, impacts are likely to be small in magnitude in relation to the size of the water body.</p> <p>Mitigation: Actions to limit sediment disturbance will be outlined in a Sediment Management Plan (SMP) which must be adhered to during construction.</p>
Chemical		

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Priority hazardous substances / priority substances	Indirect	<p>Temporary Impact: Construction work has the potential to mobilise disturbed sediments that may harbour priority hazardous substances adsorbed to the sediment surfaces. The resuspension of potential contaminated sediments could act as an active pathway for the dispersion of priority hazardous substances within the water body.</p> <p>Mitigation: Standard industry practices for the management of sediment will be employed to reduce mobilisation of potentially contaminated sediments arising from the construction phase of the works. This will be addressed by the implementation of the SMP and CEMP.</p>

Table 6-2: Impacts and Mitigation Measures - Isles of Scilly Groundwater Body (GB40802G081200)

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Quantitative and Chemical Status elements	Direct	<p>Temporary impact: Any impacts to the groundwater body arising from construction are expected to be negligible as there will be no intrusive works carried out. However, there is a risk of accidental pollution events that could lead to chemicals entering the water body leading to temporary changes to the quantitative and chemical quality elements.</p> <p>Mitigation: Best practice pollution prevention measures should be outlined in the CEMP and adhered to during the construction phase.</p>

6.2.1 Impacts to Designated Sites

A Habitats Regulations Assessment (HRA) Report has been produced which details potential impacts of the scheme on the designated nature conservation sites outlined in section 5.5.1.

The HRA outlines that impacts to the marine environment may arise due to disturbance and accidental spillages during construction. However, it concludes that if strict pollution and disturbance prevention measures are implemented, adverse impacts on the integrity of the sites can be ruled out.

6.3 Water Body Mitigation Measures

The Environment Agency’s Catchment Planning System outlines mitigation measures contributing to better ecological potential for relevant water bodies. Correspondence with the Environment Agency’s Catchment Coordinator (Cornwall) identified that neither water body screened into this assessment is designated as either artificial or heavily modified, subsequently there are no mitigation measures presented.

6.4 WFD Assessment Objectives

Following consideration of the potential impacts and recommended mitigation measures, Table 6-3 assesses whether the proposed works comply with the overarching objectives of the WFD.

Table 6-3: Assessment of the Proposed Works against the WFD Objectives

WFD Assessment Objective	Assessment of the Proposed Works
Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the water body	By adopting the mitigation measures highlighted herein the proposed works will not cause deterioration of the status of the ecological elements in the waterbodies assessed.
Objective 2: The proposed works do not compromise the ability of the water body to achieve its WFD status objectives	The scale of the proposed works relative to the size of the water body will not compromise the ability of the water bodies assessed to achieve their WFD status objectives.
Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD	There are no other bodies of water further to those assessed herein, therefore the works will not compromise achievement of the WFD objectives in other waterbodies .
Objective 4: The proposed works contribute to the delivery of the WFD objectives	By adopting the mitigation measures highlighted herein the proposed works are not expected to impact on the delivery of the WFD objectives.

7 Discussion and Conclusions

7.1 Assessment Summary

The proposed works on the island of Bryher have been assessed for compliance with the WFD Objectives with regards to the Scilly Isles Coastal Water body (Water Body ID - GB620807080000) and Isles of Scilly Ground Water Body (GB40802G081200). This assessment has been undertaken with the current proposed works design drawings. Should the design or scope of the work alter significantly, this report would need to be revised to ensure the mitigation measures and recommendations outlined in this report have been considered and to determine whether the final scheme is WFD-compliant.

7.1.1 Biological Assessment

The proposed works are not anticipated to pose a significant threat to the biological quality elements of the waterbodies, providing recommended mitigation measures are followed.

The works have the potential to cause temporary disturbance to invertebrate habitats within the footprint of the works due to sediment disturbance and temporary disturbance to invertebrates, fish, macroalgae and phytoplankton through accidental pollution incidents. Implementing strict pollution prevention measures will reduce the potential for pollution events. Works should be carried out at low tide, and best practice measures should be implemented to limit the risk of sediment disturbance.

Maintaining the existing alignment of the coastline through the provision of new hard defences has the potential to cause coastal squeeze. By renewing the defence in this area, it can be considered that a 'hold the line' approach is being taken. As sea levels rise intertidal habitats 'migrate' landwards, there is the potential that this will lead to intertidal habitats being 'squeezed' against the hard defence and eventually lost. An assessment of coastal squeeze has been undertaken as part of the Environmental Statement and HRAs for the schemes. This found that although there is likely to be a small scale negative impact on intertidal habitats at the local scale it is not considered that there will be a significant impact upon the status of the waterbody.

7.1.2 Hydromorphological Assessment

An assessment has identified that the proposed works are not likely to present a significant risk to hydromorphology of the Scilly Isles Coastal water body.

However, all construction work will be undertaken in accordance with best practice, which will reduce the likelihood of sediment mobilisation and subsequent impacts on WFD hydromorphological supporting elements. Furthermore, the scale of the proposed works relative to the size of the water body mean that any potential impacts are only likely to be localised and are not expected to adversely affect the wider water body.

In the event that excavated sediments are mobilised, the impact of increased turbidity within the water body and adjacent sensitive WFD habitats is considered to be temporary and is assessed as being insignificant. Operation of the completed works is not likely to significantly affect or alter sedimentary processes and/or turbidity of the water column. As such, no significant impact on water body status is expected during either the construction or operational phases of the proposed work.

7.1.3 Chemical Assessment

Construction work has the potential to mobilise disturbed sediments that may harbour priority hazardous substances adsorbed to the sediment surfaces. The resuspension of potential contaminated sediments could act as an active pathway for the dispersion of priority hazardous substances within the water body. Pollution incidents may lead to a deterioration in chemical quality of both the Scilly Isles coastal water body and Isles of Scilly ground water body.

Industry best practice guidance should be outlined in a Sediment Management Plan (SMP) and Construction Environmental Management Plan (CEMP) and these documents should be adhered to throughout the construction phase. These documents should include measures to limit disturbance of sediment and risk of pollution incidents.

7.2 Scheme Recommendations/ Key Considerations

The impact assessment determines whether the proposed works have the potential to significantly impact any of the quality elements screened into the assessment. Any mitigation measures that need to be considered to make the works compliant with the WFD are presented in Table 6-1 and Table 6-2; however, the critical ones are listed below:

- Sediment Management Plan (SMP)
- Construction Environmental Management Plan (CEMP), which should include measures such as:
 - Pollution prevention measures (daily machinery checks)
 - On site spill kit availability

7.3 Conclusions

The proposed works are expected to be compliant with WFD objectives if the appropriate mitigation measures described in relation to each potential impact are incorporated into the temporary works design. The proposed works are not expected to have a significant impact on any WFD receptors and no significant short-term, or long-term impacts are predicted, during either the construction or operational phases of the works.

There is the potential for the mobilisation of sediment and pollution incidents during construction operations; effects are however expected to be localised and temporary in nature and are not considered to be significant.

Collectively the proposed works are not expected to contribute towards the failure of the water body to achieve Good Ecological Status or Potential; or to contribute towards a deterioration in the Ecological Status or Potential of a water body.

Furthermore, the implementation of the defence structures at Great Popplestone, Great Porth and Stinking Porth are intended to reduce localised coastal flooding during storm events. This is expected to have a positive impact on the Isles of Scilly Groundwater body by reducing wave overtopping and future saline intrusion to freshwater sources, e.g., Great Pool. This may result in improvements to the Quantitative and Chemical Status elements of the water body.

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Appendix 5.3b: St Agnes WFD Assessment



Water Framework Directive Assessment St Agnes

Final Report

April 2023

www.jbaconsulting.com



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Purpose

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Abbreviations

CEMP.....	Construction Environmental Management Plan
DrWPA.....	Drinking Water Protected Area
EA.....	Environment Agency
HRA	Habitats Regulations Assessment
RBD.....	River Basin District
RBMP	River Basin Management Plan
RNAG	Reasons for Not Achieving Good
SAC	Special Area of Conservation
SgZ.....	Safeguard Zones
SMP	Sediment Management Plan
SSSI	Site of Special Scientific Interest
WFD.....	Water Framework Directive

1 Introduction

1.1 WFD Overview

The Water Framework Directive (WFD) came into force in 2000 and is the most substantial piece of EU water legislation to date. The Directive imposes legal requirements to protect and improve the water environment. All activities in the water environment need to take the Directive into account. The EU Water Framework Directive was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The 2003 regulations were consolidated and replaced with the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. The Floods and Water (Amendment etc.) (EU Exit) Regulations 2019 ensure that floods and water legislation continues to be operable in the United Kingdom following withdrawal from the EU in January 2021. The instrument addresses deficiencies in retained EU law arising from the UK's withdrawal from the EU. The purpose of the instrument is to preserve and protect the existing policy regime rather than to introduce new policy. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, as amended by the Floods and Water (Amendment etc.) (EU exit) Regulations 2019, are hereafter referred to as the WFD Regulations in this report.

1.1.1 Scope of the WFD Assessment

The WFD Regulations require that Environmental Objectives be set for all surface and ground waters in England and Wales to enable them to achieve Good Status (or Good Ecological Potential for Heavily Modified and Artificial Water Bodies) by a defined date. These Environmental Objectives are listed below:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters.
- Aim to achieve at least good status/potential for all water bodies by 2021. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status/potential by 2027.
- Meet the requirements of Water Framework Directive Protected Areas.
- Promote sustainable use of water as a natural resource.
- Conserve habitats and species that depend directly on water.
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment.
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants.
- Contribute to mitigating the effects of floods and droughts.

1.1.2 Preventing Deterioration in Status

Any activity which has the potential to have an impact on the ecology of a water body will need consideration in terms of whether it could cause deterioration in its Ecological Status or Potential¹.

For each water body, three different status objectives are identified within the RBMP. These are the overall status objective, the ecological status or potential objective and the chemical status objective. A default objective for all water bodies is to prevent the deterioration in the Ecological Status (or Ecological Potential for Heavily Modified and Artificial Water Bodies) of the water body. Note, the Ecological Status applies only to surface water bodies, and not ground water bodies. A separate assessment may be required to assess the impacts on the chemical and quantitative status of a ground water body, if the proposed activity is likely to cause impact.

The Ecological Status of a water body is determined through analysis of its constituent Biological Quality Elements. These elements are in turn supported by a series of Physico-Chemical and Hydromorphological Quality Elements. These Quality Elements are taken from Annex V of the WFD Regulations and are listed below. The overall Ecological Status is determined by the lowest element status.

The Biological Quality Elements assessed in the WFD include:

- Invertebrates

The WFD defines the flow and physical characteristics of a water body as its 'hydromorphology'. Any proposed works can impact upon a water body and the natural processes that occur within it, including:

- Flow patterns (tidal, freshwater inputs, wave exposure)
- Depth variation
- Sediment availability/ transport
- Ecology and biology (i.e. habitats which support plants and animals)
- The WFD considers the chemistry of a water body through general water quality (physico-chemical measurements), harmful algae and chemical pollutants. All three environmental components; morphology, hydrology and chemistry, support the Biology of a water body.

Any activity that has the potential to have an impact upon any of the Quality Elements will need consideration in terms of whether it could cause a deterioration in the status of a water body. The activity will also need to be considered in terms of whether it will compromise the ability of the water body to reach Good Ecological Status or Good Ecological Potential by the date specified in the Catchment Data Explorer.

Any adverse impacts can cause a water body's ecology to deteriorate and prevent environmental improvements from being undertaken. Nevertheless, works can also be beneficial if they can be designed to help achieve environmental improvements included in the RBMP, thus enhancing the water environment for plants and animals.

¹ Environment Agency (2010) Assessing new modifications for compliance with WFD: detailed supplementary guidance: 488_10_SD01

1.1.3 Artificial or Heavily Modified Water Bodies

Whilst good ecological status is defined as a slight variation from undisturbed natural conditions in natural water bodies, artificial and heavily modified water bodies are unable to achieve natural conditions. Instead, artificial and heavily modified water bodies have a target to achieve Good Ecological Potential, which recognises their important uses, whilst making sure ecology is protected as far as possible. Ecological potential is also measured on the scale high, good, moderate, poor and bad. The chemical status of these water bodies is measured in the same way as for natural water bodies.

Specific mitigation measures have been identified for each Artificial and Heavily Modified Water body and are listed in the RBMP. These mitigation measures are necessary to reduce the existing hydromorphological impacts on the water body and all measures need to be in place in order for the water body to achieve 'Good' Ecological Status or Potential.

1.2 Purpose of this WFD Assessment

JBA Consulting was commissioned by the Council of the Isles of Scilly to undertake a WFD assessment for proposed coastal flood defence works to be undertaken at three locations around the island of St Agnes.

This WFD assessment aims to determine the effects of the proposed works on ecological, hydromorphological and chemical quality and identify any potential impacts that could cause deterioration in the current status of the water body or could hinder the water body from meeting its WFD objectives in the future.

The works sites are located adjacent to the Scilly Isles water body (Water Body ID GB620807080000) and falls within the Scilly Isles Coastal Operational Catchment. The Environmental Objectives, together with the specific actions (mitigation measures) necessary to enable the water body to meet these objectives, are set out in the South West river basin district river basin management plan (RBMP) and Catchment Data Explorer (EA, 2023)².

² Environment Agency Catchment Data Explorer. Accessed on 13th February 2023 via <https://environment.data.gov.uk/catchment-planning/>

2 Assessment Methodology

2.1 Overview

The following chart summarises the WFD Assessment process

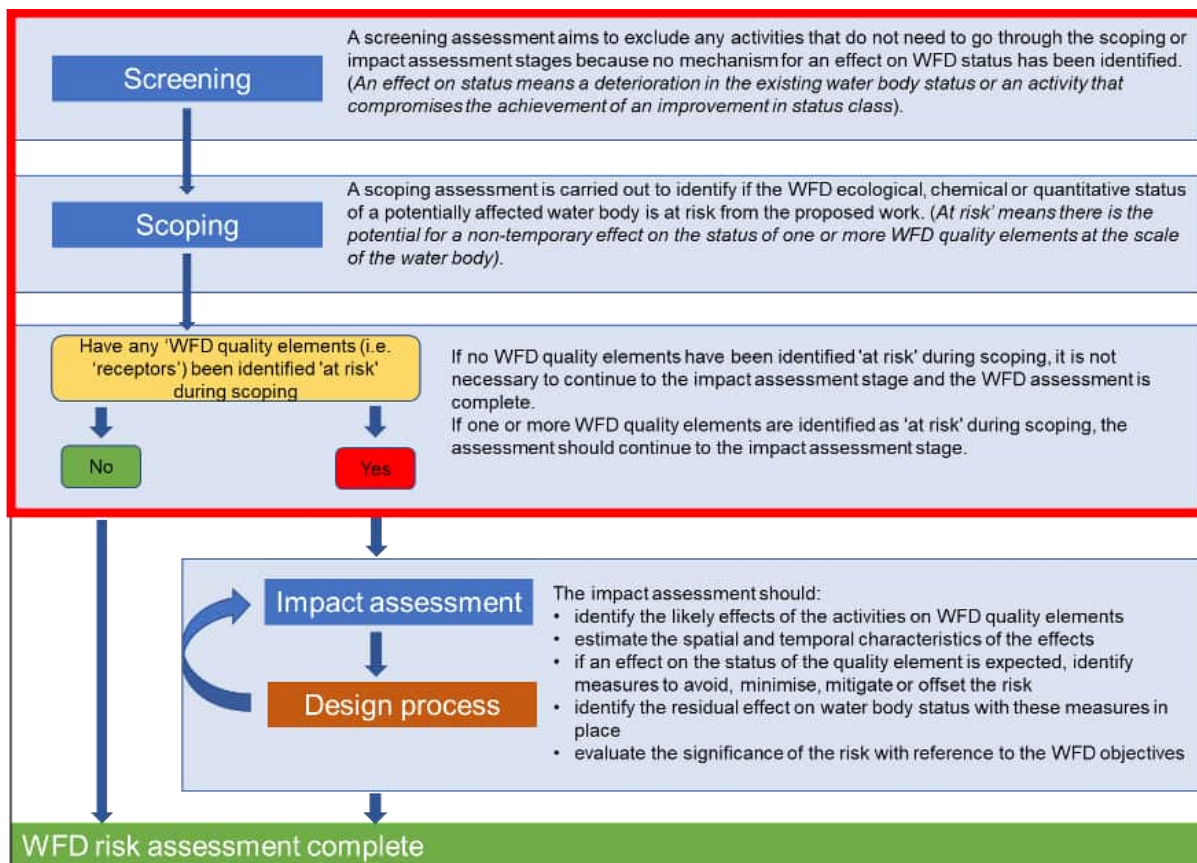


Figure 2-1: WFD assessment process flow chart

2.2 Screening Assessment

The Screening Assessment aims to exclude any activities that do not need to go through the scoping or impact assessment stages.

The South West RBMP and the Environment Agency's web-based Catchment Data Explorer website were used to determine which water bodies could be potentially affected by the proposed works. The names, ID numbers, designation, status classification and objectives for all relevant water bodies were obtained and downloaded from the Environment Agency's Catchment Data Explorer website.

The initial stage of the assessment screens the proposed works against the Ecological and Chemical Status objectives for the water bodies potentially affected by the works, together with their Quality Elements. The aim of this process is to determine whether the works could have an impact upon any of these criteria. Those criteria for which no potential adverse effects are identified are not considered further in the assessment. Any potential adverse effects are screened into the assessment and are carried forward to a detailed assessment.

2.3 Scoping Assessment

A detailed assessment is then undertaken to determine the effects that the proposed works could have upon those Quality Elements screened into the assessment. Any impacts identified are then considered in relation to the Ecological Status of the water body, which comprises biology, hydrology, hydromorphology and water chemistry, and the water body objectives.

The following assessment objectives are then used to determine whether the proposed works comply with the overarching objectives of the WFD. These objectives were therefore derived from the Environmental Objectives of the Directive (as listed in section 1.1.2).

- Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the water body.
- Objective 2: The proposed works do not compromise the ability of the water body to achieve its WFD status objectives.
- Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD.
- Objective 4: The proposed works contribute to the delivery of the WFD objectives.

In order to establish whether the proposed works comply with the WFD it is necessary to ascertain whether the works have the potential to result in:

- Failure of a water body to achieve Good Ecological Status or Potential; or
- Failure to prevent a deterioration in the Ecological Status or Potential of a water body

If the answer to these questions is 'no' the proposed works can be considered WFD compliant. If either of these failures is identified and if any receptors are identified as 'at risk', further assessment may be required to identify if the proposed works meet all of the conditions set out by the WFD Legislation.

2.4 Impact Assessment

The third stage of the WFD Assessment, if determined as necessary from the Screening and Scoping Assessments, is to undertake an Impact Assessment to consider the impacts of the proposed works in more detail and recommend necessary mitigation measures. An impact assessment must be carried out for each receptor identified during scoping as being at risk from your activity.

The Impact Assessment describes how any identified impacts from the proposed works will be mitigated, to either avoid or minimise the impacts. The assessment shows how any impact on WFD receptor caused by the proposed activity fits with the objectives of any affected WFD water bodies. After the works have been amended to try and avoid, minimise, mitigate or compensate for the risks to WFD receptors the following questions will need to be answered:

- Could the activity still cause a water body to deteriorate from one WFD status class to another or cause significant localised impacts that could contribute to this happening?
- Could the activity prevent or undermine action to get water bodies to good status?

When these questions are answered, the following should be borne in mind:

- A water body deteriorates in status when one WFD receptor (an "element") is affected such that it drops from one WFD status class to another.
- A significant localised impact on an element is one that is either long-lasting; causes severe harm; or affects a wide area within a water body. These are likely to contribute to a water body dropping from one status to another and highly likely to prevent action to get water bodies to good status.
- Elements at high status are very sensitive. The assessment will need to demonstrate that there will be a negligible impact on those aspects of the water environment.
- Elements at bad status must not be made worse.

If it cannot be demonstrated with a high level of confidence that the activity supports RBMP objectives, then in order for the Environment Agency to permit the activity it must be shown that the activity meets the criteria set out in Article 4(7) of the WFD. Article 4(7) sets out stringent environmental and socio-economic tests to assess if a scheme meets strict environmental and sustainability criteria.

3 Project Description

3.1 Project Overview

The proposals consist of a series coastal defence schemes around the island of St Agnes, Isles of Scilly. The works will take place in three locations:

- Porth Killer;
- Porth Coose; and
- Periglis.

These works are to be completed in support of improving resilience of the island from coastal flooding and erosion and potential saline intrusion to freshwater supplies. Locations of the works are presented in Figure 3-1.



Figure 3-1: Location of works – St Agnes

3.2 Proposed Works

3.2.1 Porth Killier

Coastal erosion and flood risk at Porth Killier presents a risk of inundation and contamination at the Big Pool, along with a risk of undermining the road that runs along the southern extent of Porth Killier and residential and non-residential properties and infrastructure in the vicinity.

The Porth Killier site has been divided into three areas of intervention: the sea wall; the eastern end; and the western end. Overtopping has not occurred at the western end and therefore no works are proposed there. The proposed works for the sea wall and the eastern end are outlined below.

The seawall

- Implementation of a rock scour protection at the foundation of the seawall. Wider toe protection of 1 to 3 tonne rock size with a minimum width of 3m is recommended to protect the wall from undermining and failure, and also to reduce overtopping.
- A 30m section of the eastern side of the wall has been identified as the most damage and as such, a 3m toe-berm of 1 to 3 tonne rock armour toe berm is proposed here. In some locations where damage is more severe, local repairs may be required prior to placing the rocks.
- A 35m section on the western side has been identified as the least damaged and as such, the rock toe here will be characterised by 1.9m wide 1 to 3 tonne rocks and 1.1m of cobbles, which will tie into the existing rock headland.
- Rock material will be sourced locally where possible but will need to be imported if unavailable.

Eastern end

- Construction of a rock structure revetment with 1 to 3 tonne material to reduce halt ram erosion. The rock revetment would be placed up to the crest of the underside of the ram/outcrop to reduce the cut back towards the road. In order to minimise the volume of rock required, rock armour will be protected by a cobble toe that will make use of existing materials.
- The presence of the revetment will improve the stability of the halt ram and also act as a reduction to wave overtopping events.

3.2.2 Porth Coose

Porth Coose provides protection to Big Pool, important freshwater habitat, wells, aquifers and local infrastructure. Defences have historically been severely overtopped and as such enhanced defences are required.

The proposed works include:

- Provision of a more robust and wider ridge crest along the entire length of the Porth Coose. The crest elevation would be increased through recharge using local and imported material and rock bags with the rear filled with site won material to grade to existing levels.
- The rock bags will be placed on a prepared geotextile surface at the top of the slopes and fill material is to be placed behind to tie in the top of the bags to the ground behind. A geomat will be placed to stabilise this slope and encourage establishment of vegetation.
- The crest elevation will be increased to prevent overtopping and should be at approximately +7.3m

3.2.3 Periglis

Defences at Periglis provide protection for residential and non-residential properties, infrastructure and Big Pool. As such, there is a need to increase these defences which suffer from frequent erosion. The proposed development includes:

- Protection of Periglis beach through use of geobags, laid on a geomat and wrapped in geotextile, and covered with excavated cobble/sand material along most of the bay. Part of the existing material at the top of the beach (mix of sand and cobbles) will be excavated, from the seaward face, to allow the positioning of geobags in the existing footprint in the core of the dune/bank (3m landward). The geobags will be filled with dry sand of density around 1600kg/m³. If sand material is not available, the geobags may be filled with graded local or imported rocks using high performance nets.
- The geobags will be covered/protected by a mix of local sand and cobbles and topped up by locally excavated material where available. As such, the geobags will not be exposed directly to the waves and will not be directly visible. The fill will be protected with a matting to encourage establishment of vegetation and to provide additional erosion protection. The new reshaped seaward slope will follow the natural slope of the existing dune/bank.
- Crest elevations will be raised to approximately +7.5m, and crest widths increased to reach a minimum of 4m to prevent overtopping. In order to achieve this increase in elevation, the existing dune/bank will be topped up and covered using local materials with biodegradable matting to retain the material whilst the grasses and plants establish. The natural plant fibres will provide a system of erosion control of the material positioned over the top of the dune/bank, while local flora gets naturally established. A local source of recharge sediment will be used for the dunes/banks. If no local material is available, filling material will be imported, possibly from local quarries in Cornwall.
- The slipway already has a stop log fitting and stop logs and therefore no further action is required.
- This approach will enhance the dune/ bank stability and will provide a robust and permanent approach in terms of protection from coastal erosion.

4 WFD Screening Assessment

4.1 Overview

This screening assessment aims to screen in any works that require WFD Assessment and to identify which WFD water bodies are within and near to the proposed works.

The results of the screening assessment are presented below. The baseline status of the Quality Elements within the water bodies screened into the assessment are discussed in this chapter. As discussed in the Introduction and Methodology, if this section finds there is potential for the proposed works to cause deterioration in the status of a water body, or prevent it from achieving its status objectives, the relevant water body and its Quality Elements should be taken forward and considered further in the Scoping Assessment chapter.

4.2 WFD Water Bodies

The site of the proposed works is located within the South West TraC Management Catchment. The following water bodies are considered:

- Scilly Isles (Water Body ID - GB620807080000) - Coastal Water
- Isles of Scilly (Water Body ID - GB40802G081200) - Groundwater

4.2.1 Current Status

Details of the 2019 classification, status and objectives, as described by the EA Catchment Data Explorer, are summarised in Table 4-1.

Table 4-1: Water Body Screening Outcome

Water Body ID	Water Body Name	Hydromorphological Designation	Current Ecological Status/Potential	Overall Status Objective
GB620807080000	Scilly Isles	Not designated artificial or heavily modified	Good	Good (2019)
GB40802G081200	Isles of Scilly	N/A	N/A	Poor (2019)

4.3 Screening Outcome: Water Bodies

The following table indicates which water bodies have been screened in or out of the assessment and the reasons for this decision.

Table 4-2: Water Body Screening Outcome

Water Body	Reason	Screening Outcome
Scilly Isles	The proposed works are to take place adjacent to the Scilly Isles Coastal Water body, and some	Screened In

Water Body	Reason	Screening Outcome
	works may be expected to take place within the tidal frame.	
Isles of Scilly	This Groundwater body is located adjacent to and within the works boundary.	Screened In

4.4 Baseline Status of Screened in Water Bodies

For each water body screened into the assessment, details on the status of each element, as described by the Environment Agency’s Catchment Data Explorer are given below.

4.4.1 Scilly Isles (GB620807080000)

The three tables below describe the current status of the Ecological Elements according to the most recent WFD cycle.

Table 4-3 Biological Quality Elements Status

Biological Quality Element	Current Status (year)	Objective
Invertebrates	Good (2019)	Good
Angiosperms / Saltmarsh	Not assessed	Not assessed
Fish	Not assessed	Not assessed
Macroalgae	Not assessed	Not assessed
Phytoplankton	Not assessed	Not assessed

Table 4-4: Hydromorphological Quality Element Status

Hydromorphological Quality Element	Current Status (year)	Objective
Morphology	High (2019)	Not assessed

Table 4-5: Chemical Quality Elements Status

Chemical Quality Element	Current Status (year)	Objective
Priority hazardous substances		
Benzo(a)pyrene	Good (2019)	Good
Dioxins and dioxin-like compounds	Good (2019)	Good
Hexabromocyclododecane (HBCDD)	Good (2019)	Good
Hexachlorobenzene	Good (2019)	Good

Chemical Quality Element	Current Status (year)	Objective
Hexachlorobutadiene	Good (2019)	Good
Mercury and Its Compounds	Fail (2019)	Good
Perfluorooctane sulphonate (PFOS)	Good (2019)	Good
Polybrominated diphenyl ethers (PBDE)	Fail (2019)	Good
Priority Substances		
Fluoranthene	Good (2019)	Good

As a result of the classification of pollutants listed in Table 4-5, Priority hazardous substances is classified as a 'Fail'. No particular sectors or activities have been identified as Reasons for not achieving good (RNAG).

Water Quality also requires an assessment of historic occurrences and recording of harmful algae. However, this is not currently monitored within this water body and no further details are listed in the Environment Agency WFD Water Body Summary Table³.

4.4.2 Isles of Scilly (GB40802G081200)

Table 4-6 and Table 4-7 below describe the current status of the Quantitative and Chemical Elements of the groundwater body according to the most recent WFD cycle.

Table 4-6 Quantitative Quality Elements Status

Quantitative Quality Element	Current Status (year)	Objective
Quantitative Dependent Surface Water Body Status	Good (2019)	Good
Quantitative GWDTEs test	Good (2019)	Good
Quantitative Saline Intrusion	Poor (2019)	Good
Quantitative Water Balance	Good (2019)	Good

Table 4-7 Chemical Quality Elements Status

Chemical Quality Element	Current Status (year)	Objective
Chemical Dependent Surface Water Body Status	Good (2019)	Good

³ Water Framework Directive assessment guidance: Estuarine and Coastal Waters. Accessed on 3rd March 2023 via: <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>

Chemical Quality Element	Current Status (year)	Objective
Chemical Drinking Water Protected Area	Good (2019)	Good
Chemical GWDTEs test	Good (2019)	Good
Chemical Saline Intrusion	Poor (2019)	Good
General Chemical Test	Poor (2019)	Good

As a result of the classification of Quantitative and Chemical Quality elements in Table 4-6 and Table 4-7 the overall water body is classified as 'Poor'. No particular sectors or activities have been identified as Reasons for not achieving good (RNAG).

4.5 Protected Areas

The WFD specifies that areas requiring special protection under other retained EC Directive and waters used for the abstraction of drinking water are identified as protected areas. These areas have their own objectives and standards. Article 4 of the WFD requires Member States to achieve compliance with the standards and objectives set for each protected area.

4.5.1 Drinking Water Groundwater Safeguard Zones (SgZ)

Drinking Water Protected Areas (DrWPA) are designated under the Water Framework Directive, with the aim of avoiding deterioration in their quality in order to reduce the level of purification treatment required in the production of drinking water. SgZs are areas where actions will be targeted to address the causes of DrWPA objective failure/risk of failure.

There are no SgZs on St Agnes, with the nearest located 50 km east in Cornwall, on the British mainland. This is considered to be outside of the range whereby any associated impacts from the proposed works would affect groundwater sources.

4.6 Summary

To conclude the Screening Assessment, the following quality elements need to be considered further within the Scoping Assessment:

Scilly Isles (GB620807080000):

- Biological Elements;
- Hydromorphological Elements;
- Chemical Elements.

Isles of Scilly (GB40802G081200)

- Quantitative Quality Elements;
- Chemical Quality Elements.

5 WFD Scoping Assessment

5.1 Overview

This scoping assessment identifies whether the water body's receptors, identified during the screening assessment, are at risk from the proposed works discussed in Chapter 3. The proposed development works are being appraised in terms of their impact on WFD status and objectives. If any Quality Elements are found to be at risk of detrimental impact, further assessment and/ or mitigation may be required in the next chapter (as demonstrated by the final column).

Some WFD Quality Elements have not been formally assessed as part of the classification for this water body. However, due to the scale and nature of the proposed works, all WFD Quality Elements have been included in the previous screening and any identified impacts have been considered in relation to the ecological status of the water body and the status objectives.

Article 4.7 of the Directive defends deterioration in status or failure to meet WFD objectives resulting from new modifications or sustainable human development activities (if all conditions set out under this Article are met). If the assessment procedure predicts that an activity will cause deterioration in water body status or prevent a water body from meeting its ecological objectives, then an assessment is also required against the conditions listed in Article 4.7 of the WFD. If all the assessment conditions are met, there will not be a breach of the WFD and compliance will be attained.

5.2 Scoping Assessment

The Scoping Assessment considers the Scilly Isles Coastal Waterbody and the Isles of Scilly Groundwater body.

5.3 Scilly Isles Coastal Water Body (GB620807080000):

5.3.1 Biological Quality Assessment

Table 5-1 presents an assessment of the potential impact of the proposed works against the biological quality elements of the Scilly Isles Coastal Water Body.

Table 5-1 Potential impacts of proposed works relative to WFD Biological Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Invertebrates	Good	<p>Construction works have the potential to disrupt invertebrate communities and habitat via excavation of substrate material although this is expected to be temporary and limited to the construction phase of the scheme only.</p> <p>There is also the potential for indirect temporary impact to invertebrate populations via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for invertebrates.</p>	Yes (temporary, direct and indirect impacts)
Angiosperms	Not assessed	No saltmarsh has been identified within close proximity of the proposed works.	No
Fish	Not assessed	<p>There is also the potential for indirect temporary impact to fish populations via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for fish.</p>	Yes (temporary, indirect impacts)
Macroalgae	Not assessed	<p>Macroalgae will not be impacted directly, however, there is the potential to impact macroalgae on the adjacent rocky shore via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for macroalgae.</p>	Yes

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Phytoplankton	Not assessed	There is the potential accidental pollution spillages will have a negative impact upon ph. The permanent works are not expected to cause alteration to the WFD quality element status for macroalgae.	Yes

5.3.2 Hydromorphological Quality Assessment

Table 5-2 presents an assessment of the potential impact of the proposed works against the hydromorphological quality elements of the Scilly Isles Coastal Water Body.

Table 5-2 Potential impacts of proposed works relative to WFD Hydromorphological Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Morphology: Depth variation	Not assessed	Significant variation and/or changes to depth within the water body may impact on species present. e.g., alter light availability and restrict movement of non-sessile organisms. The location and scale of works relative to the waterbody are not considered to adversely impact on depth variation.	No
Morphology: Quantity, structure and substrate of the bed	Not assessed	Changes to structure and/or substrate within the waterbody may result from the possible transport of mobile sediment. The location and scale of works relative to the waterbody are not considered to adversely impact on quantity, structure and substrate of the bed.	No
Morphology: Structure of the intertidal zone	Not assessed	Changes to the structure of the intertidal zone may occur from the excavation and potential transport of mobile sediment and encroachment of defences into the intertidal zone. This could present an impact to wave and tidal hydrodynamics and impact on intertidal habitats and reliant species. The defences at Porth Killer will encroach into the tidal frame and hence	Yes (direct and indirect impacts)

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
		there will be loss of intertidal habitat. There is also the potential for future coastal squeeze leading to further loss of intertidal habitat.	
Tidal regime: Freshwater flow	Not assessed	Alteration in the freshwater regime within the waterbody may change salinity levels impacting on species present. There are no directly connected freshwater inputs to the coastal water body therefore there are no adverse impacts on freshwater flow.	No
Tidal regime: Wave exposure	Not assessed	Changes to tidal conditions and wave exposure within the waterbody may result in alteration to the extent of sediment accretion/erosion further altering morphology. The location and scale of works relative to the waterbody are not considered to adversely impact on tidal regime and associated hydromorphological elements.	No

5.3.3 Chemical Quality Assessment

Table 5-3 presents an assessment of the potential impact of the proposed works against the Chemical quality elements of the Scilly Isles Coastal Water Body.

Table 5-3 Potential impacts of proposed works relative to WFD Chemical Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Benzo(a)pyrene	Good	Construction works are not expected to result in changes to the chemical quality elements within the coastal water body. Where possible works are proposed to be carried out in the dry, or during low tide, therefore, reducing the likelihood of disturbing sediments which could	Yes (temporary, direct and indirect impacts)
Dioxins and dioxin-like compounds	Good		
Hexabromocyclododecane (HBCDD)	Good		
Hexachlorobenzene	Good		
Hexachlorobutadiene	Good		
Mercury and Its Compounds	Fail		

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Perfluorooctane sulphonate (PFOS)	Good	<p>change chemical levels within the waterbody. In addition, the scale of works is small in relation to the size of the water body and hence the magnitude of any sediment disturbances are not expected to be significant.</p> <p>However, accidental pollution events could lead to chemicals entering this water body which could lead to temporary changes to the chemical quality elements present.</p> <p>The permanent works are not expected to cause alteration to the chemical quality elements for this coastal water body.</p>	
Polybrominated diphenyl ethers (PBDE)	Fail		
Fluoranthene	Good		

5.4 Isles of Scilly Groundwater Body (GB40802G081200)

5.4.1 Quantitative Quality Assessment

Table 5-4 presents an assessment of the potential impact of the proposed works against the quantitative quality elements of the Isles of Scilly Groundwater Body.

Table 5-4 Potential impacts of proposed works relative to WFD Quantitative Quality Elements of the Isles of Scilly Water Body

WFD Quality Element	Current Status (2015)	Potential Impact	Further assessment and/or mitigation required?
Quantitative Dependent Surface Water Body Status	Good	<p>Contamination and reduced groundwater quality may result from spillages and/or leaks of hazardous substances (e.g., oil, petrol, diesel) from machinery operation or equipment refuelling.</p>	Yes (temporary, direct and indirect impacts)
Quantitative GWDTes test	Good		

WFD Quality Element	Current Status (2015)	Potential Impact	Further assessment and/or mitigation required?
Quantitative Saline Intrusion	Poor	Due to the highly permeable geology in the region, risk of impacts to groundwater from pollution incidents is enhanced.	
Quantitative Water Balance	Good		

5.4.2 Chemical Quality Assessment

Table 5-5 presents an assessment of the potential impact of the proposed works against the chemical quality elements of the Isles of Scilly Groundwater Body.

Table 5-5 Potential impacts of proposed works relative to WFD Chemical Quality Elements of the Isles of Scilly Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Chemical Dependent Surface Water Body Status	Good	Contamination and reduced groundwater quality may result from spillages and/or leaks of hazardous substances (e.g., oil, petrol, diesel) from machinery operation or equipment refuelling. Due to the highly permeable geology in the region, risk of impacts to groundwater from pollution incidents is enhanced.	Yes (temporary, direct and indirect impacts)
Chemical Drinking Water Protected Area	Good		
Chemical GWDTes test	Good		
Chemical Saline Intrusion	Poor		
General Chemical Test	Poor		

5.5 Impacts of the Proposed Works on Protected Sites

5.5.1 Designated Nature Conservation Sites

The designated sites outlined in Table 5-6 are located adjacent to and within the scheme red line boundary.

Table 5-6 Designated Sites located adjacent to and within the scheme red line boundary

Designation	Primary reason(s) for designation
Isles of Scilly Complex Special Area of Conservation (SAC)	Annex I habitats: <ul style="list-style-type: none"> • Sandbanks which are slightly covered by sea water all the time • Mudflats and sandflats not covered by seawater at low tide • Reefs Annex II species: <ul style="list-style-type: none"> • Shore dock <i>Rumex rupestris</i>
Isles of Scilly Special Protection Area (SPA);	Annex I species: <ul style="list-style-type: none"> • Storm Petrel <i>Hydrobates pelagicus</i> • Lesser Black-backed Gull <i>Larus fuscus</i> Breeding bird populations: <ul style="list-style-type: none"> • Great Black-backed Gull <i>Larus marinus</i> • Shag <i>Phalacrocorax aristotelis</i> • Lesser Black-backed Gull • Storm Petrel
Isles of Scilly Ramsar	Qualifying species: <ul style="list-style-type: none"> • European Storm Petrel • Lesser black-backed gull

Since Isles of Scilly SPA and Ramsar sites are designated primarily for their bird populations, these sites will not be considered further as part of this WFD Assessment. A Habitats Regulations Assessment (HRA) has been completed which details the impacts of the proposed scheme on these sites.

Impacts to the Isles of Scilly Complex SAC may arise from the construction phase of the scheme. As such, impacts to this designated site are scoped into the assessment.

WFD higher and lower sensitivity habitats are present in adjacent to works areas. These habitats include:

- Subtidal Seagrass Beds;
- Subtidal Rocky Reef;
- Rockyshore (intertidal rock);
- Subtidal Soft Sediment;
- Intertidal Soft Sediment;
- Gravel & Cobbles.

All of these habitats form part of the Isles of Scilly SAC designation and impacts to each habitat has been assessed as part of the HRA process and summarised in this report.

6 WFD Impact Assessment

6.1 Overview

The Scoping Assessment presented in Chapter 5 identified some receptors may potentially be at risk from the proposed works. An Impact Assessment is therefore required to describe how these identified impacts will be mitigated.

The Impact Assessment needs to consider if there is a pathway linking the pressure to the receptor. If there is no pathway there can be no impact on the receptor and there is no need for any further assessment of that receptor to be carried out. If there is a potential pathway the assessment should consider if the activity, and the pressure it creates, may cause deterioration of the receptor.

In order to effectively assess the potential impacts of the proposed works and decide upon suitable mitigation measures, a good understanding of the proposed scheme and design is required. Should any revisions be made to the proposed works that could impact any of the WFD Quality Elements, this section should be revised.

6.2 Impact Assessment

Table 6-1 and Table 6-2 discuss each of the receptors identified as being potentially at risk in the scoping assessment. Mitigation measures are recommended to mitigate the effects of the proposed works.

Table 6-1: Impacts and Mitigation Measures – Scilly Isles Coastal Water Body (GB620807080000)

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Biological		
Invertebrates	Indirect and direct	<p>Temporary impact: Short-term localised loss of intertidal sediment habitat for invertebrates. However, these impacts will be short-lived and invertebrates will be able to colonise naturally following the completion of the works.</p> <p>Temporary impact: The temporary works may impact invertebrates through pollution events.</p> <p>Mitigation: Pollution prevention measures will be required to be implemented via a Construction Environmental Management Plan (CEMP) throughout construction in order to prevent a pollution event (e.g. sediment release, fuel leaks etc.).</p> <p>Temporary Impact: The invertebrate communities in the intertidal sediments may be disturbed during excavation works within the channel. The temporary localised impact will not impact upon the overall WFD status. Therefore, mitigation is not proposed.</p>
Fish	Indirect	<p>Temporary impact: The temporary works may impact fish, macroalgae and phytoplankton through pollution events.</p> <p>Mitigation: Pollution prevention measures will be required to be implemented via a Construction Environmental Management Plan (CEMP) throughout construction in order to prevent a pollution event (e.g. sediment release, fuel leaks etc.).</p>
Macroalgae		
Phytoplankton		
Hydromorphological		
Morphology: Structure of the intertidal zone	Direct and Indirect	<p>Temporary Impact: Construction works have the potential to disturb substrate material through excavation works. This impact is expected to be temporary and limited to the construction phase of the scheme only. Defences at Porth Killer will encroach into the tidal frame, leading to loss of intertidal habitat. Coastal squeeze resulting from the construction of hard defences may lead to an increased loss of intertidal habitat over time.</p> <p>However, impacts are likely to be small in magnitude in relation to the size of the water body.</p> <p>Mitigation: Actions to limit sediment</p>

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
		disturbance will be outlined in a Sediment Management Plan (SMP) which must be adhered to during construction.
Chemical		
Priority hazardous substances / priority substances	Indirect	<p>Temporary Impact: Construction work has the potential to mobilise disturbed sediments that may harbour priority hazardous substances adsorbed to the sediment surfaces. The resuspension of potential contaminated sediments could act as an active pathway for the dispersion of priority hazardous substances within the water body.</p> <p>Mitigation: Standard industry practices for the management of sediment will be employed to reduce mobilisation of potentially contaminated sediments arising from the construction phase of the works. This will be addressed by the implementation of the SMP and CEMP.</p>

Table 6-2: Impacts and Mitigation Measures - Isles of Scilly Groundwater Body (GB40802G081200)

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Quantitative and Chemical Status elements	Direct	<p>Temporary impact: Any impacts to the groundwater body arising from construction are expected to be negligible as there will be no intrusive works carried out. However, there is a risk of accidental pollution events that could lead to chemicals entering the water body leading to temporary changes to the quantitative and chemical quality elements.</p> <p>Mitigation: Best practice pollution prevention measures should be outlined in the CEMP and adhered to during the construction phase.</p>

6.2.1 Impacts to Designated Sites

A Habitats Regulations Assessment (HRA) Report has been produced which details potential impacts of the scheme on the designated nature conservation sites outlined in section 5.5.1.

The HRA outlines that impacts to the marine environment may arise due to disturbance and accidental spillages during construction. However, it concludes that if strict pollution and disturbance prevention measures are implemented, adverse impacts on the integrity of the sites can be ruled out.

6.3 Water Body Mitigation Measures

The Environment Agency’s Catchment Planning System outlines mitigation measures contributing to better ecological potential for relevant water bodies. Correspondence with the Environment Agency’s Catchment Coordinator (Cornwall) identified that neither water body screened into this assessment is designated as either artificial or heavily modified, subsequently there are no mitigation measures presented.

6.4 WFD Assessment Objectives

Following consideration of the potential impacts and recommended mitigation measures, Table 6-3 assesses whether the proposed works comply with the overarching objectives of the WFD.

Table 6-3: Assessment of the Proposed Works against the WFD Objectives

WFD Assessment Objective	Assessment of the Proposed Works
Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the water body	By adopting the mitigation measures highlighted herein the proposed works will not cause deterioration of the status of the ecological elements in the waterbodies assessed.
Objective 2: The proposed works do not compromise the ability of the water body to achieve its WFD status objectives	The scale of the proposed works relative to the size of the water body will not compromise the ability of the water bodies assessed to achieve their WFD status objectives.
Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD	There are no other bodies of water further to those assessed herein, therefore the works will not compromise achievement of the WFD objectives in other waterbodies .
Objective 4: The proposed works contribute to the delivery of the WFD objectives	By adopting the mitigation measures highlighted herein the proposed works are not expected to impact on the delivery of the WFD objectives.

7 Discussion and Conclusions

7.1 Assessment Summary

The proposed works on the island of St Agnes have been assessed for compliance with the WFD Objectives with regards to the Scilly Isles Coastal Water body (Water Body ID - GB620807080000) and Isles of Scilly Ground Water Body (GB40802G081200). This assessment has been undertaken with the current proposed works design drawings. Should the design or scope of the work alter significantly, this report would need to be revised to ensure the mitigation measures and recommendations outlined in this report have been considered and to determine whether the final scheme is WFD-compliant.

7.1.1 Biological Assessment

The proposed works are not anticipated to pose a significant threat to the biological quality elements of the waterbodies, providing recommended mitigation measures are followed.

The works have the potential to cause temporary disturbance to invertebrate habitats within the footprint of the works due to sediment disturbance and temporary disturbance to invertebrates, fish, macroalgae and phytoplankton through accidental pollution incidents. Implementing strict pollution prevention measures will reduce the potential for pollution events. Works should be carried out at low tide, and best practice measures should be implemented to limit the risk of sediment disturbance.

Maintaining the existing alignment of the coastline through the provision of new hard defences has the potential to cause coastal squeeze. By renewing the defence in this area, it can be considered that a 'hold the line' approach is being taken. As sea levels rise intertidal habitats 'migrate' landwards, there is the potential that this will lead to intertidal habitats being 'squeezed' against the hard defence and eventually lost. An assessment of coastal squeeze has been undertaken as part of the Environmental Statement and HRAs for the schemes. This found that although there is likely to be a small scale negative impact on intertidal habitats at the local scale it is not considered that there will be a significant impact upon the status of the waterbody.

7.1.2 Hydromorphological Assessment

An assessment has identified that the proposed works are not likely to present a significant risk to hydromorphology of the Scilly Isles Coastal water body.

However, all construction work will be undertaken in accordance with best practice, which will reduce the likelihood of sediment mobilisation and subsequent impacts on WFD hydromorphological supporting elements. Furthermore, the scale of the proposed works relative to the size of the water body mean that any potential impacts are only likely to be localised and are not expected to adversely affect the wider water body.

In the event that excavated sediments are mobilised, the impact of increased turbidity within the water body and adjacent sensitive WFD habitats is considered to be temporary and is assessed as being insignificant. Operation of the completed works is not likely to significantly affect or alter sedimentary processes and/or turbidity of the water column. As such, no significant impact on water body status is expected during either the construction or operational phases of the proposed work.

7.1.3 Chemical Assessment

Construction work has the potential to mobilise disturbed sediments that may harbour priority hazardous substances adsorbed to the sediment surfaces. The resuspension of potential contaminated sediments could act as an active pathway for the dispersion of priority hazardous substances within the water body. Pollution incidents may lead to a deterioration in chemical quality of both the Scilly Isles coastal water body and Isles of Scilly ground water body.

Industry best practice guidance should be outlined in a Sediment Management Plan (SMP) and Construction Environmental Management Plan (CEMP) and these documents should be adhered to throughout the construction phase. These documents should include measures to limit disturbance of sediment and risk of pollution incidents.

7.2 Scheme Recommendations/ Key Considerations

The impact assessment determines whether the proposed works have the potential to significantly impact any of the quality elements screened into the assessment. Any mitigation measures that need to be considered to make the works compliant with the WFD are presented in Table 6-1 and Table 6-2; however, the critical ones are listed below:

- Sediment Management Plan (SMP)
- Construction Environmental Management Plan (CEMP), which should include measures such as:
 - Pollution prevention measures (daily machinery checks)
 - On site spill kit availability

7.3 Conclusions

The proposed works are expected to be compliant with WFD objectives if the appropriate mitigation measures described in relation to each potential impact are incorporated into the temporary works design. The proposed works are not expected to have a significant impact on any WFD receptors and no significant short-term, or long-term impacts are predicted, during either the construction or operational phases of the works.

There is the potential for the mobilisation of sediment and pollution incidents during construction operations; effects are however expected to be localised and temporary in nature and are not considered to be significant.

Collectively the proposed works are not expected to contribute towards the failure of the water body to achieve Good Ecological Status or Potential; or to contribute towards a deterioration in the Ecological Status or Potential of a water body.

Furthermore, the implementation of the defence structures at Porth Killier, Porth Coose and Periglis are intended to reduce localised coastal flooding during storm events. This is expected to have a positive impact on the Isles of Scilly Groundwater body by reducing wave overtopping and future saline intrusion to freshwater sources, e.g., Big Pool. This may result in improvements to the Quantitative and Chemical Status elements of the water body.

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Appendix 5.3c: St Martin's WFD Assessment

Water Framework Directive Assessment St Martin's

Final Report

April 2023

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Purpose

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Abbreviations

CEMP.....	Construction Environmental Management Plan
DrWPA.....	Drinking Water Protected Area
EA.....	Environment Agency
HRA	Habitats Regulations Assessment
RBD.....	River Basin District
RBMP	River Basin Management Plan
RNAG	Reasons for Not Achieving Good
SAC	Special Area of Conservation
SgZ.....	Safeguard Zones
SMP	Sediment Management Plan
SSSI	Site of Special Scientific Interest
WFD.....	Water Framework Directive

1 Introduction

1.1 WFD Overview

The Water Framework Directive (WFD) came into force in 2000 and is the most substantial piece of EU water legislation to date. The Directive imposes legal requirements to protect and improve the water environment. All activities in the water environment need to take the Directive into account. The EU Water Framework Directive was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. The 2003 regulations were consolidated and replaced with the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. The Floods and Water (Amendment etc.) (EU Exit) Regulations 2019 ensure that floods and water legislation continues to be operable in the United Kingdom following withdrawal from the EU in January 2021. The instrument addresses deficiencies in retained EU law arising from the UK's withdrawal from the EU. The purpose of the instrument is to preserve and protect the existing policy regime rather than to introduce new policy. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, as amended by the Floods and Water (Amendment etc.) (EU exit) Regulations 2019, are hereafter referred to as the WFD Regulations in this report.

1.1.1 Scope of the WFD Assessment

The WFD Regulations require that Environmental Objectives be set for all surface and ground waters in England and Wales to enable them to achieve Good Status (or Good Ecological Potential for Heavily Modified and Artificial Water Bodies) by a defined date. These Environmental Objectives are listed below:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters.
- Aim to achieve at least good status/potential for all water bodies by 2021. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status/potential by 2027.
- Meet the requirements of Water Framework Directive Protected Areas.
- Promote sustainable use of water as a natural resource.
- Conserve habitats and species that depend directly on water.
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment.
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants.
- Contribute to mitigating the effects of floods and droughts.

1.1.2 Preventing Deterioration in Status

Any activity which has the potential to have an impact on the ecology of a water body will need consideration in terms of whether it could cause deterioration in its Ecological Status or Potential¹.

For each water body, three different status objectives are identified within the RBMP. These are the overall status objective, the ecological status or potential objective and the chemical status objective. A default objective for all water bodies is to prevent the deterioration in the Ecological Status (or Ecological Potential for Heavily Modified and Artificial Water Bodies) of the water body. Note, the Ecological Status applies only to surface water bodies, and not ground water bodies. A separate assessment may be required to assess the impacts on the chemical and quantitative status of a ground water body, if the proposed activity is likely to cause impact.

The Ecological Status of a water body is determined through analysis of its constituent Biological Quality Elements. These elements are in turn supported by a series of Physico-Chemical and Hydromorphological Quality Elements. These Quality Elements are taken from Annex V of the WFD Regulations and are listed below. The overall Ecological Status is determined by the lowest element status.

The Biological Quality Elements assessed in the WFD include:

- Invertebrates

The WFD defines the flow and physical characteristics of a water body as its 'hydromorphology'. Any proposed works can impact upon a water body and the natural processes that occur within it, including:

- Flow patterns (tidal, freshwater inputs, wave exposure)
- Depth variation
- Sediment availability/ transport
- Ecology and biology (i.e. habitats which support plants and animals)
- The WFD considers the chemistry of a water body through general water quality (physico-chemical measurements), harmful algae and chemical pollutants. All three environmental components; morphology, hydrology and chemistry, support the Biology of a water body.

Any activity that has the potential to have an impact upon any of the Quality Elements will need consideration in terms of whether it could cause a deterioration in the status of a water body. The activity will also need to be considered in terms of whether it will compromise the ability of the water body to reach Good Ecological Status or Good Ecological Potential by the date specified in the Catchment Data Explorer.

Any adverse impacts can cause a water body's ecology to deteriorate and prevent environmental improvements from being undertaken. Nevertheless, works can also be beneficial if they can be designed to help achieve environmental improvements included in the RBMP, thus enhancing the water environment for plants and animals.

¹ Environment Agency (2010) Assessing new modifications for compliance with WFD: detailed supplementary guidance: 488_10_SD01

1.1.3 Artificial or Heavily Modified Water Bodies

Whilst good ecological status is defined as a slight variation from undisturbed natural conditions in natural water bodies, artificial and heavily modified water bodies are unable to achieve natural conditions. Instead, artificial and heavily modified water bodies have a target to achieve Good Ecological Potential, which recognises their important uses, whilst making sure ecology is protected as far as possible. Ecological potential is also measured on the scale high, good, moderate, poor and bad. The chemical status of these water bodies is measured in the same way as for natural water bodies.

Specific mitigation measures have been identified for each Artificial and Heavily Modified Water body and are listed in the RBMP. These mitigation measures are necessary to reduce the existing hydromorphological impacts on the water body and all measures need to be in place in order for the water body to achieve 'Good' Ecological Status or Potential.

1.2 Purpose of this WFD Assessment

JBA Consulting was commissioned by the Council of the Isles of Scilly to undertake a WFD assessment for proposed coastal flood defence works to be undertaken at Lower Town Beach on the island of St Martin's.

This WFD assessment aims to determine the effects of the proposed works on ecological, hydromorphological and chemical quality and identify any potential impacts that could cause deterioration in the current status of the water body or could hinder the water body from meeting its WFD objectives in the future.

The works sites are located adjacent to the Scilly Isles water body (Water Body ID GB620807080000) and falls within the Scilly Isles Coastal Operational Catchment. The Environmental Objectives, together with the specific actions (mitigation measures) necessary to enable the water body to meet these objectives, are set out in the South West river basin district river basin management plan (RBMP) and Catchment Data Explorer (EA, 2023)².

² Environment Agency Catchment Data Explorer. Accessed on 13th February 2023 via <https://environment.data.gov.uk/catchment-planning/>

2 Assessment Methodology

2.1 Overview

The following chart summarises the WFD Assessment process

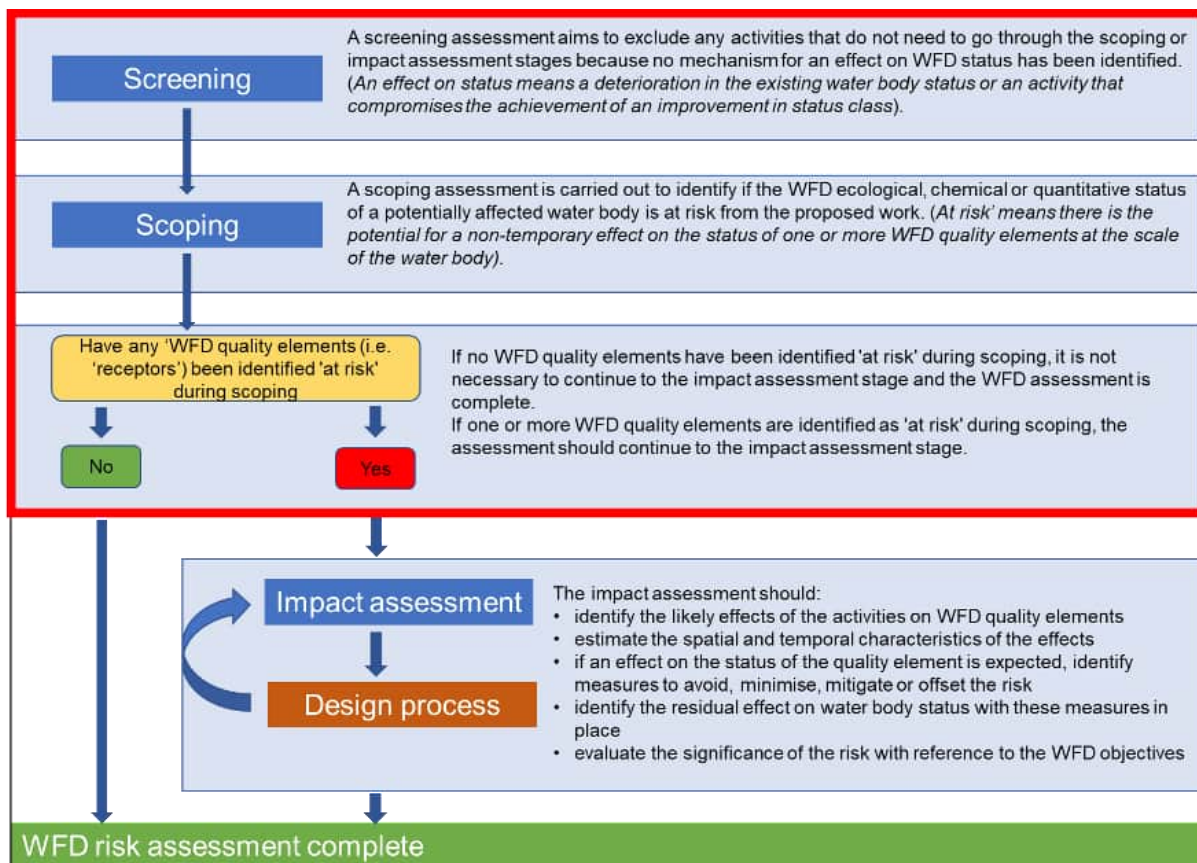


Figure 2-1: WFD assessment process flow chart

2.2 Screening Assessment

The Screening Assessment aims to exclude any activities that do not need to go through the scoping or impact assessment stages.

The South West RBMP and the Environment Agency's web-based Catchment Data Explorer website were used to determine which water bodies could be potentially affected by the proposed works. The names, ID numbers, designation, status classification and objectives for all relevant water bodies were obtained and downloaded from the Environment Agency's Catchment Data Explorer website.

The initial stage of the assessment screens the proposed works against the Ecological and Chemical Status objectives for the water bodies potentially affected by the works, together with their Quality Elements. The aim of this process is to determine whether the works could have an impact upon any of these criteria. Those criteria for which no potential adverse effects are identified are not considered further in the assessment. Any potential adverse effects are screened into the assessment and are carried forward to a detailed assessment.

2.3 Scoping Assessment

A detailed assessment is then undertaken to determine the effects that the proposed works could have upon those Quality Elements screened into the assessment. Any impacts identified are then considered in relation to the Ecological Status of the water body, which comprises biology, hydrology, hydromorphology and water chemistry, and the water body objectives.

The following assessment objectives are then used to determine whether the proposed works comply with the overarching objectives of the WFD. These objectives were therefore derived from the Environmental Objectives of the Directive (as listed in section 1.1.2).

- Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the water body.
- Objective 2: The proposed works do not compromise the ability of the water body to achieve its WFD status objectives.
- Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD.
- Objective 4: The proposed works contribute to the delivery of the WFD objectives.

In order to establish whether the proposed works comply with the WFD it is necessary to ascertain whether the works have the potential to result in:

- Failure of a water body to achieve Good Ecological Status or Potential; or
- Failure to prevent a deterioration in the Ecological Status or Potential of a water body

If the answer to these questions is 'no' the proposed works can be considered WFD compliant. If either of these failures is identified and if any receptors are identified as 'at risk', further assessment may be required to identify if the proposed works meet all of the conditions set out by the WFD Legislation.

2.4 Impact Assessment

The third stage of the WFD Assessment, if determined as necessary from the Screening and Scoping Assessments, is to undertake an Impact Assessment to consider the impacts of the proposed works in more detail and recommend necessary mitigation measures. An impact assessment must be carried out for each receptor identified during scoping as being at risk from your activity.

The Impact Assessment describes how any identified impacts from the proposed works will be mitigated, to either avoid or minimise the impacts. The assessment shows how any impact on WFD receptor caused by the proposed activity fits with the objectives of any affected WFD water bodies. After the works have been amended to try and avoid, minimise, mitigate or compensate for the risks to WFD receptors the following questions will need to be answered:

- Could the activity still cause a water body to deteriorate from one WFD status class to another or cause significant localised impacts that could contribute to this happening?
- Could the activity prevent or undermine action to get water bodies to good status?

When these questions are answered, the following should be borne in mind:

- A water body deteriorates in status when one WFD receptor (an "element") is affected such that it drops from one WFD status class to another.
- A significant localised impact on an element is one that is either long-lasting; causes severe harm; or affects a wide area within a water body. These are likely to contribute to a water body dropping from one status to another and highly likely to prevent action to get water bodies to good status.
- Elements at high status are very sensitive. The assessment will need to demonstrate that there will be a negligible impact on those aspects of the water environment.
- Elements at bad status must not be made worse.

If it cannot be demonstrated with a high level of confidence that the activity supports RBMP objectives, then in order for the Environment Agency to permit the activity it must be shown that the activity meets the criteria set out in Article 4(7) of the WFD. Article 4(7) sets out stringent environmental and socio-economic tests to assess if a scheme meets strict environmental and sustainability criteria.

3 Project Description

3.1 Project Overview

The proposals consist of minor coastal works at Lower Town Beach on the island of St Martin’s, Isles of Scilly.

These works are to be completed in support of preventing erosion caused by human activities, which may lead to erosion and weakening of dune defences. The location of the works are presented in Figure 3-1.

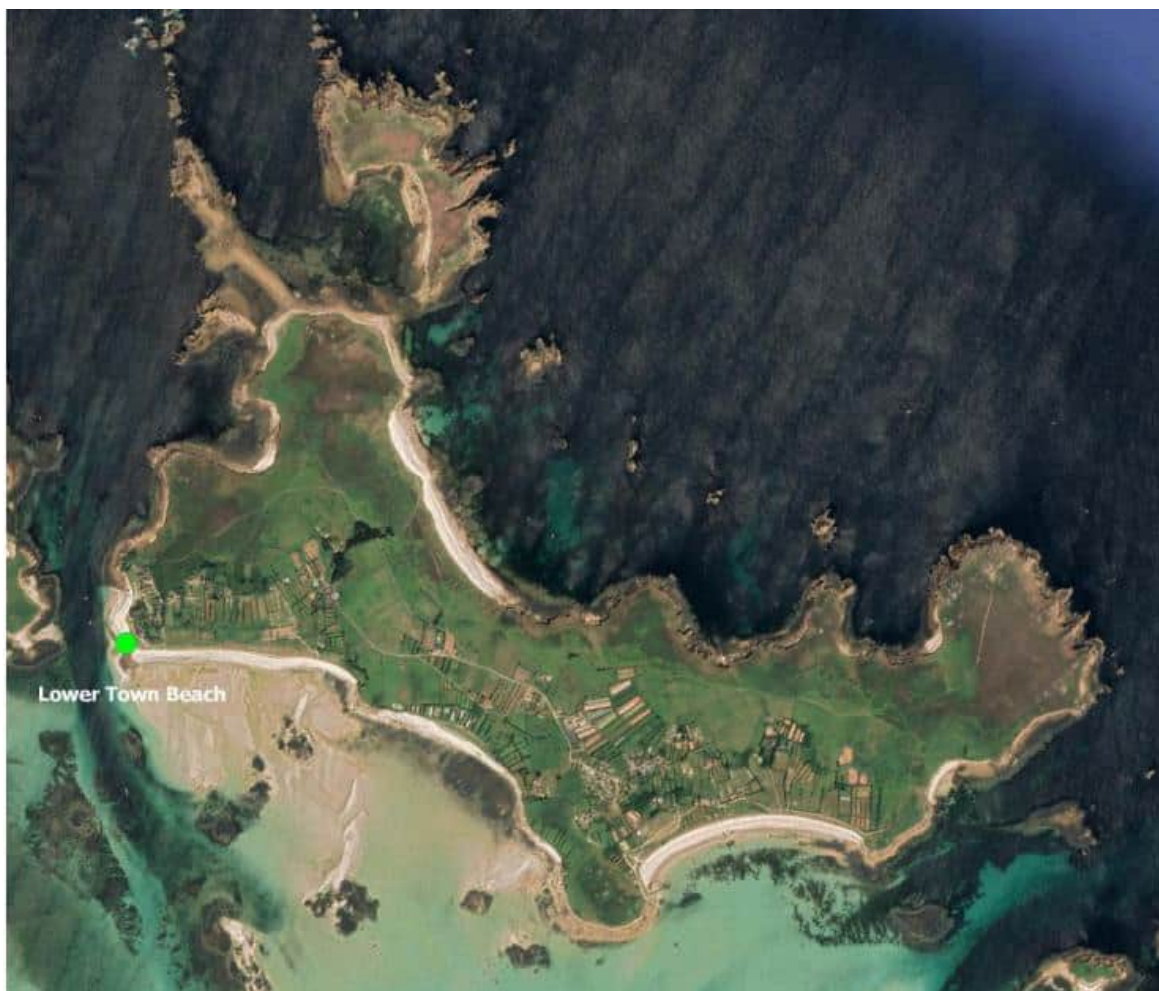


Figure 3-1: Location of works – St Martin’s

3.2 Proposed Works

3.2.1 Lower Town Beach

The proposed works include:

- Fencing off the most sensitive area of dunes at the rear of the beach, including the area to the east of the access track where cabling has become exposed to help recovery by limiting access to this area and encouraging accretion of sand at the foot of the dunes.

- Additional erosion protection for the beach access at the west of the beach. This is proposed to be an open grid product appropriate for vehicle loading that will fill with sand to match the existing appearance whilst providing erosion protection to this area.
- General pedestrian footpath management to limit and control access to the beach through provision of signage and short sections of fencing to allow access locations through the dunes along the beach time to recover, whilst still providing different access points through the dunes, without the need for any restoration or other intervention.
- Provision of removable slipway that can be lain as needed and removed and stored during winter to enhance beach access. This will be an aluminium mat that can be rolled out and back up as required with a maximum axle load of 13 tonnes to meet the requirements of the tractors and boat trailers typically used.

The works proposed above are to be completed in an area above the Mean High Water Spring level. Subsequently, interaction between the implemented measures and the associated water bodies during construction and/or operational phases are expected to be negligible.

4 WFD Screening Assessment

4.1 Overview

This screening assessment aims to screen in any works that require WFD Assessment and to identify which WFD water bodies are within and near to the proposed works.

The results of the screening assessment are presented below. The baseline status of the Quality Elements within the water bodies screened into the assessment are discussed in this chapter. As discussed in the Introduction and Methodology, if this section finds there is potential for the proposed works to cause deterioration in the status of a water body, or prevent it from achieving its status objectives, the relevant water body and its Quality Elements should be taken forward and considered further in the Scoping Assessment chapter.

4.2 WFD Water Bodies

The site of the proposed works is located within the South West TraC Management Catchment. The following water bodies are considered:

- Scilly Isles (Water Body ID - GB620807080000) - Coastal Water
- Isles of Scilly (Water Body ID - GB40802G081200) - Groundwater

4.2.1 Current Status

Details of the 2019 classification, status and objectives, as described by the EA Catchment Data Explorer, are summarised in Table 4-1.

Table 4-1: Water Body Screening Outcome

Water Body ID	Water Body Name	Hydromorphological Designation	Current Ecological Status/Potential	Overall Status Objective
GB620807080000	Scilly Isles	Not designated artificial or heavily modified	Good	Good (2019)
GB40802G081200	Isles of Scilly	N/A	N/A	Poor (2019)

4.3 Screening Outcome: Water Bodies

The following table indicates which water bodies have been screened in or out of the assessment and the reasons for this decision.

Table 4-2: Water Body Screening Outcome

Water Body	Reason	Screening Outcome
Scilly Isles	The proposed works are to take place adjacent to the Scilly Isles Coastal Water body, and some works may be expected to take place within the tidal frame.	Screened In
Isles of Scilly	This Groundwater body is located adjacent to and within the works boundary.	Screened In

4.4 Baseline Status of Screened in Water Bodies

For each water body screened into the assessment, details on the status of each element, as described by the Environment Agency’s Catchment Data Explorer are given below.

4.4.1 Scilly Isles (GB620807080000)

The three tables below describe the current status of the Ecological Elements according to the most recent WFD cycle.

Table 4-3 Biological Quality Elements Status

Biological Quality Element	Current Status (year)	Objective
Invertebrates	Good (2019)	Good
Angiosperms / Saltmarsh	Not assessed	Not assessed
Fish	Not assessed	Not assessed
Macroalgae	Not assessed	Not assessed
Phytoplankton	Not assessed	Not assessed

Table 4-4: Hydromorphological Quality Element Status

Hydromorphological Quality Element	Current Status (year)	Objective
Morphology	High (2019)	Not assessed

Table 4-5: Chemical Quality Elements Status

Chemical Quality Element	Current Status (year)	Objective
Priority hazardous substances		
Benzo(a)pyrene	Good (2019)	Good
Dioxins and dioxin-like compounds	Good (2019)	Good
Hexabromocyclododecane (HBCDD)	Good (2019)	Good
Hexachlorobenzene	Good (2019)	Good
Hexachlorobutadiene	Good (2019)	Good
Mercury and Its Compounds	Fail (2019)	Good
Perfluorooctane sulphonate (PFOS)	Good (2019)	Good
Polybrominated diphenyl ethers (PBDE)	Fail (2019)	Good
Priority Substances		
Fluoranthene	Good (2019)	Good

As a result of the classification of pollutants listed in Table 4-5, Priority hazardous substances is classified as a 'Fail'. No particular sectors or activities have been identified as Reasons for not achieving good (RNAG).

Water Quality also requires an assessment of historic occurrences and recording of harmful algae. However, this is not currently monitored within this water body and no

further details are listed in the Environment Agency WFD Water Body Summary Table³.

4.4.2 Isles of Scilly (GB40802G081200)

Table 4-6 and Table 4-7 below describe the current status of the Quantitative and Chemical Elements of the groundwater body according to the most recent WFD cycle.

Table 4-6 Quantitative Quality Elements Status

Quantitative Quality Element	Current Status (year)	Objective
Quantitative Dependent Surface Water Body Status	Good (2019)	Good
Quantitative GWDTEs test	Good (2019)	Good
Quantitative Saline Intrusion	Poor (2019)	Good
Quantitative Water Balance	Good (2019)	Good

Table 4-7 Chemical Quality Elements Status

Chemical Quality Element	Current Status (year)	Objective
Chemical Dependent Surface Water Body Status	Good (2019)	Good
Chemical Drinking Water Protected Area	Good (2019)	Good
Chemical GWDTEs test	Good (2019)	Good
Chemical Saline Intrusion	Poor (2019)	Good
General Chemical Test	Poor (2019)	Good

As a result of the classification of Quantitative and Chemical Quality elements in Table 4-6 and Table 4-7 the overall water body is classified as 'Poor'. No particular sectors or activities have been identified as Reasons for not achieving good (RNAG).

4.5 Protected Areas

The WFD specifies that areas requiring special protection under other retained EC Directive and waters used for the abstraction of drinking water are identified as protected areas. These areas have their own objectives and standards. Article 4 of the WFD requires Member States to achieve compliance with the standards and objectives set for each protected area.

³ Water Framework Directive assessment guidance: Estuarine and Coastal Waters. Accessed on 3rd March 2023 via: <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>

4.5.1 Drinking Water Groundwater Safeguard Zones (SgZ)

Drinking Water Protected Areas (DrWPA) are designated under the Water Framework Directive, with the aim of avoiding deterioration in their quality in order to reduce the level of purification treatment required in the production of drinking water. SgZs are areas where actions will be targeted to address the causes of DrWPA objective failure/risk of failure.

There are no SgZs on St Martin's, with the nearest located 50 km east in Cornwall, on the British mainland. This is considered to be outside of the range whereby any associated impacts from the proposed works would affect groundwater sources.

4.6 Summary

To conclude the Screening Assessment, the following quality elements need to be considered further within the Scoping Assessment:

Scilly Isles (GB620807080000):

- Biological Elements;
- Hydromorphological Elements;
- Chemical Elements.

Isles of Scilly (GB40802G081200)

- Quantitative Quality Elements;
- Chemical Quality Elements.

5 WFD Scoping Assessment

5.1 Overview

This scoping assessment identifies whether the water body's receptors, identified during the screening assessment, are at risk from the proposed works discussed in Chapter 3. The proposed development works are being appraised in terms of their impact on WFD status and objectives. If any Quality Elements are found to be at risk of detrimental impact, further assessment and/ or mitigation may be required in the next chapter (as demonstrated by the final column).

Some WFD Quality Elements have not been formally assessed as part of the classification for this water body. However, due to the scale and nature of the proposed works, all WFD Quality Elements have been included in the previous screening and any identified impacts have been considered in relation to the ecological status of the water body and the status objectives.

Article 4.7 of the Directive defends deterioration in status or failure to meet WFD objectives resulting from new modifications or sustainable human development activities (if all conditions set out under this Article are met). If the assessment procedure predicts that an activity will cause deterioration in water body status or prevent a water body from meeting its ecological objectives, then an assessment is also required against the conditions listed in Article 4.7 of the WFD. If all the assessment conditions are met, there will not be a breach of the WFD and compliance will be attained.

5.2 Scoping Assessment

The Scoping Assessment considers the Scilly Isles Coastal Waterbody and the Isles of Scilly Groundwater body.

5.3 Scilly Isles Coastal Water Body (GB620807080000):

5.3.1 Biological Quality Assessment

Table 5-1 presents an assessment of the potential impact of the proposed works against the biological quality elements of the Scilly Isles Coastal Water Body.

Table 5-1 Potential impacts of proposed works relative to WFD Biological Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Invertebrates	Good	<p>Construction works have the potential to disrupt invertebrate assemblages when the barge is landed in the intertidal zone. Although this is expected to be temporary and limited to the construction phase of the scheme only.</p> <p>There is also the potential for indirect temporary impact to invertebrate populations via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for invertebrates.</p>	Yes (temporary, direct and indirect impacts)
Angiosperms	Not assessed	No saltmarsh has been identified within close proximity of the proposed works.	No
Fish	Not assessed	<p>There is also the potential for indirect temporary impact to fish populations via accidental pollution spillages.</p> <p>The permanent works are not expected to cause alteration to the WFD quality element status for fish.</p>	Yes (temporary, indirect impacts)

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Macroalgae	Not assessed	Macroalgae will not be impacted directly, however, there is the potential to impact macroalgae on the adjacent rocky shore via accidental pollution spillages. The permanent works are not expected to cause alteration to the WFD quality element status for macroalgae.	Yes
Phytoplankton	Not assessed	There is the potential accidental pollution spillages will have a negative impact upon ph. The permanent works are not expected to cause alteration to the WFD quality element status for macroalgae.	Yes

5.3.2 Hydromorphological Quality Assessment

Table 5-2 presents an assessment of the potential impact of the proposed works against the hydromorphological quality elements of the Scilly Isles Coastal Water Body.

Table 5-2 Potential impacts of proposed works relative to WFD Hydromorphological Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Morphology: Depth variation	Not assessed	Significant variation and/or changes to depth within the water body may impact on species present. e.g., alter light availability and restrict movement of non-sessile organisms. The location and scale of works relative to the water body are not considered to adversely impact on depth variation.	No

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Morphology: Quantity, structure and substrate of the bed	Not assessed	Changes to structure and/or substrate within the water body may result from the possible transport of mobile sediment. The location and scale of works relative to the water body are not considered to adversely impact on quantity, structure and substrate of the bed.	No
Morphology: Structure of the intertidal zone	Not assessed	Changes to the structure of the intertidal zone may occur from the excavation and potential transport of mobile sediment and encroachment of defences into the intertidal zone. The location and scale of works relative to the water body are not considered to adversely impact on the structure of the intertidal zone.	Yes (direct and indirect impacts)
Tidal regime: Freshwater flow	Not assessed	Alteration in the freshwater regime within the waterbody may change salinity levels impacting on species present. There are no directly connected freshwater inputs to the coastal water body therefore there are no adverse impacts on freshwater flow.	No
Tidal regime: Wave exposure	Not assessed	Changes to tidal conditions and wave exposure within the water body may result in alteration to the extent of sediment accretion/erosion further altering morphology. The location and scale of works relative to the water body are not considered to adversely impact on tidal regime and associated hydromorphological elements.	No

5.3.3 Chemical Quality Assessment

Table 5-3 presents an assessment of the potential impact of the proposed works against the Chemical quality elements of the Scilly Isles Coastal Water Body.

Table 5-3 Potential impacts of proposed works relative to WFD Chemical Quality Elements of the Scilly Isles Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Benzo(a)pyrene	Good	<p>Construction works are not expected to result in changes to the chemical quality elements within the coastal water body. Proposed works are located at the rear of the beach and all work is to be carried out in the dry, or during low tide. The works do not require any excavation of beach sediments therefore it is considered unlikely that the works will disturb sediments which could change chemical levels in the water body.</p> <p>Although the works do not require heavy lifting equipment there is potential for accidental pollution events which could lead to chemicals entering this water body potentially causing temporary changes to the chemical quality elements present.</p> <p>The permanent works are not expected to cause alteration to the chemical quality elements for this coastal water body.</p>	Yes (temporary, direct and indirect impacts)
Dioxins and dioxin-like compounds	Good		
Hexabromocyclododecane (HBCDD)	Good		
Hexachlorobenzene	Good		
Hexachlorobutadiene	Good		
Mercury and Its Compounds	Fail		
Perfluorooctane sulphonate (PFOS)	Good		
Polybrominated diphenyl ethers (PBDE)	Fail		
Fluoranthene	Good		

5.4 Isles of Scilly Groundwater Body (GB40802G081200)

5.4.1 Quantitative Quality Assessment

Table 5-4 presents an assessment of the potential impact of the proposed works against the quantitative quality elements of the Isles of Scilly Groundwater Body.

Table 5-4 Potential impacts of proposed works relative to WFD Quantitative Quality Elements of the Isles of Scilly Water Body

WFD Quality Element	Current Status (2015)	Potential Impact	Further assessment and/or mitigation required?
Quantitative Dependent Surface Water Body Status	Good	Contamination and reduced groundwater quality may result from spillages and/or leaks of hazardous substances (e.g., oil, petrol, diesel) from machinery operation or equipment refuelling. Although the works do not require heavy lifting equipment there is potential for accidental pollution events which could lead to chemicals entering this water body potentially causing temporary changes to the quantitative quality elements. Due to the highly permeable geology in the region, risk of impacts to groundwater from pollution incidents is enhanced.	Yes (temporary, direct and indirect impacts)
Quantitative GWDTes test	Good		
Quantitative Saline Intrusion	Poor		
Quantitative Water Balance	Good		

5.4.2 Chemical Quality Assessment

Table 5-5 presents an assessment of the potential impact of the proposed works against the chemical quality elements of the Isles of Scilly Groundwater Body.

Table 5-5 Potential impacts of proposed works relative to WFD Chemical Quality Elements of the Isles of Scilly Water Body

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
Chemical Dependent Surface Water Body Status	Good	Contamination and reduced groundwater quality may result from spillages and/or leaks of hazardous substances (e.g., oil, petrol, diesel) from machinery operation or equipment refuelling. Although the works do not require heavy lifting equipment there is potential for accidental pollution events which could lead to chemicals entering this water body potentially causing temporary changes to the chemical quality elements. Due to the highly permeable geology in the region, risk of	Yes (temporary, direct and indirect impacts)
Chemical Drinking Water Protected Area	Good		
Chemical GWDTes test	Good		
Chemical Saline Intrusion	Poor		
General Chemical Test	Poor		

WFD Quality Element	Current Status (2019)	Potential Impact	Further assessment and/or mitigation required?
		impacts to groundwater from pollution incidents is enhanced.	

5.5 Impacts of the Proposed Works on Protected Sites

5.5.1 Designated Nature Conservation Sites

The designated sites outlined in Table 5-6 are located adjacent to and within the scheme red line boundary.

Table 5-6 Designated Sites located adjacent to and within the scheme red line boundary

Designation	Primary reason(s) for designation
Isles of Scilly Complex Special Area of Conservation (SAC)	Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Mudflats and sandflats not covered by seawater at low tide Reefs Annex II species: <ul style="list-style-type: none"> Shore dock <i>Rumex rupestris</i>
Isles of Scilly Special Protection Area (SPA);	Annex I species: <ul style="list-style-type: none"> Storm Petrel <i>Hydrobates pelagicus</i> Lesser Black-backed Gull <i>Larus fuscus</i> Breeding bird populations: <ul style="list-style-type: none"> Great Black-backed Gull <i>Larus marinus</i> Shag <i>Phalacrocorax aristotelis</i> Lesser Black-backed Gull Storm Petrel
Isles of Scilly Ramsar	Qualifying species: <ul style="list-style-type: none"> European Storm Petrel Lesser black-backed gull

Since Isles of Scilly SPA and Ramsar sites are designated primarily for their bird populations, these sites will not be considered further as part of this WFD Assessment. A Habitats Regulations Assessment (HRA) has been completed which details the impacts of the proposed scheme on these sites.

Impacts to the Isles of Scilly Complex SAC may arise from the construction phase of the scheme. As such, impacts to this designated site are scoped into the assessment.

WFD higher and lower sensitivity habitats are present in adjacent to works areas. These habitats include:

- Subtidal Seagrass Beds;

- Subtidal Rocky Reef;
- Rocky shore (intertidal rock);
- Subtidal Soft Sediment;
- Intertidal Soft Sediment;
- Gravel & Cobbles.

All of these habitats form part of the Isles of Scilly SAC designation and impacts to each habitat has been assessed as part of the HRA process and summarised in this report.

6 WFD Impact Assessment

6.1 Overview

The Scoping Assessment presented in Chapter 5 identified some receptors may potentially be at risk from the proposed works. An Impact Assessment is therefore required to describe how these identified impacts will be mitigated.

The Impact Assessment needs to consider if there is a pathway linking the pressure to the receptor. If there is no pathway there can be no impact on the receptor and there is no need for any further assessment of that receptor to be carried out. If there is a potential pathway the assessment should consider if the activity, and the pressure it creates, may cause deterioration of the receptor.

In order to effectively assess the potential impacts of the proposed works and decide upon suitable mitigation measures, a good understanding of the proposed scheme and design is required. Should any revisions be made to the proposed works that could impact any of the WFD Quality Elements, this section should be revised.

6.2 Impact Assessment

Table 6-1 and Table 6-2 discuss each of the receptors identified as being potentially at risk in the scoping assessment. Mitigation measures are recommended to mitigate the effects of the proposed works.

Table 6-1: Impacts and Mitigation Measures – Scilly Isles Coastal Water Body (GB620807080000)

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Biological		
Invertebrates	Indirect and direct	<p>Temporary impact: Short-term localised compaction of the foreshore. However, these impacts will be short-lived and invertebrates will be able to colonise naturally following the completion of the works.</p> <p>Temporary impact: The temporary works may impact invertebrates through pollution events.</p> <p>Mitigation: Pollution prevention measures will be required to be implemented via a Construction Environmental Management Plan (CEMP) throughout construction in order to prevent a pollution event (e.g. sediment release, fuel leaks etc.).</p>
Fish	Indirect	<p>Temporary impact: The temporary works may impact fish, macroalgae and phytoplankton through pollution events.</p> <p>Mitigation: Pollution prevention measures will be required to be implemented via a Construction Environmental Management Plan (CEMP) throughout construction in order to prevent a pollution event (e.g. sediment release, fuel leaks etc.).</p>
Macroalgae		
Phytoplankton		
Chemical		
Priority hazardous substances / priority substances	Indirect	<p>Temporary Impact: The limited construction work is not expected to mobilise sediments causing deterioration in priority hazardous substance status. The works do not require heavy lifting equipment however, there is potential for accidental pollution events which could lead to chemicals entering this water body potentially causing temporary changes to the chemical quality elements.</p> <p>Mitigation: Standard industry practices for the management of hazardous substances and pollution prevention measures should be adhered to during the construction phase of the works. This will be addressed by the implementation of the CEMP.</p>

Table 6-2: Impacts and Mitigation Measures - Isles of Scilly Groundwater Body (GB40802G081200)

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Quantitative and Chemical Status elements	Direct	<p>Temporary impact: Any impacts to the groundwater body from construction are expected to be negligible as there will be no intrusive works carried out. However, there is a risk of accidental pollution events could lead to chemicals entering this water body, lead to temporary changes to the quantitative and chemical quality elements present.</p> <p>Mitigation: Standard industry practices for the management of hazardous substances and pollution prevention measures should be adhered to during the construction phase of the works. This will be addressed by the implementation of the CEMP.</p>

6.2.1 Impacts to Designated Sites

A Habitats Regulations Assessment (HRA) Report has been produced which details potential impacts of the scheme on the designated nature conservation sites outlined in section 5.5.1.

The HRA outlines that impacts to the marine environment may arise due to disturbance and accidental spillages during construction. However, it concludes that if strict pollution and disturbance prevention measures are implemented, adverse impacts on the integrity of the sites can be ruled out.

6.3 Water Body Mitigation Measures

The Environment Agency’s Catchment Planning System outlines mitigation measures contributing to better ecological potential for relevant water bodies. Correspondence with the Environment Agency’s Catchment Coordinator (Cornwall) identified that neither water body screened into this assessment is designated as either artificial or heavily modified, subsequently there are no mitigation measures presented.

6.4 WFD Assessment Objectives

Following consideration of the potential impacts and recommended mitigation measures, Table 6-3 assesses whether the proposed works comply with the overarching objectives of the WFD.

Table 6-3: Assessment of the Proposed Works against the WFD Objectives

WFD Assessment Objective	Assessment of the Proposed Works
Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the water body	By adopting the mitigation measures highlighted herein the proposed works will not cause deterioration of the status of the ecological elements in the waterbodies assessed.
Objective 2: The proposed works do not compromise the ability of the water body to achieve its WFD status objectives	The scale of the proposed works relative to the size of the water body will not compromise the ability of the water bodies assessed to achieve their WFD status objectives.
Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD	There are no other bodies of water further to those assessed herein, therefore, the works will not compromise achievement of the WFD objectives in other waterbodies.
Objective 4: The proposed works contribute to the delivery of the WFD objectives	By adopting the mitigation measures highlighted herein the proposed works are not expected to impact on the delivery of the WFD objectives.

7 Discussion and Conclusions

7.1 Assessment Summary

The proposed works on the island of St Martin's have been assessed for compliance with the WFD Objectives with regards to the Scilly Isles Coastal Water body (Water Body ID - GB620807080000) and Isles of Scilly Ground Water Body (GB40802G081200). This assessment has been undertaken with the current proposed works design drawings. Should the design or scope of the work alter significantly, this report would need to be revised to ensure the mitigation measures and recommendations outlined in this report have been considered and to determine whether the final scheme is WFD-compliant.

7.1.1 Biological Assessment

The proposed works are not anticipated to pose a significant threat to the biological quality elements of the waterbodies, providing recommended mitigation measures are followed.

The works have the potential to cause temporary disturbance to invertebrate habitats within the footprint of the works due to sediment disturbance and temporary disturbance to invertebrates, fish, macroalgae and phytoplankton through accidental pollution incidents. Implementing strict pollution prevention measures will reduce the potential for pollution events. Works should be carried out at low tide, and best practice measures should be implemented to limit the risk of sediment disturbance.

No long-term or permanent impacts are expected.

7.1.2 Hydromorphological Assessment

An assessment has identified that the proposed works are not likely to present a significant risk to hydromorphology of the Scilly Isles Coastal water body, as the scale and scope of the proposed works is small in relation to the size of the water body.

In addition, all construction work will be undertaken in accordance with best practice for the management of hazardous substance and pollution prevention. This will reduce the likelihood of chemical contamination and subsequent impacts on WFD supporting elements.

7.1.3 Chemical Assessment

Construction work, albeit limited at St Martin's has the potential to cause pollution incidents may lead to a deterioration in chemical quality of both the Scilly Isles coastal water body and Isles of Scilly ground water body.

Industry best practice guidance should be outlined in a Construction Environmental Management Plan (CEMP), and the measures presented within should be adhered to throughout the construction phase. The document should clearly address measures to reduce the occurrence of any pollution incidents and limit the impacts on the relevant water bodies in the unlikely event that they occur.

7.2 Scheme Recommendations/ Key Considerations

The impact assessment determines whether the proposed works have the potential to significantly impact any of the quality elements screened into the assessment. Any mitigation measures that need to be considered to make the works compliant with the WFD are presented in Table 6-1 and Table 6-2; however, the critical ones are listed below:

- Construction Environmental Management Plan (CEMP), which should include measures such as:
 - Pollution prevention measures (daily machinery checks)
 - On site spill kit availability

7.3 Conclusions

The proposed works are expected to be compliant with WFD objectives if the appropriate mitigation measures described in relation to each potential impact are incorporated into the temporary works design. The proposed works are not expected to have a significant impact on any WFD receptors and no significant short-term, or long-term impacts are predicted, during either the construction or operational phases of the works.

There is the potential for pollution incidents during construction operations although the extent of the work is not expected to require the use of heavy machinery. However, should a pollution incident occur any impacts are expected to be localised and temporary in nature and are not considered to be significant.

Collectively the proposed works are not expected to contribute towards the failure of the water body to achieve Good Ecological Status or Potential; or to contribute towards a deterioration in the Ecological Status or Potential of a water body.

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Appendix 5.4: Biodiversity Net Gain Addendum

Isles of Scilly Sea Defences- Ecological Enhancements

Final Report

April 2023

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Council of the
ISLES OF SCILLY

JBA Project Manager

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Revision History

Revision Ref/Date	Amendments	Issued to
V1.0	Final Report	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly JBA Consulting carried out this work.

Prepared by Isabella Kelsey BSc
 Assistant Ecologist

Reviewed by Jonathan Harrison BSc MSc MCIEEM
 Senior Ecologist

Purpose

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Carbon Footprint

JBA is aiming to reduce its per capita carbon emissions.

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AONB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

Opportunities for ecological enhancements have been discussed with the CEO of the Wildlife Trust, to ensure that suitable and useful actions are taken and the below measures summarise these recommendations.

2 Enhancement Measures

2.1 Sand dune restoration (Bryher)

The proposed works at Great Popplestone includes the removal of a rock revetment installed by the council in 1994 in the northern end of the bay. This rock is embedded in the sand dune and as such interferes with the natural erosion processes. Removing this rock will reopen the dune face and potentially allow pioneer and drift line vegetation to colonise in the exposed sand.

It is likely that this work will require the void to be replaced with sand from the rear of the dune. The Isles of Scilly Wildlife Trust has identified an area of dune that has become fixed and dominated by a few scrub species. The SSSI designation includes the need to manage this scrub encroachment and it is proposed that the scrub in this area is thinned and sand removed to be placed in the void at the front of the dune. It should be noted that given the ongoing scrub encroachment there is the potential for a soil layer to be present. Where the aim of the management is to encourage mobile dune habitat with the associated plant community, soil should be removed or buried to a depth of at least 1 m.

2.2 Storm Petrel Nesting Station

In line with the conservation objectives outlined within European designated areas (e.g. SAC, SPA and Ramsar site) there is potential to create enhancement for the Storm Petrel *Hydrobates pelagicus*. It is proposed that an artificial Storm Petrel nesting station is constructed on St Agnes as part of the works, similar to the example in Figure 2-1 at Skokholm, Pembrokeshire. There is an opportunity to use local stone walling expertise to complete this and therefore promote 'local buy in'.

It is also proposed that infrared cameras are installed to monitor these birds behaviour and breeding success. However, due to Storm Petrels' particular sensitivity to disturbance, the installation of these cameras is not a significant requirement.

Whilst the introduction of an artificial Storm Petrel nesting station/ wall provides niches favourable for them to inhabit, the construction of this may also provide nesting sites for other coastal birds such as Shag *Phalacrocorax aristotelis*, Great Black-backed Gull *Larus*

marinus and the Lesser Black-backed Gull *Larus Fuscus* which is also outlined in the conservation objectives as qualifying features of the nearby SAC. Construction of the Storm Petrel Station is likely to take place inside Big Pool & Browarth Point (St Agnes) SSSI, most likely at the northern end of Porth Coose. A survey will be carried out by the Wildlife Trust prior to any construction to ensure that features of the SSSI are not present.

It has been noted that the creation of additional rock armour by the project has the potential to provide nesting opportunities without the need for further intervention. Due to the additional volume of rock, it is likely the number of interstitial spaces available for nesting birds to inhabit will increase. It is not recommended installing nest boxes within the rock armour, since they are likely to degrade over time and require replacing.



The solar control box. Chris Payne

Figure 2-1: Example of Storm Petrel Nesting Station at Skokholm, Pembrokeshire (British Birds, 2019)

2.3 Management of Invasive non-native species (INNS)

The presence of non-native invasive species (INNS) has been noted throughout all sites of the Isles of Scilly scheme. Biodiversity enhancement methods will incorporate two priority actions focused on achieving conservation objectives at Heathy Hill & Rushy Bay SSSI. Increased efforts in the clearing of Hottentot Fig *Carprobotus edulis* would reduce species competition and benefit Dwarf Pansy and Dune flora. In addition, removal/cutting of gorse, bramble and invasive non-native shrubs at Heathy Hill, creates less species competition allowing the enhancement of native vegetation.

Additional enhancements within the works area on St Agnes will be made through the funding of mechanical vegetation clearance to promote heathland and reduce vigour of

bracken. Aligning with the 2013 Isles of Scilly Seabird Recovery Project, the removal of the invasive *Pittosporum* could provide greater/increased areas to support breeding Gulls in the Gugh SSSI. This will be managed by the IoS Wildlife Trust.

2.4 Marine intertidal Enhancements

There are a number of opportunities to incorporate ecological enhancements within the intertidal zones across this scheme, through implementation of nature-based solutions. Artificial 'reef' rock pools will be placed in the revetment at Kitchen Porth, an example is shown in figure 3.1 this can provide opportunities for several marine species to inhabit whilst providing shelter for juvenile species. The 125 L sheltered hollow internal environment, create ecologically desirable habitats for larvae settlement and fish spawning, that could improve fish stocks within the area.

Other enhancements will include;

- Placing large rocks at foot of seawall;
- Textured formwork for concrete surfaces;
- Adding water retaining features to vertical walls;
- Constructing gentle slopes where possible;
- Allowing community produced tiles or other diversity enhancing features to be added to the flood defences.

Water retaining features should be considered carefully and the placement supervised by an ecologist. If they are placed in areas that are not inundated by the tide for long periods each day, there is the potential to create pockets of hypersaline standing water.

The most useful place to create rockpools could be in rocks placed at the toe of the wall, the rockpools can be retrofitted with pools, striations and cores. This will favour the colonisation of seaweeds associated with the mid and upper littoral zone (ie. Spiral wrack and Channel Wrack already colonising bay).



Figure 2-2: Reef cube (Arc Marine, 2023)

3 Conclusion

The measures outlined above have the potential to provide a net benefit for a number of important and protected species and habitats found around the Isles of Scilly. They also present an opportunity for monitoring to inform similar schemes in the future. The above recommendations will be incorporated into the Construction Environmental Management Plan which will then include detailed specifications for each enhancement, together with a monitoring plan and detailed targets.

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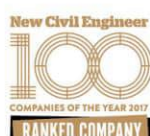
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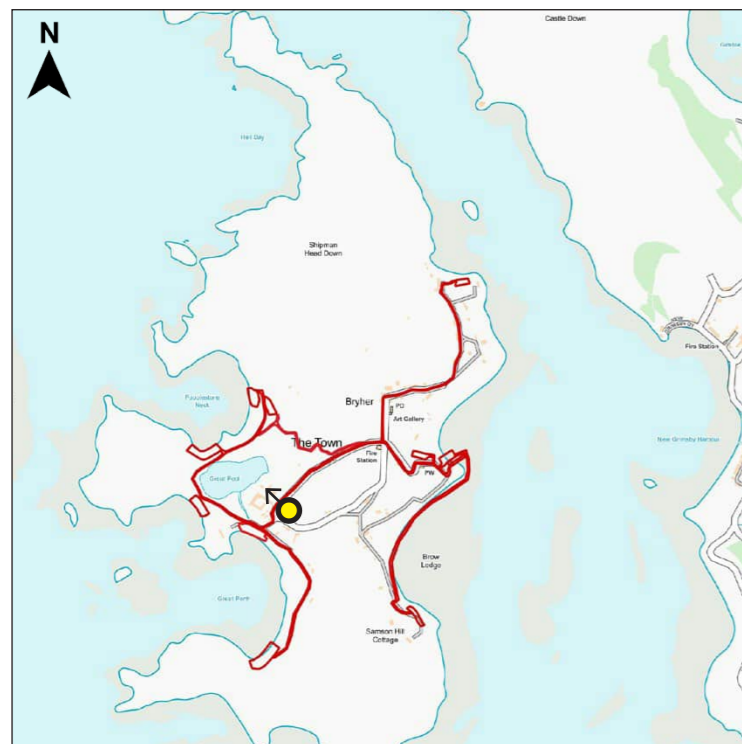
Appendix 6.4 Viewpoint Assessment Sheets





Viewpoint location plan

Proposed development location Viewpoint location



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Viewpoint description

An expansive view of the bay, the eye being drawn to the open sea framed by headlands and rocky islets. Closer to, the beach forms an attractive sweeping band which also encompasses the viewer. However, in this location, the existing rock armour forms a slightly stark area of uniformly textured, albeit natural material at the periphery of the view. The works and the completed construction for this part of the site would be fully visible.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Addition of Cornish or Scillonian rock armour extending from existing at north end of beach, and demountable flood barrier. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87562 14674
Distance to site: 0.02 km
Camera direction: NW
Viewpoint elevation: 6m AOD
Camera model: Nikon D7000
Date of Photography: 02/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: semi-overcast, broken cloud

BLOOM –
Off islands of Isles of Scilly
EIA - Landscape Viewpoints
Project: 2021s1204

Figure 6.4.8:
**Viewpoint Bryher 8:
Great Porth Beach North
Revised option**

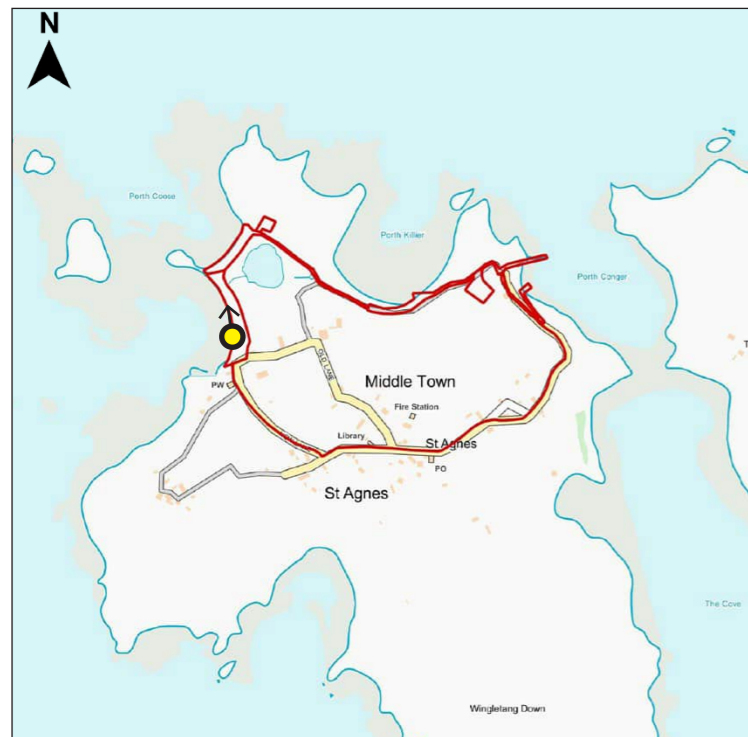




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

Panoramic, open view taking in the bay and open sea beyond, the sweeping curve of the dune, rocky islets and low headlands and the bowl of land below the dune including Big Pool. Visually interesting contrast of colours and textures between the landward and seaward elements. Artificial rock revetment connecting mainland to outlying rocky outcrop and islets are interesting focal points in the view. Construction, haulage and the finished installation would all be clearly visible from this location.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Removal from view of degraded erosion control fabrics currently visible at dune surface. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87754 08391
Distance to site: 0.00 km
Camera direction: N
Viewpoint elevation: 1m AOD
Camera model: Nikon D7000
Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
Crop factor: 1.5x
35mm equivalent: 50mm fixed lens
Horizontal field of view: 65.5°
Height of Camera above ground: 1.55m
Weather Conditions: fair with broken cloud

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Figure 6.4.24:
**Viewpoint St. Agnes 7:
Perigris from Dune
Revised option**

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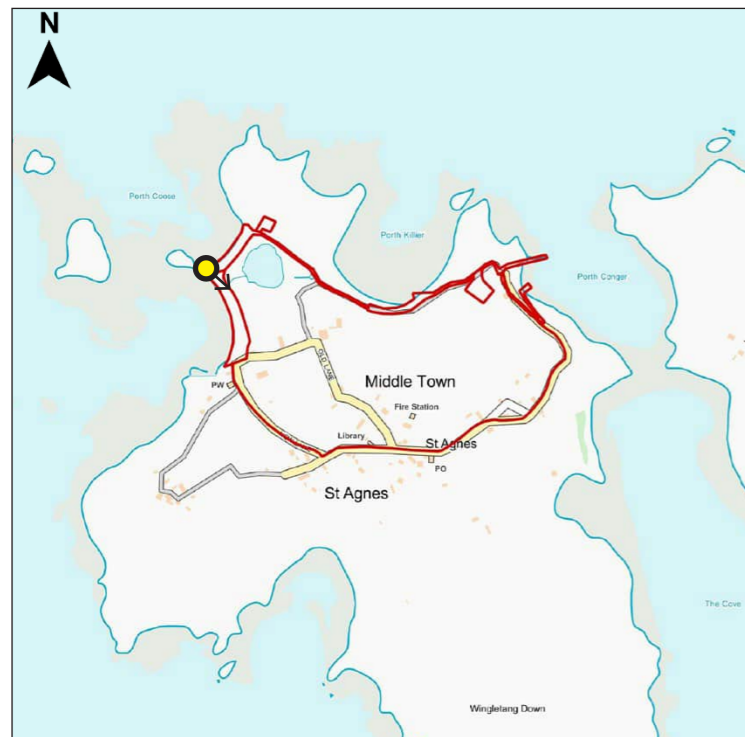




Viewpoint location plan

Proposed development location

Viewpoint location



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Viewpoint description

View along beach-side of the dune looking south towards Middle Town and the St. Agnes lighthouse, which forms an appealing visual focus left of centre. St. Agnes' Church tower is a secondary focal point to the right. Sweeping parallel lines of dune vegetation, large pebbles and seaweed forms an interesting array of textures and colours. Existing degraded erosion protection fabric detracts significantly from the quality of the view. Construction, haulage and the finished installation would all be clearly visible from this location.

Visible changes from this location

Construction activities including any temporary on-site storage of bulk materials. Removal from view of degraded erosion control fabrics currently visible at dune surface. Completed installation would be visible but not out of keeping within the context of the view.

OS Grid Reference: SV 87693 08533
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 Camera direction: SE
 Viewpoint elevation: 0m AOD
 Camera model: Nikon D7000
 Date of Photography: 03/11/21

Camera lens: DX 35mm fixed lens
 Crop factor: 1.5x
 35mm equivalent: 50mm fixed lens
 Horizontal field of view: 65.5°
 Height of Camera above ground: 1.55m
 Weather Conditions: fair with broken cloud

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Project: 2021s1204

Figure 6.4.25:
**Viewpoint St. Agnes 8:
Periglis Beach from North End
Revised option**

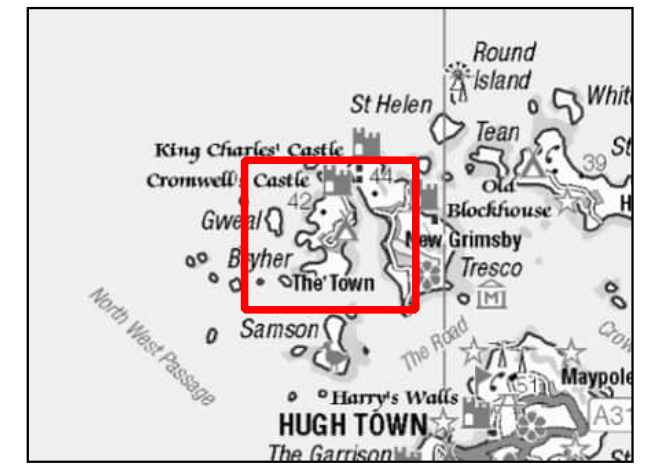
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Appendix 7.1: Historic Landscape Character Figures



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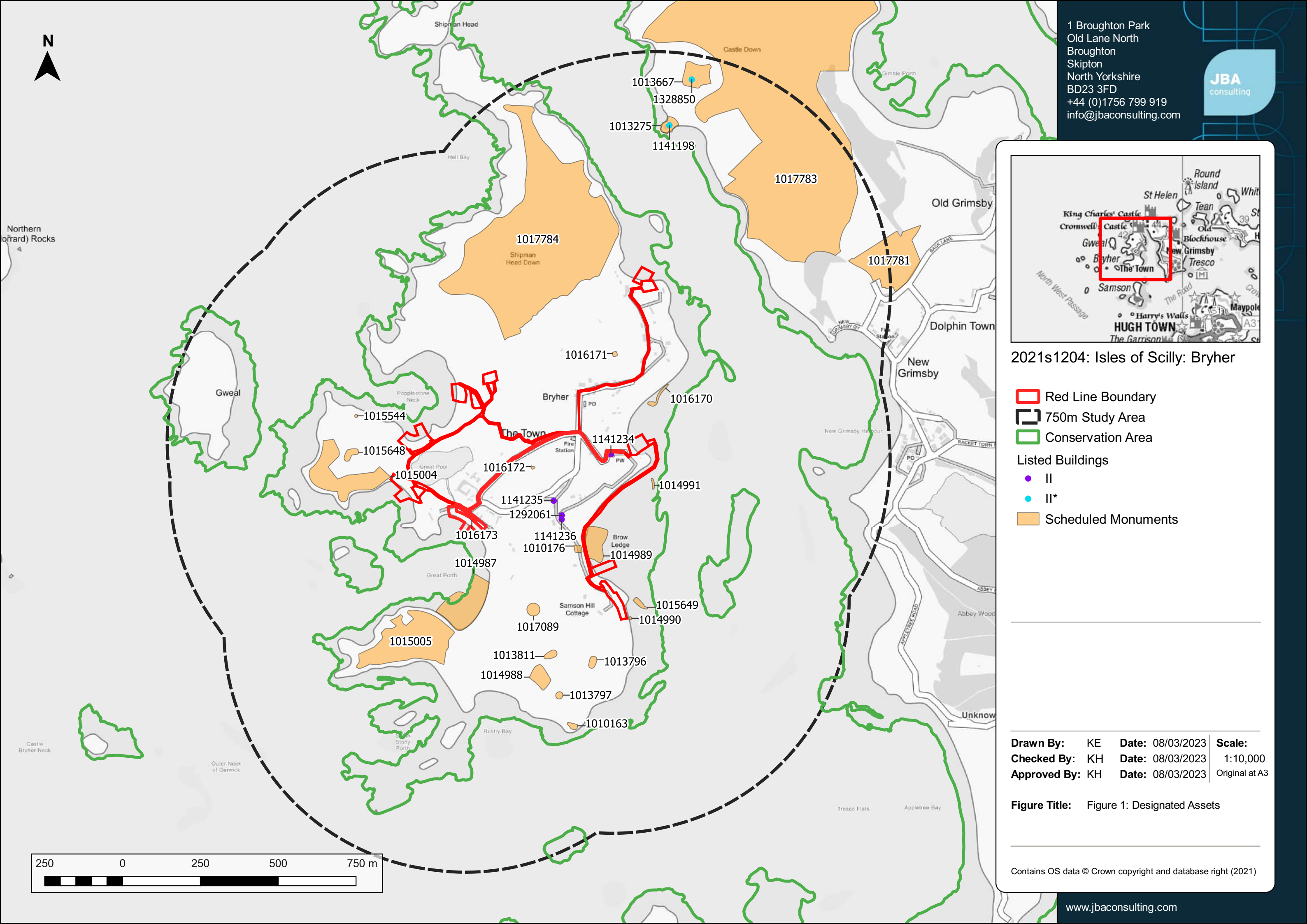
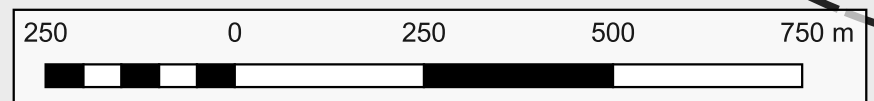
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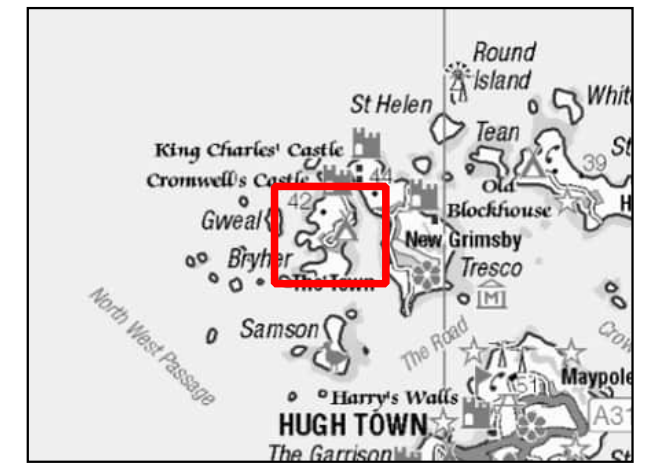
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-  750m Study Area
-  Conservation Area
- Listed Buildings
 -  II
 -  II*
-  Scheduled Monuments

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Approved By: KH **Date:** 08/03/2023 Original at A3

Figure Title: Figure 1: Designated Assets

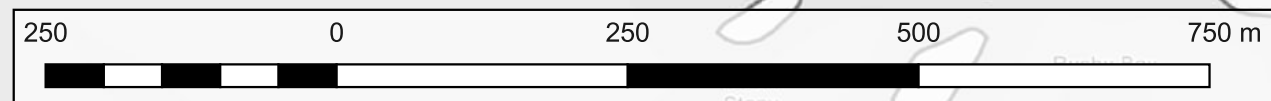
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2021s1204: Isles of Scilly: Bryher

- Red Line Boundary
- 250m Study Area
- Non-Designated Assets

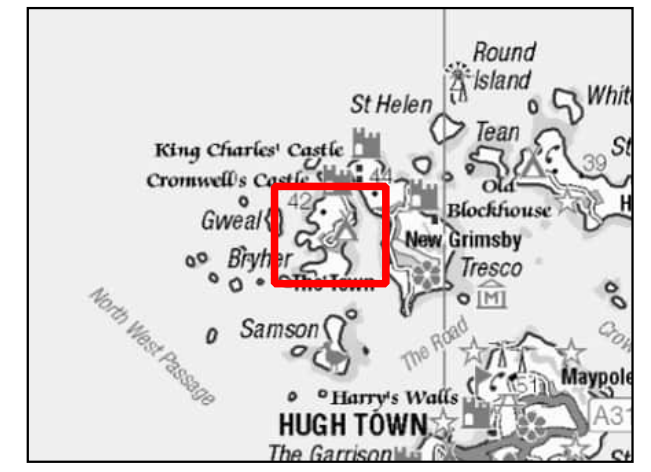
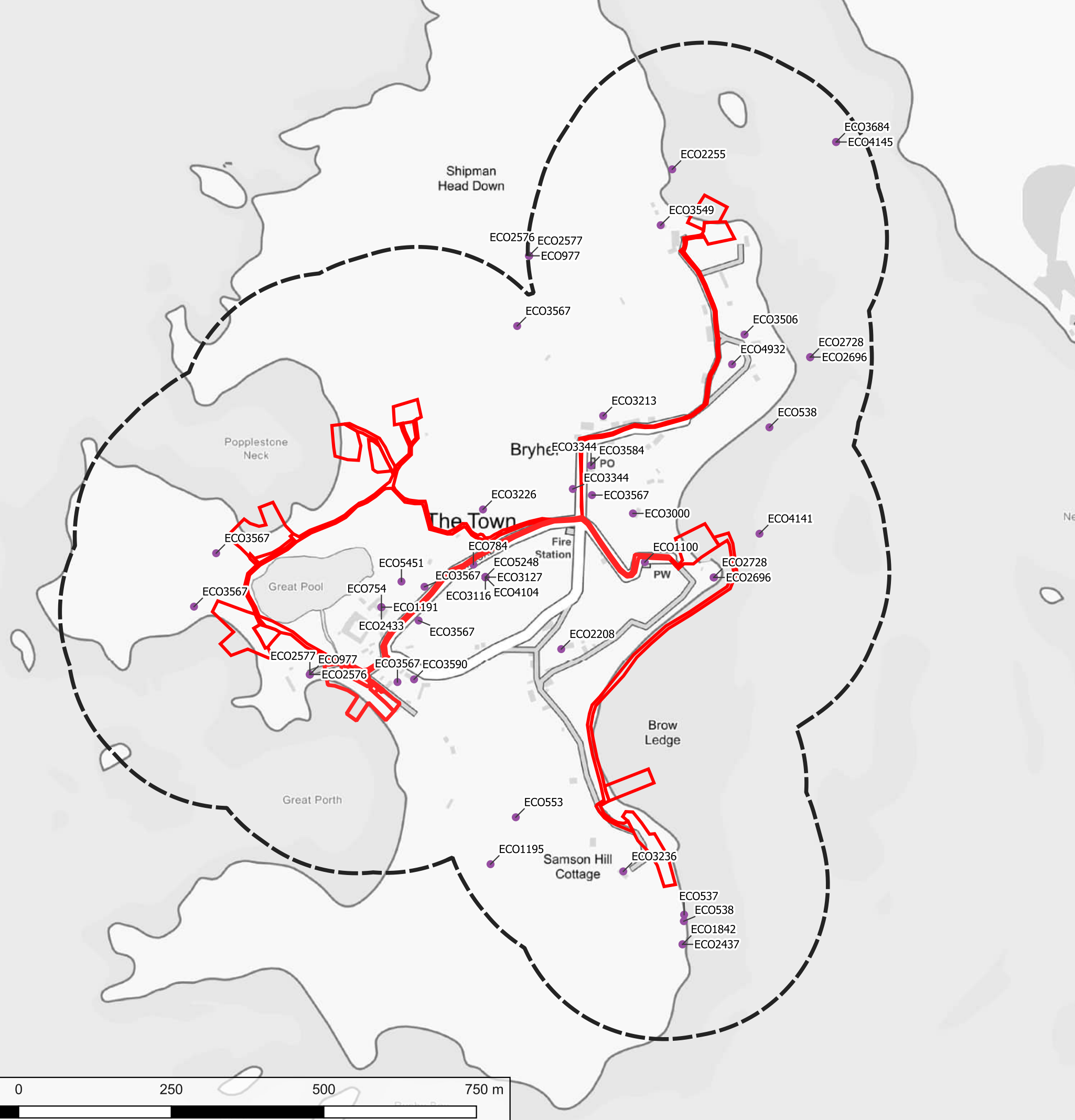


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Figure Title: Figure 2: Non-designated Assets

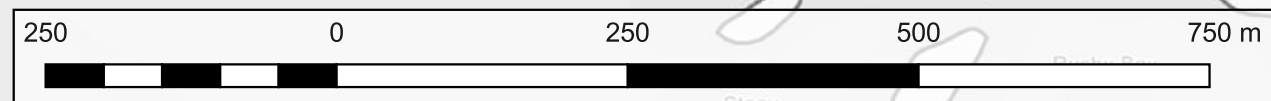


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- Red Line Boundary
- 250m Study Area
- Event Records



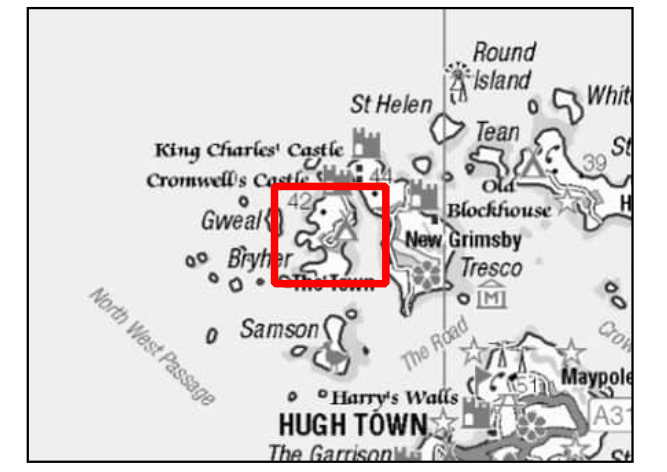
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Figure Title: Figure 3: Events

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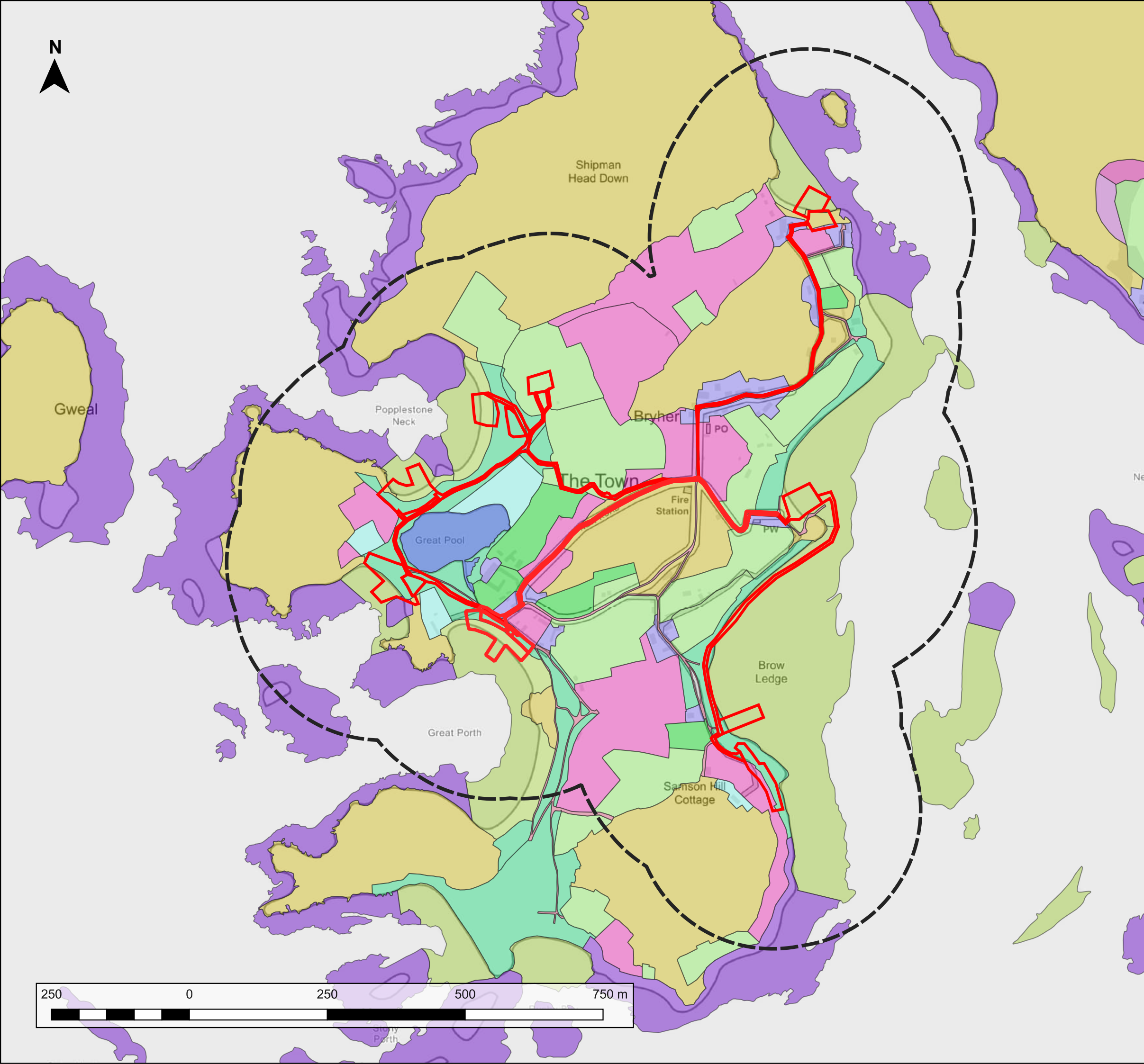
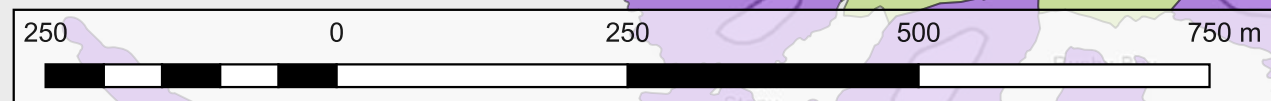
2021s1204: Isles of Scilly: Bryher

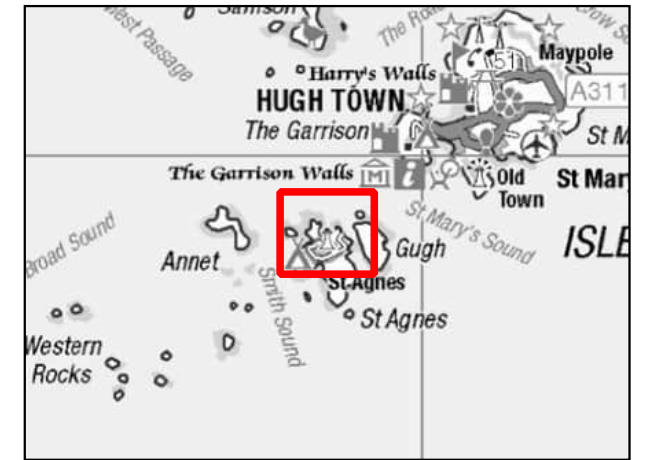
- 250m Study Area
- Communications
- Farmland: anciently enclosed land (prehistoric to early post-medieval)
- Farmland: bulb strips, late C19/C20
- Farmland: late post-medieval enclosures (C19)
- Farmland: modern enclosures (post 1908), excluding bulb strips
- Foreshore: rocky foreshore and offshore rocks
- Foreshore: sandy foreshore (beach and intertidal flats)
- Rough Ground: blown sand/dunes
- Rough Ground: heathland
- Settlements
- Water: natural and artificial pools
- Woodland: conifers
- Red Line Boundary

Drawn By: KE	Date: 08/03/2023	Scale:
Checked By: KH	Date: 08/03/2023	1:6,500
Approved By: KH	Date: 08/03/2023	Original at A3







Figure Title: Figure 4: Historic Landscape Characterisation

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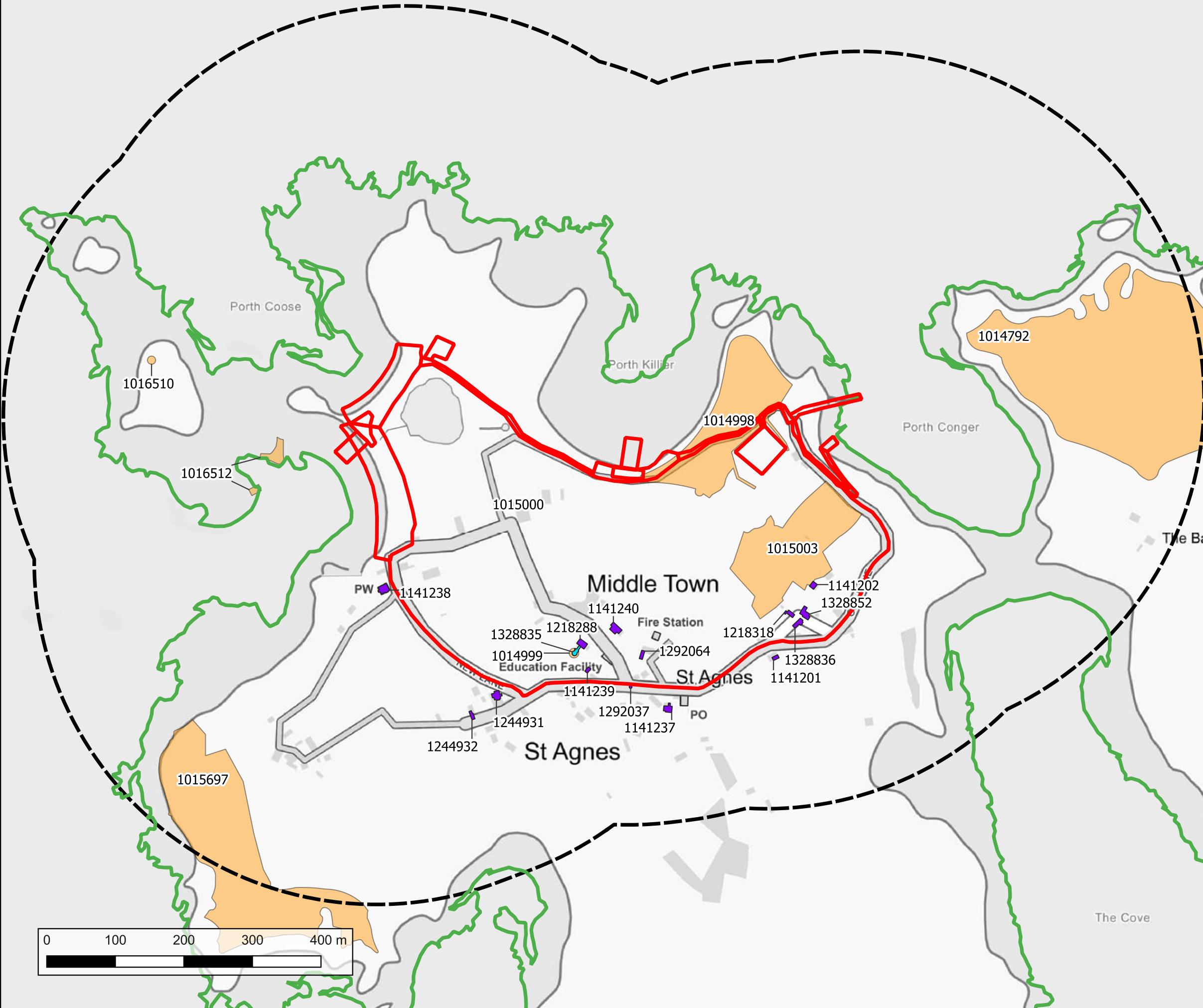
2021s1204: Isles of Scilly: St Agnes

-  Red Line Boundary
-  500m Study Area
-  Grade II* Listed Buildings
-  Grade II Listed Buildings
-  Scheduled Monuments
-  Conservation Area

Drawn By: KE **Date:** 22/09/2022 **Scale:**
Checked By: KH **Date:** 22/09/2022 1:5,500
Approved By: KH **Date:** 22/09/2022 Original at A3




Figure Title: Figure 1: Designated Assets

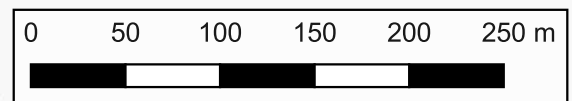
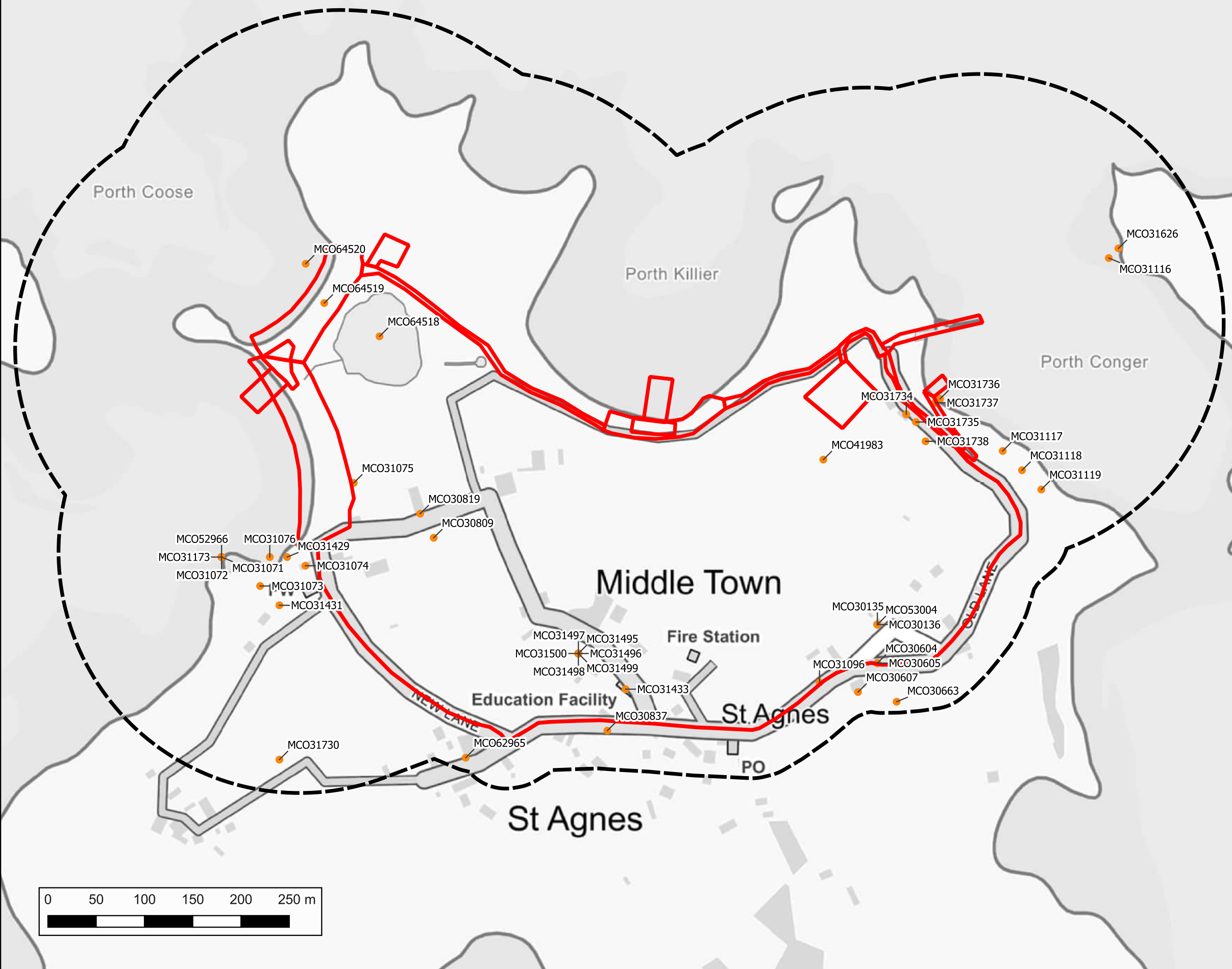
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2021s1204: Isles of Scilly: St Agnes

-  Red Line Boundary
-  250m Study Area
-  Non-Designated Assets



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Checked By: KH **Date:** 22/09/2022 1:4,000
Approved By: KH **Date:** 22/09/2022 Original at A3

Figure Title: Figure 2: Non-Designated Assets

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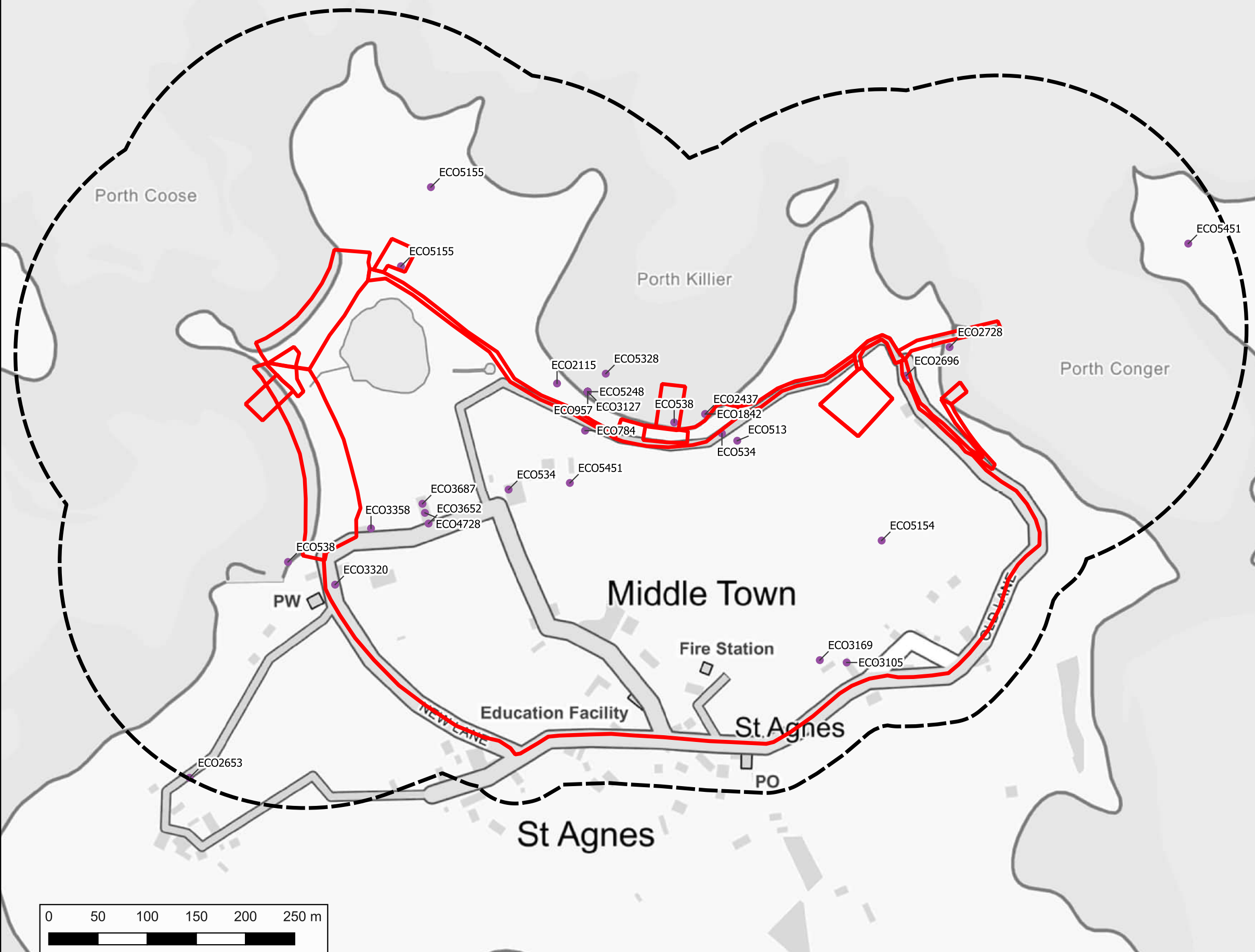


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2021s1204: Isles of Scilly: St Agnes

- Red Line Boundary
- 250m Study Area
- Events



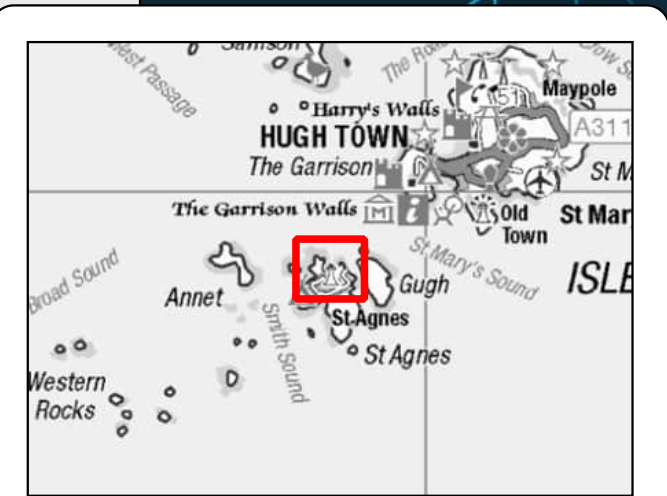
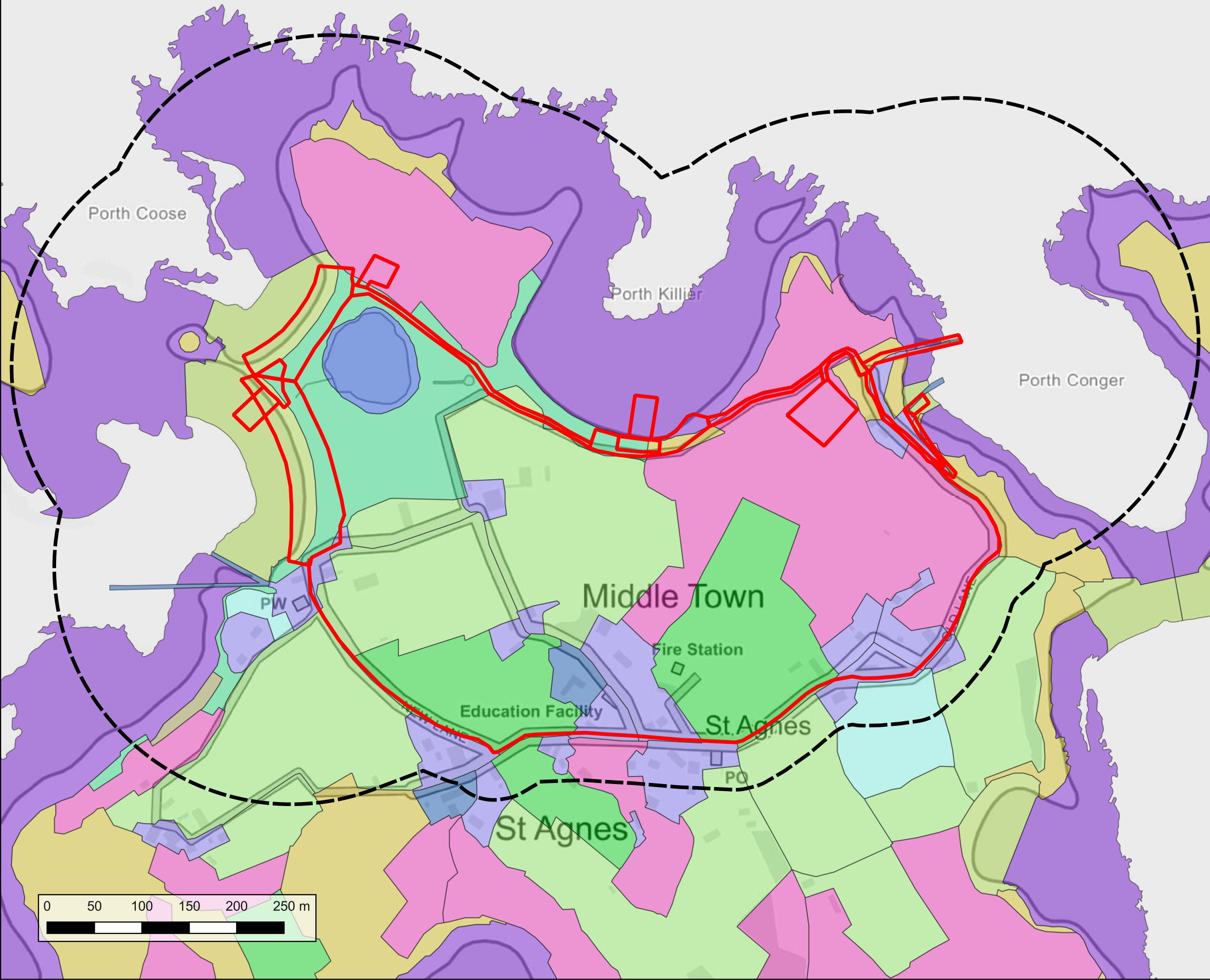
Drawn By: KE	Date: 22/09/2022	Scale:
Checked By: KH	Date: 22/09/2022	1:4,000
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Figure Title: Figure 3: Events

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 info@jbaconsulting.com



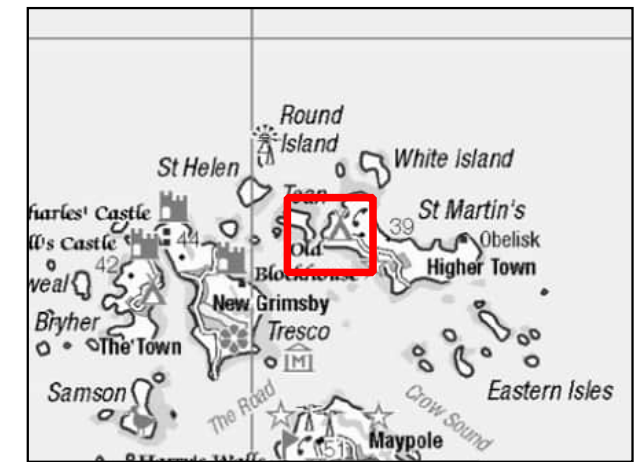
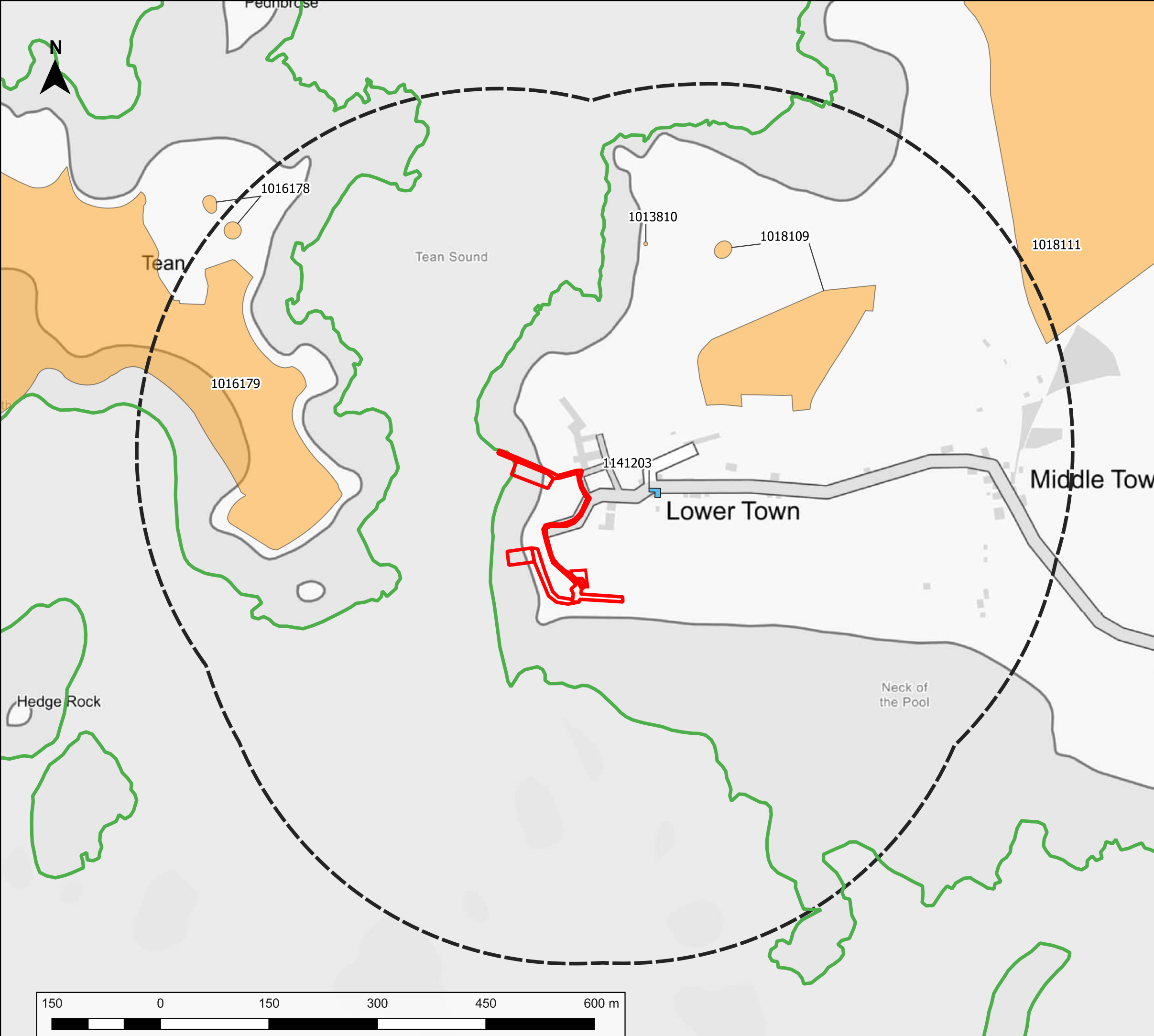
2021s1204: Isles of Scilly: St Agnes

- Red Line Boundary
- 250m Study Area
- Communications
- Farmland: anciently enclosed land (prehistoric to early post-medieval)
- Farmland: bulb strips, late C19/C20
- Farmland: late post-medieval enclosures (C19)
- Farmland: modern enclosures (post 1908), excluding bulb strips
- Foreshore: rocky foreshore and offshore rocks
- Foreshore: sandy foreshore (beach and intertidal flats)
- Rough Ground: blown sand/dunes
- Rough Ground: heathland
- Settlements
- Water: natural and artificial pools
- Industrial: existing
- Maritime safety: existing and disused installations






Drawn By: KE **Date:** 22/09/2022 **Scale:**
Checked By: KH **Date:** 22/09/2022 1:4,000
Approved By: KH **Date:** 22/09/2022 Original at A3

Figure Title: Figure 4: Historic Landscape Characterisation

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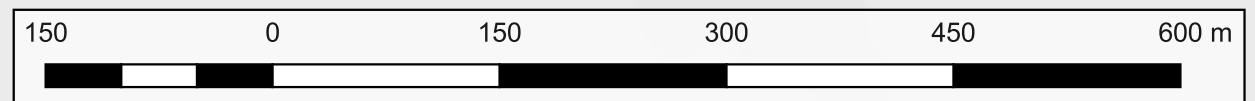


2021s1204: Isles of Scilly: St Martin's

-  Red Line Boundary
-  500m study area
-  Scheduled Monuments
-  Conservation Areas
- Listed Buildings
-  II

Drawn By: EP **Date:** 08/03/2023 **Scale:**
Checked By: KE **Date:** 08/03/2023 1:5,000
Approved By: PM **Date:** 08/03/2023 Original at A3

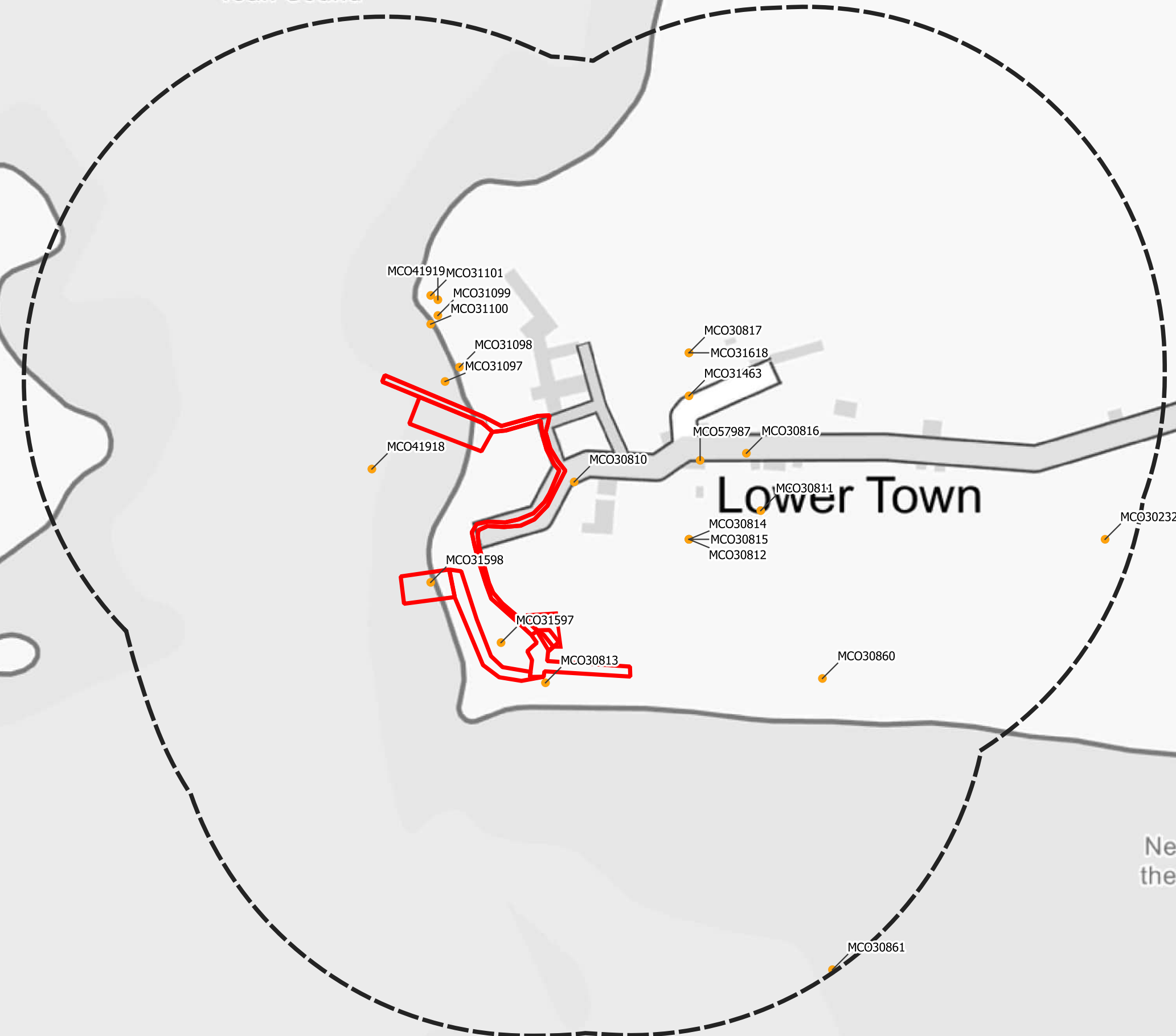
Figure Title: Figure 1: Designated Assets



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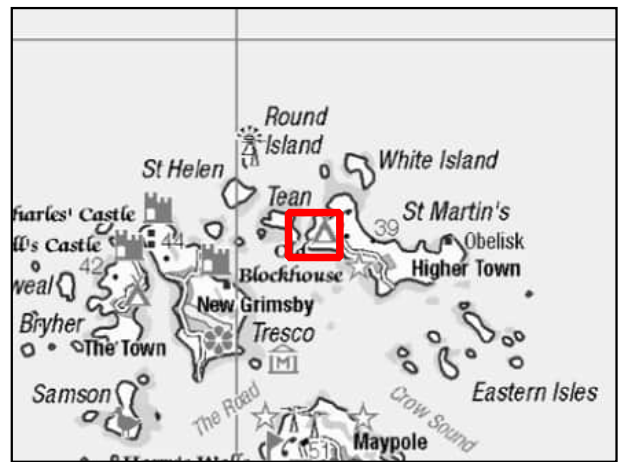


Tean Sound



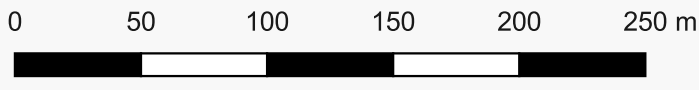
Lower Town

Neck of the Pool



2021s1204: Isles of Scilly: St Martin's

- Red Line Boundary
- 250m Study Area
- Non-designated Assets



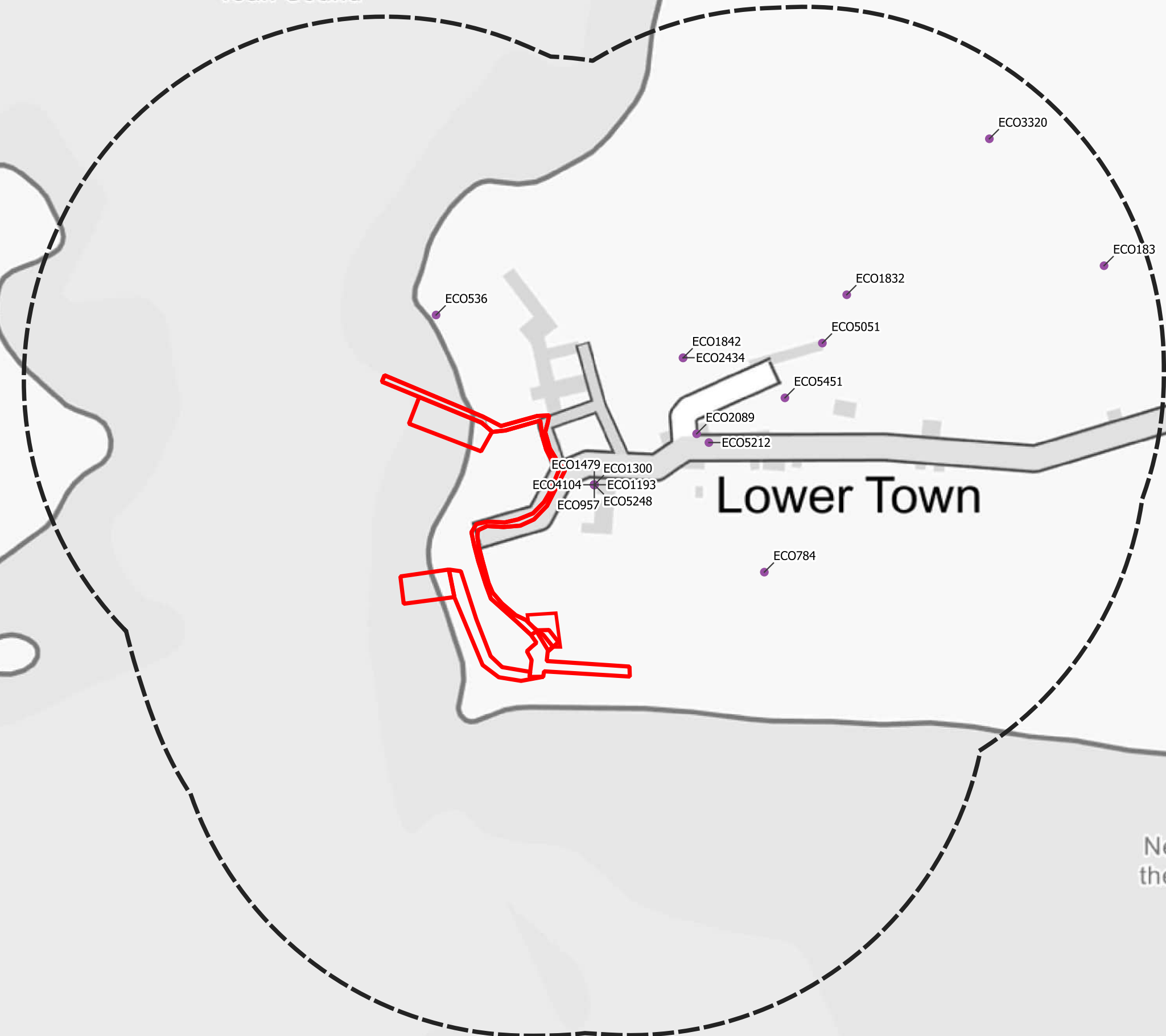
Drawn By: EP	Date: 09/03/2023	Scale:
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Approved By: PM	Date: 09/03/2023	Original at A3

Figure Title: Figure 2: Non-Designated Assets

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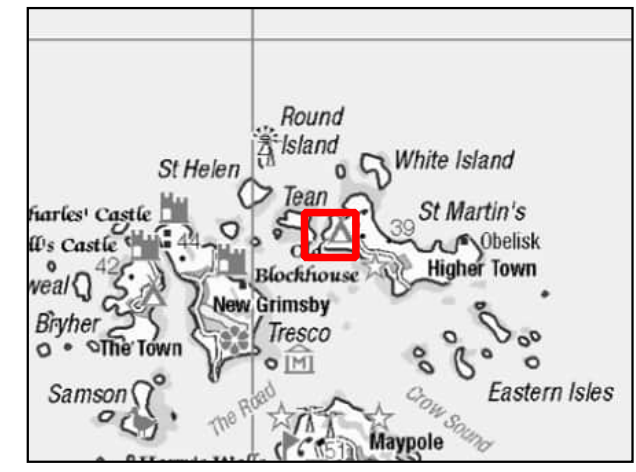


Tean Sound



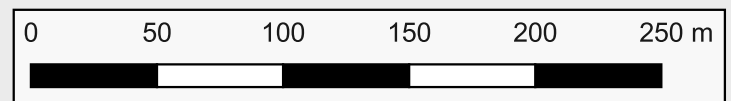
Lower Town

Neck of the Pool



2021s1204: Isles of Scilly: St Martin's

- Red Line Boundary
- 250m Study Area
- Event Points



Drawn By: KE	Date: 09/03/2023	Scale:
Checked By: KH	Date: 09/03/2023	1:3,000
Approved By: KH	Date: 09/03/2023	Original at A3

Figure Title: Figure 3: Events

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Tean Sound

Lower Town

Neck of the Pool

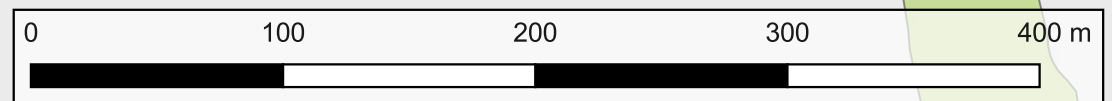


2021s1204: Isles of Scilly: St Martin's

- Red Line Boundary
- 250m Study Area
- Communications
- Farmland: anciently enclosed land (prehistoric to early post-medieval)
- Farmland: bulb strips, late C19/C20
- Farmland: modern enclosures (post 1908), excluding bulb strips
- Foreshore: rocky foreshore and offshore rocks
- Foreshore: sandy forshore (beach and intertidal flats)
- Rough Ground: blown sand/dunes
- Rough Ground: heathland
- Settlements

Drawn By: KE	Date: 09/03/2023	Scale:
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Figure Title: Figure 4: Historic Landscape Characterisation



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