Habitat Management and Monitoring Plan

December 2024

Land at Basin Road, Shoreham Port, Southwick, West Sussex

Prepared by
CSA Environmental

On behalf of
Client

Report No: CSA/6818/02

CSA environmental

masterplanning | ecology | landscape | heritage

This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

Report Reference	Revision	Date	Prepared by	Approved by	Comments
CSA/6818/02	-	03/12/2024	LG/CC	CC	1st Draft
	A	17/12/2024	LG/CC	CC	FINAL
	B	24/04/2025	LG/CC	CC	Updated
	C	08/05/2025	LG/CC	CC	Minor Update

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1.0 INTRODUCTION

1.1 This report has been prepared by CSA Environmental on behalf of Shoreham Port. It sets out a Habitat Management and Monitoring Plan (HMMP) for land located at South West of Pumping Station, Basin Road South, Southwick, West Sussex (hereafter referred to as 'the Site'). The report has been prepared for submission in order that Condition 3 of planning permission (ADDM/07400/24) for the Site may be discharged. The wording of this condition is as follows:

Condition 03

No development shall take place until a habitat management and monitoring plan for the proposed compensation site, including details of timing for delivery of the compensation site, the roles and responsibilities of Shoreham Port Authority and compensation site, the roles and responsibilities of Shoreham Port Authority and compensation site, the roles and responsibilities of Shoreham Port Authority and how it will be coordinated with other stakeholders including those managing the wider sea defences scheme, has been submitted to and approved in writing by the Local Planning Authority. The compensation site shall be provided, maintained and monitored thereafter in accordance with the agreed details.

Reason: To minimise the environmental impacts of the development and to enhance biodiversity having regard to the National Planning Policy Framework and having regard to policy 31 of the Adur Local Plan.

1.2 Appended to this HMMP is a Habitat Protection, Management and Enhancement Plan (see Appendix F) which is intended, along with information presented herein, to address Condition 4 of the planning permission. The wording of this condition is as follows:

Condition 04

No development shall take place until details of measures to manage, protect and enhance the retained vegetated shingle have been submitted to and approved in writing by the Local Planning Authority. The retained shingle shall be managed, protected and enhanced thereafter in accordance with the agreed details.

Reason: To minimise the environmental impacts of the development and to enhance biodiversity having regard to the National Planning Policy Framework and having regard to policy 31 of the Adur Local Plan.

1.3 The proposed scheme is for the provision of 17 no. beach huts to be set out in a linear manner, as detailed on the Block Plan (ECE Ref: 7378_SK_01) and Beach Huts Specification (ECE Ref: 7378_SK_03). The Beach huts will be constructed on a concrete slab, at intervals of c.0.5m (with shingle to be replaced in between). The proposals will result in the loss of 0.013ha of existing coastal vegetated shingle habitat, which has colonised a small area of made-up ground / shingle located between Basin Road South and the beach promenade (i.e. set back from the

main beach). This area of vegetated shingle has been assessed as being in 'poor' condition in line with Habitat Condition Assessment (HCA) criteria for the Statutory Biodiversity Metric (Defra, 2024[1]). A Habitats Plan for beach huts Site is provided in Appendix A. HCA criteria for coastal vegetated shingle are provide within Appendix C.

1.4 Coastal vegetated shingle is a S41 Priority Habitat type. Compensation and enhancement measures proposed to mitigate for habitat loss / degradation as a result of the proposals are set out within the Biodiversity Technical Note (CSA/6818/01) which was submitted alongside the planning application. Proposed measures comprise:

- Retention and protection of existing vegetated shingle behind and adjacent to areas effected by construction.
- Translocation of rarer plant species (e.g. yellow horned poppy and rock sea lavender) to retained and protected areas.
- Enhancement of retained coastal vegetated shingle through the removal of invasive plan species (e.g. silver ragwort) and the use of removed shingle substrate to create a varied topography in retained areas.
- Creation of a new area of coastal vegetated shingle habitat within the identified 'Compensation Site' located at Spending Beach to the west of the proposed Beach Huts site, as shown on Location Plan (ECE Ref: 7378_LOC_001) and the Proposed Habitat Compensation Site Plan (CSA/6818/101), provided in Appendix B).

1.5 Creation of coastal vegetated shingle habitat at Spending Beach will be delivered in association with similar proposals for coastal vegetated shingle habitat enhancement on an adjacent part of the beach as part of a wider sea defences scheme which received planning consent in September 2023 (Ref: BH2023/00627), subject to conditions (current application to vary conditions is under determination, Ref: BH2024/01605). An updated Ecological Design Strategy was provided by JBA Consulting (June 2024, Ref: BHCC-JBA-00-00-RP-EN-0016-S0-P01) to support the variation of conditions application, which details habitat creation and enhancement proposals for Spending Beach; and this has been used to inform production of this HMMP.

1.6 Prescribed management works are intended to generally increase the botanical diversity and habitat structure, in order to encourage wildlife and ensure ongoing provision of coastal vegetated shingle habitat alongside this part of the Sussex coastline.

1.7 The implementation of this HMMP will be monitored by a suitably qualified ecologist. Details of proposed management and monitoring works are detailed herein and are provided for the first 5 years following

[1] Defra, 2024. *The Statutory Biodiversity Metric User Guide*. London: Defra.

construction, after which the HMMP will be reviewed and updated as necessary. The application is not subject to mandatory Biodiversity Net Gain requirements (under the Environment Act 2021) as it was submitted prior to mandatory net gains coming into force on 12 February 2024, and as such a longer 30-year monitoring period is not considered necessary in this instance.

1.8 The implementation and maintenance of the proposed beach hut and habitat compensation areas will remain the responsibility of the installing landscape contractor (as appointed by Shoreham Port).

2.0 GENERAL MANAGEMENT AIMS AND PRINCIPLES

General Management Aims

2.1 The key aim of this management plan is as follows:

- Maximise the potential biodiversity value through the management and creation of a diversity of habitats and therefore enhance biodiversity and encourage local wildlife in the long term.

General Management Principles

2.2 All new planting will be maintained in accordance with good horticultural practice to ensure the thriving of individual species.

2.3 All new/replacement planting will be conducted into well-prepared ground and follow good horticultural practice. All new native transplants should be protected with proprietary guards / shelters as appropriate.

2.4 Sufficient watering will be undertaken by the contractor to establish healthy plant growth.

2.5 Peat-based composts will be avoided.

2.6 All plants will be maintained in a disease and pest free state. 'Natural' methods of pest control with no chemical application.

2.7 All compensation areas will be kept tidy and free from invasive species, debris and litter. Invasive species (e.g. silver ragwort) will be removed by hand.

2.8 Any hard surfacing adjacent to management areas are to be protected from damage by machinery, with surface debris swept after each visit.

2.9 The appointed management company are to keep records of all visits undertaken and the operations carried out on each visit.

2.10 Records are to be kept in one location and copies are to be made available for inspection by the Local Planning Authority.

3.0 HABITAT BASELINE

Proposed Beach Huts Site – Existing Coastal Vegetated Shingle

3.1 The proposed Beach Hut site consists of an area of c. 0.05ha of shingle habitat, which has been colonised by ruderal and coastal flora. This area of habitat has developed over made up ground (likely generated from the adjacent road construction), with shingle from the beach likely being washed up over the area as a result of storm action. It is separated from the main beach by a c. 1m wide concrete footpath/ promenade.

3.2 The shingle is well vegetated by silver ragwort *Jacobaea maritima* (dominant), which has created a tall herb/ruderal environment. In addition to this, a variety of coastal / early colonising species are present including orache species *Atriplex sp. glabriuscula)*, samphire *Salicornia europaea*, sea kale *Cranbe maritima,* sea couch *Elymus pungens* and fescue sp. *Festuca sp.*, with rarer instances of buck's-horn plantain *Plantago coronopus*, musk storksbill *Erodium moschatum,* sea beet *Beta vulgaris ssp. maritima*, pellitory of the wall *Parietaria Judaica,* bristly oxtongue *Helminthotheca echioides*, kidney vetch *Anthyllis vulneraria,* black medick *Medicago lupulina,* sow thistle *Sonchus sp.,* tree mallow *Lavatera maritima*, clover sp. *Trifolium sp.* and mayweed sp. *Tripleurispermum sp.*

3.3 Individual plants of yellow horned- poppy *Glaucium flavum (*four plants recorded) (Red listed, England) and rock sea lavender *Limonium procerum* (one plant recorded in July 2024; located centrally along the southern margin of the survey area) (Sussex; rare distribution) were recorded in July 2024.

3.4 A habitat condition assessment[2] (undertaken in July 2024) indicated that the habitat was in 'poor' condition, as fewer than four of the condition criteria for vegetated shingle were met, comprising 'meeting a good representation of coastal vegetated shingle habitat' (Criteria A), 'structural variation' (Criteria B), 'presence of bare / open ground' (Criteria C), and the 'absence of any scrub being present' (Criteria G).

3.5 The habitat condition criteria listed below were failed. These criteria will be targeted (where possible) through the management prescriptions detailed herein:

- functional coastal processes not modified by hard engineering (Criteria D),
- varied topography (Criteria E)
- invasive species, as whilst silver ragwort is not listed on Schedule 9 of the Wildlife and Countryside Act 1981, it is a Mediterranean species which is considered to be invasive in this instance (Criteria F)

[2] Defra (July, 2023) The Statutory Biodiversity Metric- Technical Annex 1: Condition Assessment Sheets and Methodology July 2023 (v1.0.2)

Proposed Compensation Site – Spending Beach

3.6 The proposed habitat compensation site is located on Spending Beach c. 880m west of the proposed Beach Huts site; close to the harbour arm. It comprises an area of unvegetated shingle / man-made aggregates, with larger made-made material (e.g. concrete blocks) along the hightide line adjacent. This area is currently disturbed on a periodic basis by HGVs being used to transport aggregate (shingle) from the port access to the north, through to the beach frontage to the east where shingle is re-distributed from an extraction site west of the harbour mouth (ongoing and permitted works require to address longshore drift issues).

3.7 Areas of the 'beach' located immediately adjacent to the west and north of the proposed compensation site comprise further areas of disturbed shingle / made-up ground, which is sparsely vegetated by species such as sea couch grass and silver ragwort (occasional distribution), and sea beet, sea kale, mayweed sp., buck's-horn plantain, rock samphire and clover sp. (occasional distribution). These areas have been identified as 'coastal vegetated shingle' in 'moderate' condition (full details are provided within the 'Ecological Design Strategy (JBA Consulting, June 2024, Ref: BHCC-JBA-00-00-RP-EN-0016-S0-P01) produced in relation to the wider sea defences project (Planning Ref: BH2024/01605)). As part of habitat compensation proposals for the sea defences project, these areas of coastal vegetated shingle will be enhanced from 'moderate' to 'good' condition.

3.8 The presence of existing vegetated shingle habitat adjacent to the proposed compensation area indicates that there is potential for this habitat type to be expanded and enhanced. Works to create new vegetated shingle and enhance existing areas will result on a viable and self-sustaining area of vegetated shingle. Spending Beach benefits from having no public access and being under the control of Shoreham Port, which will be responsible for implementing both habitat creation / enhancement schemes.

4.0 HABITAT MANAGEMENT

Proposed Beach Huts Site – Existing Coastal Vegetated Shingle

Objectives

4.1 To retain and enhance existing coastal vegetated shingle habitat where possible alongside provision of new beach huts.

4.2 To remove invasive species (e.g. silver ragwort) and promote species diversity.

4.3 To translocate individual plants of rare species and encourage natural recolonization where possible.

4.4 To create varied topography to enable a diversity of microclimates for plant and invertebrate species to colonise.

4.5 To enhance existing retained coastal vegetated shingle habitat from 'poor' to 'moderate' condition (in line with Statutory Biodiversity Metric Criteria).

4.6 Provide interpretation during mitigation and construction phases to educate the public on the scope of compensation measures taking place, and the importance of vegetated shingle habitat.

Prescriptions

Implementation

4.7 Prior to any work commencing the working area will be secured (e.g. using Heras fencing) and appropriate interpretive signage provided detailing vegetated shingle protection, translocation and compensation measures (as secure by this HMMP). Signage will be placed in a location easily accessible for public view and shall be maintained until all works are complete.

4.8 Prior to site clearance / construction works commencing an invasive weed removal exercise will be undertaken. Silver ragwort plants shall be removed by hand and material disposed of by an appropriate waste carrier at a suitably licenced landfill site. Care will be taken to remove all rootstock / associated soils which may be contaminated. Given that the vegetated shingle habitat has become established over hardstanding it is not considered that full scale removal of shingle is required; and the use of mechanical plant for the purposes of ragwort removal should be avoided to minimise potential impacts to retained areas of vegetated shingle. Works will be undertaken prior to the flowering and seeding period (i.e. May – July), as the removal after this can result in the unintentional spreading of seed.

4.9 Where possible (i.e. to the east / west and north of the footprint of the proposed huts) existing vegetated shingle will be retained and protected during construction by suitable fencing.

4.10 In order to try and preserve any invertebrate interest, prior to habitat clearance within the proposed footprint of the beach huts, a sweep netting exercise will be undertaken with the aim of translocating any captured invertebrates to adjacent retained habitat. Whilst this may not be wholly successful it may help to maintain invertebrate populations within retained areas of habitat. This should be done in the spring / summer period when most invertebrates are likely to be active / on-the-wing.

4.11 In order to maintain floristic species diversity within the retained sward, individual plants of rarer species (e.g. yellow horned poppy and rock sea lavender) will be translocated to retained and protected areas within the proposed beach hut site. In order to achieve this, plants will be hand dug and temporarily removed / stored (in a suitable substrate; for a maximum 48 hours period; although immediate transplantation should be possible) until any topographical remodelling of receptor areas has been completed (see below). Plants will then be translocated to receptor areas (north, east and west of the beach hut construction zone). Ground preparation should be minimal, with a loose sandy substrate being added to existing shingle to provide a suitable growing medium. Sufficient watering will be undertaken by the contractor to establish and maintain healthy plant growth. These works will be undertaken within a suitable seasonal window (i.e. plant translocation will be completed during the growing season, ideally April to July).

4.12 Remaining coastal vegetated shingle within the construction zone will be mechanically excavated (to a depth of c. 200mm where possible). This material will be stockpiled, with any 'clean' material being used to create a varied topography within retained areas. The supplementation material will only be spread in areas of bare substrate (i.e. where invasive silver ragwort has been removed); such as not to impact any native species of interest. Mounds of no more than 300mm in height will be created, in a varied pattern to maximise the variety of microclimates created. Any excess material will be deposed of by an appropriate waste carrier at a suitably licenced landfill site (as required). Material will not be translocated to the compensation site, to limit the potential spread of silver ragwort.

4.13 All works will be supervised by a suitably experienced ecologist, acting as an Ecological Clerk of Works (ECoW). The ECoW will undertake a site survey prior to the work occurring to identify areas where rarer plants will be translocated from and to. These areas will be clearly marked out on site, to ensure that direct impacts to do occur during the works.

Management

4.14 Following implementation, the retained / enhanced area of vegetated shingle will subject to low intervention management, with plant and seed establishment largely being maintained by natural processes. No additional watering is anticipated to be required past the establishment phase, with rain / sea spry providing sufficient moisture for the maintenance of vegetated shingle habitat.

4.15 The recolonisation of invasive species (e.g. silver ragwort) will be monitored annually; with additional removal by hand occurring each spring as necessary.

4.16 Disturbance impacts during the operational stage will be limited by provision of protective fencing (e.g. a knee rail / rope fence) and signage around areas of retained habitat, with the aim of educating beach hut users / general public about the importance of vegetated shingle habitats.

Proposed Compensation Site – Spending Beach

Objectives

4.17 To create a new area of coastal vegetated shingle habitat in at least 'moderate' condition (in line with Statutory Biodiversity Metric Criteria).

4.18 Re-profile an area of Spending Beach to achieve a natural slope and supplement with shingle material to provide suitable conditions for natural colonisation of maritime species / promote success of additional planting (where necessary).

4.19 Create and varied topography, to enable a diversity of microclimates for plant and invertebrate species to colonise.

4.20 To prevent the colonisation of invasive species (e.g. silver ragwort) to promote species diversity.

4.21 To encourage typical coastal flora in vegetated shingle through seeding / plug planting of appropriate species (including rarer species identified at the proposed beach huts site) and encourage natural recolonization where possible.

4.22 To integrate with similar proposals for habitat enhancement within adjacent areas of Spending Beach to the delivered under the sea defences scheme (Ref: BH2024/01605).

Prescriptions

Implementation

4.23 Criteria to be targeted to reach 'moderate' condition will focus on structural and native species diversity, natural colonisation and transitional zones, and scrub and non-native species control, as well as the potential to deliver better connections to coastal processed.

4.24 Reprofile the proposed compensation area to achieve a natural slope. This will be achieved through the removal of existing concrete revetment debris, mechanical reprofiling of the existing beach berm (top of foreshore) and supplementing with a mixture of shingle (2mm-20mm size) and sand (10-20%) content. This will be provided by Shoreham Port as part of their ongoing shingle replacement works along this part of the coast (undertaken to address longshore drift effects).

4.25 Where possible within the backshore (i.e. above the high tide line), provision of brash / shingle piles will help to diversity topography and provide sheltered areas for seed / plant establishment. These features will need to be secured to avoid deterioration as a result of storm wave action.

4.26 The compensation area will be protected from potential impacts from ongoing HGV movements on land to the north (required as part of ongoing port operations), by the installation of 'legio block barriers' (see the Compensation Land: Habitat Protection, Management and Enhancement Plan, provided in Appendix G).

4.27 Given the presence of existing coastal vegetated shingle in 'moderate' condition immediately adjacent to the compensation area, it is considered that natural colonisation by maritime species is likely to occur naturally providing suitable substrate conditions are present.

4.28 However, it may be that colonisation needs to be supplemented by seeding/ plug planting of additional native coastal species either via translocation of individual plants of key species from the proposed beach huts site, or from stock plants sourced locally (e.g. Kew/ Wakehurst Seed Bank). A suitable species list for the selection of native species (local prevenance) is provided in Appendix D. [N.B. Species lists are those considered to be suitable which my not colonise naturally; final species mix will be subject to availability of plant stock). Timescales for the implementation of plug planting will be dependent on plant stock availability; but it is envisaged that this will have been completed by summer 2026.

Management

4.29 Following implementation, newly created areas of vegetated shingle will be subject to low intervention management, with plant and seed establishment largely being maintained by natural processes. No additional watering is anticipated to be required past the establishment phase, with rain / sea spray providing sufficient moisture for the maintenance of vegetated shingle habitat.

4.30 The recolonisation of invasive species (e.g. silver ragwort) will be monitored annually; with additional removal by hand occurring each spring as necessary.

4.31 Following monitoring (see herein), should establishment of coastal vegetated shingle habitat not be progressing as anticipated (i.e. condition criteria are not being met) then adaptive management practices will need to be considered (e.g. the need for further shingle supplementation, additional planting / seeding / additional measures to prevent recolonisation of silver ragwort). In addition to formal monitoring, hut tenants will be made aware of the importance of the vegetated shingle habitat and the need to protect it from indirect impacts (e.g. trampling / littering etc).

5.0 MONITORING

5.1 In line with the requirements of Condition 03 of the planning permission a programme of monitoring has been proposed in order to assess the efficacy of proposed landscaping and management works in increasing biodiversity and opportunities for local wildlife at the Site. This monitoring will also ensure that management is being undertaken in accordance with prescriptions set out herein.

5.2 It is proposed that a five-year timeframe would provide a reasonable opportunity to detect habitat/species changes and to therefore allow any remedial action to be taken. Monitoring visits are proposed in Year 0, 1, 3 and 5, with monitoring visits during these years in July (to allow comparison with the pre-intervention baseline survey data).

5.3 Three key monitoring elements are proposed, to be undertaken by suitably qualified persons (e.g. an experienced botanical surveyor equivalent to FISC[3] Level 4), where appropriate:

- Coastal Vegetated Shingle monitoring:
    - Quadrat sampling to detect changes in species diversity
    - Habitat Condition Assessment (using the Statutory Biodiversity Metric criteria)

- Fixed-point photography:
    - To detect structural changes in existing and created habitats over time

Coastal Vegetated Shingle Monitoring

Methods

5.4 A simple, repeatable monitoring regime is proposed which would include a general assessment of vegetated shingle habitat, as well as sampling 10 randomised quadrats across the Site (5 within the retained habitat alongside the beach huts and 5 within the compensation area), each of which would provide a quantitative assessment of vegetated shingle habitat development.

5.5 The following quantitative factors will be assessed:

- Herb Diversity (count no. species and % cover)
- Grass Diversity (count no. species and % cover)
- Undesirable 'weed' cover (species and % cover)

5.6 A Habitat Condition Assessment (HCA) will also be undertaken using the standard Statutory Biodiversity Metric criteria for coastal vegetated shingle (as provided in Appendix C).

[3] Field Skills Identification Certificate; from the Botanical Society of the British Isles

5.7 In addition to the above, a qualitative assessment of the entire habitat areas will be made, with the aim of informing any management interventions / adaptations.

Outcomes

5.8 It is proposed that a positive outcome for the vegetated shingle monitoring would be represented by an increase in herb and grass diversity, as well as the reduction or absence of undesirable weed cover, a high species index score and a habitat condition score of 'moderate'.

Fixed-point Photography

Methods

5.9 A total of four locations (two in each of the compensation areas) will be selected for fixed point photography undertaken in May and August.

5.10 The exact location, azimuth and height of photographs will be recorded to allow within- and between-year comparison of habitat establishment, structure and diversity (through qualitative assessment of 'textures' and colours).

Outcomes

5.11 It is proposed that a positive outcome for each of the selected habitats/features would be a general increase in the structural diversity, texture and colour of the photographs. A negative outcome would be represented by the dominance of single species (i.e. dominance of single texture/colour) such as invasive plant species (e.g. silver ragwort).

Reporting and Remedial Actions

5.12 A standardised Ecological Monitoring Form Template will be completed on each monitoring visit in order to allow information and recommendations to be disseminated effectively (see Appendix H).

5.13 It is proposed that the completed monitoring form and summary text will be sent via collective email communications to the following parties for their information and to make any relevant comments:

- Shoreham Port/or the third party management company
- Sussex Wildlife Trust
- Adur & Worthing Councils (Adur District Council)

5.14 Where monitoring highlights any negative trends (e.g. in diversity / extent of coastal plant species establishment / evidence of physical damage / littering etc), or where the above parties have concerns over the result of monitoring, remedial action will be triggered to ensure any required changes to management. It is proposed that, as the local planning authority, Adur District Council enforce any remedial action in line with Condition 03, in consultation with the relevant parties. This could include some of the following actions:

- Change in habitat management where habitat degradation occurs
- Compensatory measures for habitat damage/loss, and/or
- Further monitoring requirements

Management & Monitoring Work Schedule

Work Schedule

5.15 A schedule of work is provided in Appendix E, giving a timetable for management actions for the first five years. Before the end of this HMMP period the management company will review these prescriptions, in consultation with interested parties and provide an updated HMMP for on-going management.

Stakeholder Coordination

5.16 It is envisaged that initial works both on the proposed beach hut and compensation sites will commence in May / June 2025. At present, there is no timeframe for the adjacent habitat compensation / enhancement scheme at Spending Beach in relation to the sea defences scheme. However, the implementation of each compensation scheme will be coordinated such that they do not result in adverse impacts on one another. An access route between the two schemes has been maintained, with the compensation area for the Beach Huts scheme being protected by legio bricks (see Appendix G). Shoreham Port shall coordinate beach reprofiling / habitat creation works to ensure that that this happens.

Appendix A

Habitats Plan (beach Huts Site)

(CSA/6818/100)



Site boundary

Coastal vegetated shingle (s3b)

0 15 30 m

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Project	Land at Shoreham Port, Shoreham-by-Sea	Date	Nov 2023	Drawing No.	CSA/6818/100
Drawing Title	Habitats Plan	Scale	Refer to scale	Rev	-
Client	Jordan Wyatt, Shoreham Port	Drawn	LG	Checked	CC

Appendix B

Proposed Habitat Compensation Site Plan

(CSA/6818/101)



N

Site boundary

Artificial unvegetated unsealed surface

0 25 50 m

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Project	Land at Shoreham Port, Shoreham-by-Sea	Date March 2024	Drawing No. CSA/6818/101
Drawing Title	Proposed Habitat Compensation Site	Scale Refer to scale	Rev -
Client	Jordan Wyatt, Shoreham Port	Drawn LG	Checked CC

Appendix C

Habitat Condition Criteria: Coastal Vegetated Shingle

(Statutory Biodiversity Metric)

Habitat Condition Criteria: Coastal Vegetated Shingle

(Statutory Biodiversity Metric)

A. The parcel represents a good example of its specific habitat type, with characteristic indicator species present in the typical successional stages, transitions and or mosaics, at sufficient cover and frequency to be a good example;

B. Vegetation structure (sward height, variation, zonation) is varied and not uniform;

C. Naturally open ground or bare surfaces are present as part of a sequence of colonisation and succession;

D. Coastal processes needed to support the habitat are functional and are not modified by hard engineering or other forms of negative intervention;

E. The landform reflects the interaction of coastal process and geology, and there is a varied topography present supporting the relevant range of habitat types;

F. There is an absence of non-native species (as listed on Schedule 9 of WCA). Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area;

G. Any scrub (including bramble *Rubus fruitcosus agg*.) present accounts for less than 10% of the area within the habitat or bare substrate matrix;

H. Water quality and quantity (for example, seasonal fluctuations in dune slacks or seepages on cliff slopes) is sufficient to support the range of water-dependent parts of the habitat.

Appendix D

Native species suitable for supplementary planting

Scientific Name	Common Name
Glaucium flavum	Yellow horned poppy
Malva arborea	Tree mallow
Plantago coronopus	Buck's-horn plantain
Solanum dulcamara	Bittersweet
Anthyllis vulneraria	Kidney vetch
Medicago lupulina	Black medic
Limonium vulgare	Rock sea lavendar
Silene uniflora	Sea campion
Lotus coniculatus	Birds-foot-treffoil
Atriplex laciniata	Frosted orache
Crepis vesicaria	Beaked hawk's-beard
Beta vulgaris ssp. Maritima	Sea Beet
Crambe maritima	Sea Kale
Lathyrus japonica	Sea pea
Plantago coronopus	Buck's-horn plantain
Plantago lanceolata	Ribwort plantain
Crithmum maritimum	Rock samphire
Trifolium sp.	Clover
Tripleurospermum inodorum	Scentless mayweed
Tripleurospermum maritimum	Sea mayweed
Elymus pungens	Sea couch

Appendix E

Work schedule

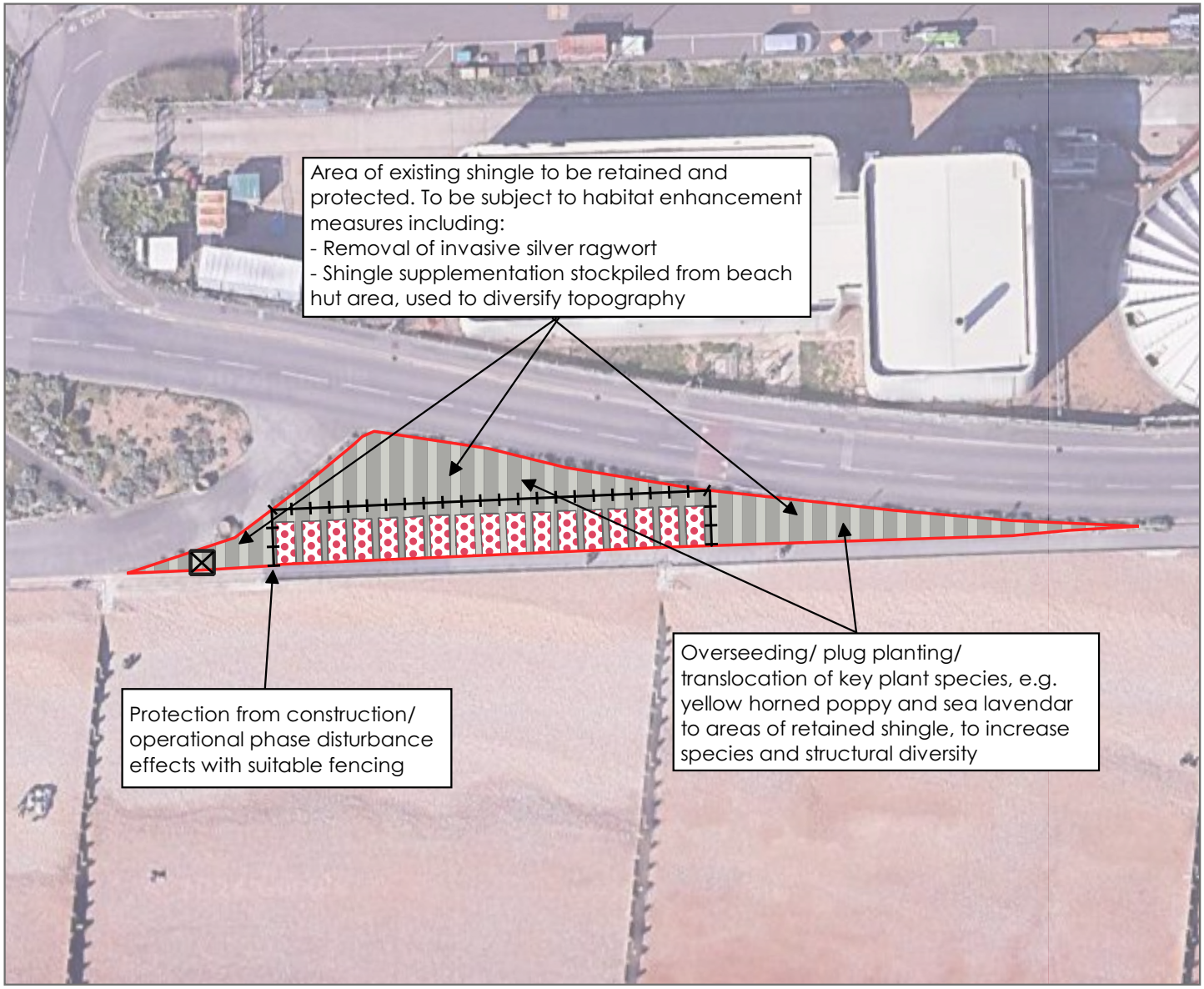
Table 1. Work Schedule: Coastal Vegetated Shingle Management and Monitoring

	Feature	Initial works	Year 1	Year 2	Year 3	Year 4	Year 5
	Coastal vegetated shingle (on-Site; retained area around beach huts)	Invasive weed removal. Silver ragwort removed by hand and disposed at suitably licenced landfill site (prior to flowering / seeding in May- July).	Annually, as necessary (spring); take further remedial action as required	Annually, as necessary (spring); take further remedial action as required	Annually, as necessary (spring); take further remedial action as required	Annually, as necessary (spring); take further remedial action as required	Annually, as necessary (spring); take further remedial action as required
		Translocation of plants and invertebrates from Site to retained/protected areas. Loose sandy substrate added to shingle to provide suitable growing medium, sufficient watering by contractor (April-July).	Inspect regularly within first growing season to ensure establishment	Inspect annually (spring); take further remedial action as required	Inspect annually (spring); take further remedial action as required	Inspect annually (spring); take further remedial action as required	Inspect annually (spring); take further remedial action as required
		Mechanical excavation of shingle (depth of 200mm where possible) and stockpiled, with 'clean' material used to create varied topography in retained areas where silver ragwort has been removed. Excess to be disposed of a suitably licenced landfill.	Assess the need for further shingle material annually.	Assess the need for further shingle material annually.	Assess the need for further shingle material annually.	Assess the need for further shingle material annually.	Assess the need for further shingle material annually.
		Install protective fencing (during construction and operational phases).	Inspect annually; repair damaged fencing as required	Inspect annually; repair damaged fencing as required	Inspect annually; repair damaged fencing as required	Inspect annually; repair damaged fencing as required	Inspect annually; repair damaged fencing as required
		Monitor success of the above management actions (quadrat survey, HCA and fixed-point photography)	Annually in July	N/A	Annually in July	N/A	Annually in July

	Coastal vegetated shingle (compensation Site)	Reprofile beach to achieve natural slope. Remove existing concrete revetment, supplement with shingle (2mm- 200mm) and sand (10-20%)	Monitor the need for further reprofiling annually	Monitor the need for further reprofiling annually	Monitor the need for further reprofiling annually	Monitor the need for further reprofiling annually	Monitor the need for further reprofiling annually
		Provision of brash/shingle piles Secured to avoid deterioration; supplement as necessary.	Inspect annually	Inspect annually	Inspect annually	Inspect annually	Inspect annually
		Installation of legio block barriers; replace as necessary	Inspect annually	Inspect annually	Inspect annually	Inspect annually	Inspect annually
		Invasive weed removal. Silver ragwort removed by hand and disposed at suitably licenced landfill site (May- July)	Annually, as necessary (spring)	Annually, as necessary (spring)	Annually, as necessary (spring)	Annually, as necessary (spring)	Annually, as necessary (spring)
		Supplementary seeding/ plug planting of additional native coastal species, if necessary (if natural colonisation is limited)	Replace failed specimens as required	Replace failed specimens as required	Replace failed specimens as required	Replace failed specimens as required	Replace failed specimens as required
		Monitor success of the above management actions (quadrat survey, HCA and fixed-point photography)	Annually in July	N/A	Annually in July	N/A	Annually in July
	Protective fencing and signage (both sites)	Check items for damage/wear and tear and repair as appropriate	2 times annually	2 times annually	2 times annually	2 times annually	2 times annually

Appendix F

Habitat Protection, Management and Enhancement Plan
(CSA/6818/103)



N

Site boundary

Protective fence

Interpretation board

0 20 40 m

CSA environmental

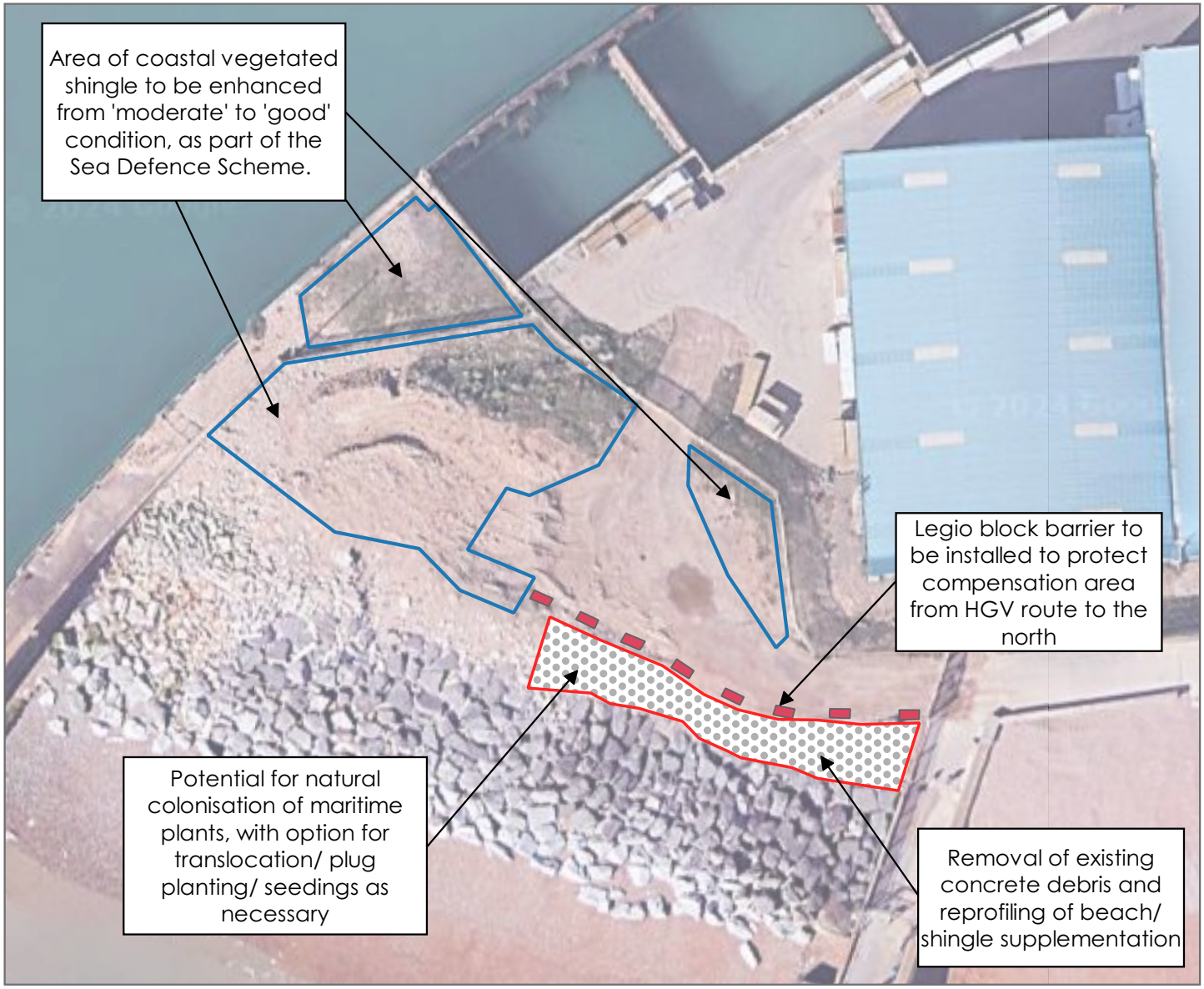
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Project	Land at Shoreham Port, Shoreham-on-Sea	Date Nov 2024	Drawing No. CSA/6818/103
Drawing Title	Habitat Protection, Management and Enhancement Plan	Scale Refer to scale	Rev -
Client	Shoreham Port	Drawn CC	Checked LG

Appendix G

Compensation Land: Habitat Protection, Management and Enhancement Plan (CSA/6818/104)



CSA environmental

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Project	Land at Shoreham Port, Shoreham-on-Sea	Date Nov 2024	Drawing No. CSA/68148/104
Drawing Title	Compensation land- Habitat Protection, Management and Enhancement	Scale Refer to scale	Rev -
Client	Shoreham Port	Drawn CC	Checked LG

Appendix H

Coastal Vegetated Shingle Habitat Condition Assessment

& Species Diversity Monitoring Forms

HABITAT CONDITION ASSESSMENT MONITORING
[POST CONSTRUCTION]

SITE & PROJECT NUMBER:	6818 Shoreham Port
SITE LOCATION	Beach Huts / Compensation Site (Spending Beach)
FREQUENCY OF SITE VISITS:	Annually for years 1 to 5 post intervention
ACCESS ARRANGEMENTS:	Access arrangements via Shoreham Port
RELEVANT PLANS/REPORTS:	Habitat Management and Monitoring Plan (CSA/6818/02)
MONITORING DATE:	
SURVEYOR:	
YEAR POST DEVELOPMENT:	

Condition Criteria			**Passed?**	**Notes – any action required**
Coastal Vegetated Shingle	A	The parcel represents a good example of its specific habitat type, with characteristic indicator species present in the typical successional stages, transitions and or mosaics, at sufficient cover and frequency to be a good example.1 **Note - this criterion is essential for achieving Good condition.**		
	B	Vegetation structure (sward height variation, zonation) is varied and not uniform.		
	C	Naturally open ground or bare surfaces are present as part of a sequence of colonisation and succession.		
	D	Coastal processes needed to support the habitat are functional and are not modified by hard engineering or other forms of negative intervention.		

Condition Criteria			Passed?	Notes – any action required
	E	The landform reflects the interaction of coastal processes and geology, and there is a varied topography present supporting the relevant range of habitat types.		
	F	There is an absence of invasive non-native species2 (as listed on Schedule 9 of WCA3). Combined cover of species indicative of suboptimal condition4 and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.		
	G	Any scrub (including bramble Rubus fruticosus agg.) present accounts for less than 10% of the area within the habitat or bare substrate matrix. Blocks of scrub or woodland, which might be desirable in their own right should be classified and mapped separately.		
	H	Water quality and quantity (for example, seasonal fluctuations in dune slacks or seepages on cliff slopes) is sufficient to support the range of water-dependent parts of the habitat.		
	Essential Criteria Passed?			
	No Criteria Passed			
	Condition Good (3) Passes 7 or 8 criteria including essential criterion A			
	Condition Moderate (2) Passes 5 or 6 criteria; OR Passes 7 criteria excluding essential criterion A			
	Condition Poor (1) Passes 4 or fewer criteria			

SPECIES DIVERSITY MONITORING
[POST CONSTRUCTION]

SITE & PROJECT NUMBER:	6818 Shoreham Port
SITE LOCATION	Beach Huts / Compensation Site (Spending Beach)
FREQUENCY OF SITE VISITS:	Annually for years 1 to 5 post intervention
ACCESS ARRANGEMENTS:	Access arrangements via Shoreham Port
RELEVANT PLANS/REPORTS:	Habitat Management and Monitoring Plan (CSA/6818/02)
MONITORING DATE:	
SURVEYOR:	
YEAR POST DEVELOPMENT:	

Site ref & name		**DAFOR Scale:** Dominant (51-100%) Abundant (31-50%) Frequent 16-30% Occasional 6-15% Rare 1-5% Not Present 0%																			
Date																					
Surveyors		**Four 1x1m quadrats to be conducted at each survey point**																			
Latin name	**Common name**	**Habitat type & parcel reference:** e.g. F1, F2																			
		Survey point 1				**Survey point 2**				**Survey point 3**				**Survey point 4**				**Survey point 5**			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
		w3w:				w3w:				w3w:				w3w:				w3w:			
		Photo:				Photo:				Photo:				Photo:				Photo:			

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