



Shorne Marshes Habitat Enhancement Project
Construction Environmental Management Plan (Biodiversity) Shorne Marshes PP-
12831173



RSPB Shorne Marshes (RSPB,2015)

Authors Note

Will Tofts – Warden, RSPB North Kent Marshes

Contents

1.0 Introduction	3
1.1 Aims and objectives	3
1.2 Current site conditions	3
2.0 Duration of works	4
2.1 Operating hours	4
2.2 Construction programme	4
3.0 Welfare arrangements	4
4.0 Access	4
4.1 Vehicle parking	5
4.2 Speed Limits	5
5.0 Identification of ‘biodiversity protection zones’	5
6.0 Locations and timings of sensitive works	6
7.0 Risk assessment of potentially damaging construction activities	6
8.0 Practical measures	10
8.1 Signage and fencing	10
8.2 Biosecurity Method Statement	10
8.3 In-field movement of construction vehicles & materials method statement	11
8.4 Post-enhancement and engineering works recovery	12
9.0 Responsible persons	12
9.1 Roles and responsibilities	13
Appendices	14
Appendix I Map of access and proposed compound areas including welfare units	14
Appendix II Map of in-field movement of construction vehicles	16
Appendix III Maps of known invasive aquatic plant locations	17

1.0 Introduction

RSPB Shorne Marshes sits to the east of Gravesend and the Milton Firing range, with Higham Bight and a large industrial operation of aggregates to the west, The Thames to the north, and the Thames & Medway Canal and surrounding agriculture to the south mostly arable of fruits and crops. The site contributes to a wider landscape of linked reserves along the Greater Thames Estuary – comprising The South Thames and Estuary Site of Special Scientific Interest (SSSI). Since October 2000, the site has been managed by the Royal Society for the Protection of Birds (RSPB).

Over the last 20 years, RSPB have worked hard to restore and enhance the site, so much so that the grazing marshes are very important site for breeding waders – particularly lapwings, redshanks and oystercatchers. The importance of Shorne is exemplified by its status one of last remaining breeding havens for snipe in Kent. As such, Shorne Marshes has been granted protected status, having been designated as a Ramsar site (an international designation for globally important wetlands) and as a Site of Special Scientific Interest (SSSI). This is due to its importance for an assemblage of breeding and wintering wildfowl and it acts as a key feeding pitstop for birds using the Greater Thames in their twice annual passage along the North Atlantic Flyway.

A new project aims to enhance the marsh habitat, in order to boost biodiversity and improve the sites resilience to climate change. Through landscaping, we will restore of 70ha of wetland grazing marsh by creating hydrological features to enhance the wetland habitat. This will primarily include the creating of pools, scrapes and rills to help spread and retain water within the site thereby increasing feeding and breeding habitat extent and quality. When complete, this will allow Shorne Marshes to realise its full potential as wetland nature reserve worthy of its designations and suitable for many rare species appropriate to this habitat.

1.1 Aims and objectives

Aim of CEMP (Biodiversity)

The preservation of key habitats and species during the delivery of habitat improvement groundworks.

Objectives

- To ensure no breach of wildlife legislation occurs on site for the duration of the development.
- To protect vulnerable and designated populations of flora and fauna for the duration of the construction works.
- To minimise damage to habitats within the improvement area.

1.2 Current site conditions

This CEMP (Biodiversity) has been prepared based on ecological information collected between 1933-2021 and intimate site knowledge gained via management and monitoring of the site since 2000. If on visiting the site, nearer the time of construction, the Ecological Clerk of Works (ECoW) considers that the baseline has changed, they may approve changes to the mitigation measures as appropriate.

2.0 Duration of works

We will aim to complete works from 1st August – 31st August 2024. The delivery window is limited due to tight controls on access to site due to the proximity of the Met Police Firing Range and the works area being within the fall out zone of it. Free access to site is guaranteed between 1st August and 31st August 2024.

The RSPB will arrange access for site visits and the preparation works before the August window to prepare for the works. There is the outlying possibility that the works will not be completed by the end of the August window, in which case we'd have to arrange access on a case by case basis with the training centre. All of the works are anticipated to be completed by the end of February 2025 at the latest.

It should be noted that no work on the ground will be conducted during the bird breeding season of March to July. This is to avoid disturbing breeding birds resulting in the abandonment of nests with eggs and/or chicks which constitutes an offence under the Wildlife and Countryside Act 1981.

2.1 Operating hours

Work involving plant will be restricted to Monday and Saturday, between the hours of 08:00 and 18:00. Weekends have been included due to the time-limited access to the site described above.

Work which does not involve the use of heavy machinery, and the subsequent creation of intrusive noise, may take place outside of these hours.

2.2 Construction programme

The detailed construction programme will be made available for review in the site office. The indicative key dates presented in the programme are as follows but are subject to change:

Key Stages	Date
Project start	01 Jul 2024
Site access	01 Aug 2024
Vegetation management commences	01 July 2024
Groundworks contractors mobilised and groundworks commence	01 Aug 2024
Groundworks completion	31 Aug 2024
Full project completion	28 February 2025 (not later)

3.0 Welfare arrangements

Welfare facilities will be provided in the form of welfare units, which will be situated at the proposed compound locations shown in the maps presented in Appendix I.

The welfare units will be brought onto site prior to the commencement of any works and will be removed following the conclusion of the groundworks. As works progress and at the discretion of the ECoW, welfare units may be moved closer to active areas providing that the new placement and associated vehicular movements adhere to the aims of this CEMP(B).

4.0 Access

Access to the site is restricted year-round due to the proximity of the Met Police Firing Range. Free access to site is guaranteed for the period of works, between 1st August and

31st August 2024. The RSPB will arrange access for site visits and any preparation works before the August window as necessary. If the contractor requires to complete work outside these restriction, they will arrange access on a case by case basis with the training centre.

The site has a single access location which is shown in Figure 1. Entrance to the site is via Shornemead Railway crossing at the end of Queens Farm Road. After the crossing access is via a concrete track that cut the RSPB reserve in two and through a black metal security gate.

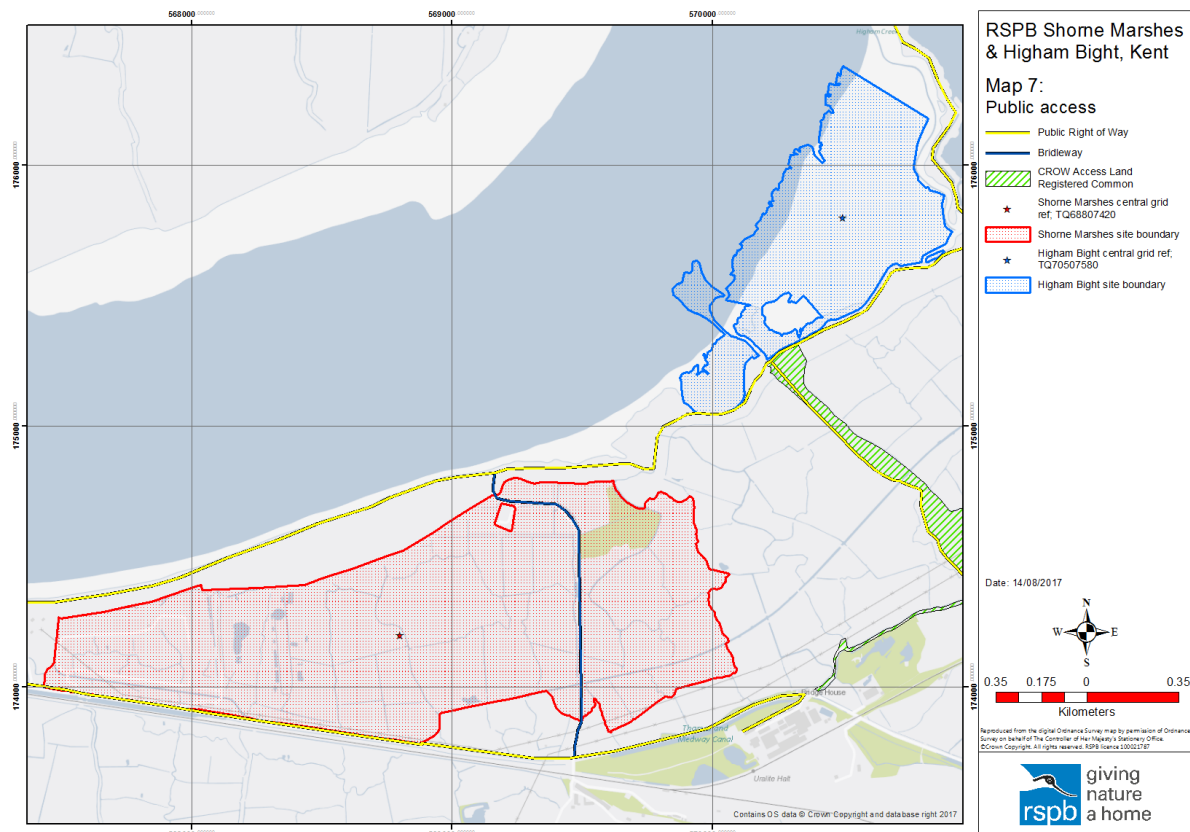


Figure 1: Access to site

4.1 Vehicle parking

All operators will park their vehicles within the boundaries of the site, off the public highway. As such, there will be no increase in parked traffic on the public highways adjacent to the site and PRoW will be kept clear at all times.

4.2 Speed Limits

The access track to the site is a public right of way therefore extra care must be taken when driving to site. Speed of vehicles should not exceed 10mph and hazard lights should be used.

5.0 Identification of 'biodiversity protection zones'

Whilst the whole site is sensitive, the protection of biodiversity began in the design phase of the project with large and/or specific areas left undisturbed such as the western part of the marsh (See Design and Access statement) and the fields with scrub in it.

During habitat enhancement and engineering works, the vast majority of biodiversity can be protected by avoiding seasonally sensitive areas and where necessary using prescribed access routes for contractors to move around site and conduct their activities in order to avoid these areas. Access routes into and around the site have been designed to ensure that movements to deliver the scheme are kept to a minimum and least sensitive areas are avoided, as necessary. Assisted by RSPB staff, the ECoW will design, adapt and monitor activities to ensure any prescribed routes and no access sensitive areas are known and being adhered to. The locations of all routes are shown in the maps presented in Appendix II.

Where necessary, areas habitat considered highly sensitive or at risk (e.g. due to being in close proximity to works access points) will be further protected from construction related impacts through the installation of temporary fencing and signage as appropriate (see section 8.1 for more information).

New habitat will be created as part of the enhancement and engineering works resulting in improving and expanding the usable area for breeding and wintering birds and increasing habitat suitability for reptiles, amphibians, small mammals, invertebrates and flora both terrestrial and aquatic. This will create valuable habitat and connect into adjacent habitat areas, thus improving biodiversity value across the site.

6.0 Locations and timings of sensitive works

The following construction activities will be required as part of the works. The timeframes are based upon the most suitable time of year to minimise disturbance, particularly to breeding birds. The ecological risk of each activity and mitigation measures, can be found in Table 1.

Table 1: The time of year during which ecologically sensitive works will be carried out and by whom.

Task	Timeframe	Location	Duration	Responsibility
Vegetation management within works areas.	Between July and August 2024.	Site wide but limited to works areas and associated access to those areas.	One month prior to the start of groundworks and maintained during the growing period within the groundworks phase.	RSPB staff on behalf of contractors, supervised by ECoW (with assistance from RSPB staff).
Groundworks contractors mobilised and groundworks commenced within works areas.	August 2024 (but with potential to extend at short intervals up to end February 2025).	Site wide but limited to works areas and associated access to those areas.	One month, subsequent to initial vegetation clearance.	Contractors, supervised by ECoW (with assistance from RSPB staff).

7.0 Risk assessment of potentially damaging construction activities

The following construction activities will be required as part of the works. The ecological risk of each activity has been assessed and measures for reducing the impact are detailed below

(Table 2). The time of year during which ecologically sensitive works will be carried out, along with their location, can be found in Table 1.

Table 2: Impacts on the reserve's species and habitats and mitigation for the delivery of the scheme.

Works	Potential Impacts	Measures to Minimise Impacts
Vegetation management: Removal of excess vegetation from the works areas and access routes will be required prior to the start of construction.	While designed to protect wildlife, this work has the potential to impact individual small mammals, late breeding birds, reptiles, amphibians, invertebrates and flora of conservation concern.	Before groundworks commence and only where necessary, sward heights will be reduced to approximately 50mm height within the footprint of each new feature, along relevant access routes. This will encourage fauna present to disperse into unaffected areas. Vegetation will be maintained as very low to ensure that these areas remain unattractive to wildlife until features have been created, restored or repaired. Surveys and site knowledge of the location of flora of conservation concern has been factored into the design ensuring that such plants will not be affected. To avoid impacts to nesting birds, vegetation management has been planned to be conducted outside of the bird nesting period of March to June inclusive hence the July start. It is possible that some residual nesting will still be in progress. To manage this eventuality, the results from the programme of Breeding Bird Surveys undertaken between March and June will be analysed to inform whether breeding activity has been identified in the locations where vegetation will be managed. Even if this analysis shows no points of concern, supplemental surveys will be undertaken just prior to the commencement of the management activities. If a nest is identified, a buffer zone will be established around the nest (buffer distance to be determined based on site conditions). No works will be permitted within this buffer zone until all young have fledged, as confirmed by the ECoW. To ensure that the activity does not cause any harm to reptiles and small mammals (in particular) which may be present, initial vegetation management will be staged using tractor mounted

		mowing equipment at low speed via strip-cutting. For vegetation greater than 200mm, two cuts will be employed. The first cut will be c.200mm with the second cut at c.50mm. Once all first cuts have been undertaken, the second pass over the first cut will commence from the same place as the initial cut was started and follow the same sequencing as the first cuts. For vegetation up to 200mm only one cut to 50mm is necessary. For linear footprints (e.g. rills) and access routes, strip-cutting must commence from one side. Where the footprint is adjacent to a ditch, cutting will commence from the ditch side. All ditch side cutting should be as close to the ditch as <u>safely</u> possible. For footprints of scrapes, pools and islands, strip-cutting must begin at the centre of the footprint and work outwards thereby not corralling animals into an ever decreasing patch of vegetation that will also end up being cut. The ECoW will ensure that talks are given to all contractors working on the reserve. These will cover all potential protected species, invasive species risk management and sensitive habitats relevant to the site/works and what to do should any such flora or fauna be discovered during the vegetation management works.
Groundworks: Use of heavy machinery to create various habitat features and associated infrastructure.	1. Machinery movements and construction noise will likely cause the following impacts without appropriate mitigation: • Disturbance to: ▪ Breeding, passage and wintering birds. ▪ Non-avian species. • Injury or killing/destruction of: ▪ Nests/eggs/chicks of ground-nesting birds. ▪ Non-avian species.	1. As described above before groundworks commence, sward heights will be reduced around works areas, access points and access routes which will encourage small mammals and reptiles present to disperse into undisturbed areas of the reserve. Machinery movements around the site, including in works areas, will be prescriptive (see Section 8.3, 'In-field movement of construction vehicles & materials method statement') to keep disturbance and damage to a minimum, and to maintain non-work areas of

	Degradation/loss of habitat. 2. Groundworks around existing waterbodies will may lead to an accidental spread of non-native invasive species, in particular <i>Crassula helmsii</i>	habitat as undisturbed refuge areas for wildlife. To avoid impacts to breeding birds, the groundworks will be undertaken in August 2024 (and potentially up to February 2025 at the very latest). Whilst the aim is to finish groundworks by the end of August, events may require work into subsequent months to allow completion of the programme within the tight access stipulations as defined by the Met Firing Range. Works will be undertaken during the passage season, but the nature and present quality of the habitat in combination with the availability of other habitat at the site within in the wider Thames Estuary will provide sufficient, undisturbed refuge areas – especially given extensive habitat improvements having taken place over 2,000ha of wetland habitats in the Greater Thames Estuary between 2021-23. The ECoW will ensure that toolbox talks are given to all contractors working on the reserve. These will cover any potential protected avian and non-avian species that they may encounter within the site and what to do should any be discovered during the groundworks. 2. Contractors working in areas where invasive plants are present will be briefed as to the protocol (see section 8.2 'Biosecurity method statement') for managing this work and the associated risks. Where necessary, contractors will work with RSPB staff to avoid unnecessary disturbance and ensure that the biosecurity method statement is adhered to. The ECoW will ensure that toolbox talks are given to all contractors working on the reserve. These will cover the identification of invasive species and the biosecurity measures to be followed on site and before leaving the reserve (covered in the methods statements in Section 8).
--	--	---

General construction works: The delivery of the scheme's enhancement and engineering works has the potential to cause visual, vibration or noise disturbance on the reserve and surrounding area. Dust, emissions and accidental spillages may negatively impact the habitats and protected species present within and in close proximity to the reserve.	Damage to habitats and protected species may occur from accidental or uncontrolled movement of construction vehicles or personnel.	All contractors working on the site will be given a toolbox talk about protected species and habitats that they may encounter within the site. In the event that any protected species are found during construction works, all works will stop immediately, and advice sought immediately from the ECoW on how to proceed. Materials will be stored in a secured compound until they are required for use to avoid any unnecessary dust and spillages. Fuel, chemical storage and bowsters to be bunded or double skinned to avoid spillage and locked to avoid tampering by third parties. Access to works areas are clearly defined and will be strictly adhered to so as to reduce disturbance (see Appendix II). A 10mph site speed limit will be in force and adhered to at all times. Excessive dust is not expected to be an issue based on the timescales of delivery, the vegetation cover on site and the site speed limit will any incidences.
---	---	---

8.0 Practical measures

8.1 Signage and fencing

The reserve is already closed to the public but some rights of way will be shared for access. Site compounds will be secured using temporary fencing. Where required, pedestrian and vehicle crossing and access gates will be incorporated to meet the site and health and safety regulation requirements.

Site information will be displayed at the site office.

Avalon barriers (or equivalent) will be used to fence off sensitive ecological areas or hazards as required.

8.2 Biosecurity Method Statement

The main ecological risk at the site is the spread of *Crassula Helmsii*, a non-native invasive, aquatic weed. Management is in place across the site to control it but some pockets remain, particularly in the ditches to the south of the works area. Therefore, there is a biosecurity risk of spreading, *Crassula Helmsii* while working in, and around, ditches and waterbodies.

The best way to avoid its spread is thorough inspection of clothes/equipment directly exposed to an infected watercourse, coupled with cleaning and/or drying out.

Control of the species is similar and the protocol below should be applied to avoid the spread of both plants. The RSPB will make contractors aware of ditches containing *Crassula Helmsii* and include this within pre-construction information. A map of the known invasive aquatic plant locations is presented in Appendix III.

The following protocol needs to be followed on site to avoid the spread of the species identified above:

- Contractors are to include control measures in risk assessments and method statements.
- Workers are to ensure that any footwear and outer clothing (e.g. over trousers) are free of accumulated vegetative matter (including leaf litter) and excess mud/soil. Where practical, clean footwear etc. at the end of the day with a brush and clean water.
- All personnel on site should be vigilant when moving into, away and between landholdings. Any equipment and machinery that is moving to a new area of work should be cleaned of accumulated vegetative matter and excess mud/soil. As much mud and vegetation as possible should be removed from machinery using a stick or brush before leaving an area. Special attention should be paid to areas that have come into contact with any waterbodies including buckets, tracks and mudguards, where such materials are likely to accumulate. As much as possible try and leave excess mud and vegetative fragments at their place of origin.
- Workers should avoid areas containing *Crassula Helmsii* to reduce contamination, taking special care to avoiding coming into contact with the water unless absolutely necessary. When working in or near affected ditches, workers should inspect and clean their clothing and equipment and take care to dry these thoroughly for at least 48 hours before reuse.
- Due to the isolated nature of work locations, drivers working in affected areas should carry a makeshift 'biosecurity kit'. Such a kit will include a water container, stiff brush and a bowl/bucket large enough to insert a boot. If a generator is available, a portable pressure washer would be of great benefit.
- Where practical, the number of vehicle movements that occur in and around affected ditches should be minimised. All contractors and vehicles should be familiar with locations of the invasive aquatic plants and use the identified routes from the 'In-field movement of construction vehicles method statement' (in Appendix II) to further limit potential spread of any biosecurity threats.
- At the end of working in an affected area or, when moving machinery offsite, all equipment, clothing (e.g. waders, boots, trousers etc) and machinery that has come into contact with water containing the plants should be checked and cleaned of any vegetative material, excess mud and aquatic organisms using a stick or stiff brush. Particular attention should be paid to seams which may retain debris and associated organisms for longer periods of time. Once offsite, workers should clean and disinfect all equipment and machinery at the earliest opportunity. This is especially important if you are travelling to new sites and to unaffected water bodies.

8.3 In-field movement of construction vehicles & materials method statement

The following traffic management measures should be observed:

- The site entrance will be maintained and kept clean and clear to ensure no mud is left on the live highway or accessing water courses as a direct result of the works.
- The site speed limit of 10mph will be strictly adhered to.
- Vehicles tracking across the site and works areas will be kept to the minimum area necessary, using the access routes defined in Figure 1 and Appendix II. All movement routes are defined in the “map of in-field movement of construction vehicles” and should be adhered to at all times.
- Routes to works areas are based on the principal that work will begin at the furthest point and work backwards over their entrance tracks, using a cut and fill approach.
- Last cut to sward height in works areas should be taken at least 48 hours before construction begins (reduced to approximately 50mm) and maintained at this height until works have ceased at the location. For linear features, this includes a parallel access strip to allow for the safe working of construction vehicles.
- Construction vehicles and workers are not permitted to access areas of the site beyond their works areas to minimise disturbance to wildlife and archaeology – particularly in areas of long grass.
- Stockpiling of groundworks materials and machinery will be kept to the minimum and, as far as possible, these should be in pre-defined compound areas. When stockpiling of materials and machinery is absolutely necessary workers will use the least sensitive areas (e.g. hard standing areas) which are at least 10m away from waterbodies. Before use, they will have already been cleared of vegetation and other debris, as per the protocols defined in this CEMP(B).
- Remove all unused materials immediately from locations as soon as works are complete and the materials are no longer required. This also applies at a site level.

8.4 Post-enhancement and engineering works recovery

The following management measures will be implemented to allow recovery of the site post-construction:

- Rotovate any significant rutting caused by vehicle movements.
- Allow vegetation to recolonise via natural regeneration.
- Undertake the enhanced surface water regime as soon as feasible.
- Undertake grazing and topping as per the reserve’s management plan as soon as feasible.

9.0 Responsible persons

Relevant persons working on the project (where known), their role and contact details are given below, alongside relevant emergency information. Emergency action plans will be given to workers on site.

- **Principal Contractor:** TBC
- **Principal Designer:** Julian Nash, RSPB – 0782535855
- **Ecological Clerk of Works:** Julian Nash, RSPB – 0782535855
- **RSPB Project Manager:** Will Tofts - 07881352506

- **RSPB Site Warden:** Will Tofts - 07881352506
- **RSPB Assistant Warden:** Bradley Andrews- 07594 083232
- **RSPB Northward Hill Office:** 01634 222480
- **Graziers:**
 - Keith Loveridge (Grazier- Shorne Marshes) – 07850224330
 - Jamie Loveridge (Grazier- Shorne Marshes) – 07858439052
 - Michael Vine (Grazier, ponies on sea wall) – 07968487236
- **Environment Agency - incident hotline:** 0800 80 70 60
- **Kent Police:** 01622 690690.
- **MET police training centre:** 01474 338400
- **Network Rail:** 0345 711 4141

9.1 Roles and responsibilities

The roles and responsibilities of the responsible persons are given below.

The Principal Designer will be responsible for providing the Principal Contractor with the information they need to safely undertake the project. A suitably experienced person has been appointed to undertake the design works.

The Principal Designer is responsible for:

- Providing detailed drawings of the project.
- Provide site information relevant to the project including Health & Safety hazards.

The Ecological Clerk of Works (ECoW) will be responsible for nature conservation legislation compliance. A suitably qualified person has been appointed to supervise the implementation of this CEMP(Biodiversity), in an Ecological Clerk of Works (ECoW) role.

The Ecological Clerk of Works is responsible for:

- Identify and implement control measures to minimise the risk of damage to the environment.
- Ensuring the CEMP(Biodiversity) details are updated as and maintained when relevant information is provided.
- Communicating the CEMP(Biodiversity) and other related document to employees, contractors and RSPB staff.
- Ensuring that the CEMP(Biodiversity) is implemented throughout all phases of the project.

The Principal Contractor will be responsible for ensuring compliance to all relevant construction design and management legislation. The Principal Contractor is also expected to maintain regular contact with the RSPB Project Manager. A suitably

experienced company will be appointed via competitive process to the Principal Contractor role.

The Principal Contractor is responsible for:

- Ensure F10 notice is issued (if required), signage indicating where and whom visitors should report to are clearly displayed.
- The site is kept in a tidy and orderly fashion.
- Controlled access arrangements so those entering site may avoid hazards.
- Ensure site safety including emergency egress arrangements and providing First aid facilities, appropriately trained first aid staff.
- Ensure the site and all stored materials and chemicals are safe and secure.
- Ensure all those that work on site (including other contractors):
 - Have a site induction including briefing on environmental issues pertinent to the project and relevant toolbox talks.
 - Understand and obey the site rules.
 - Are made aware of the emergency egress arrangements, muster points, first aid facilities and first aiders, spill and clean up procedures.
 - Have relevant and current training and certification for activities as required.
 - Are aware of all environmental matters which arise on site.
- Ensure the activities on site (including other contractors):
 - Meet all required Health & Safety standards of best practice.
 - Have task specific risk assessments and method statements (RAMS) in place identifying any environmental issue which may be applicable.
 - Are carried out in accordance with the requirements of any associated RAMS.

Other appointed **contractors, sub-contractors and visitors** working on or visiting the site are expected to report to, and liaise with, the Principal Contractor on accessing the site and before starting work.

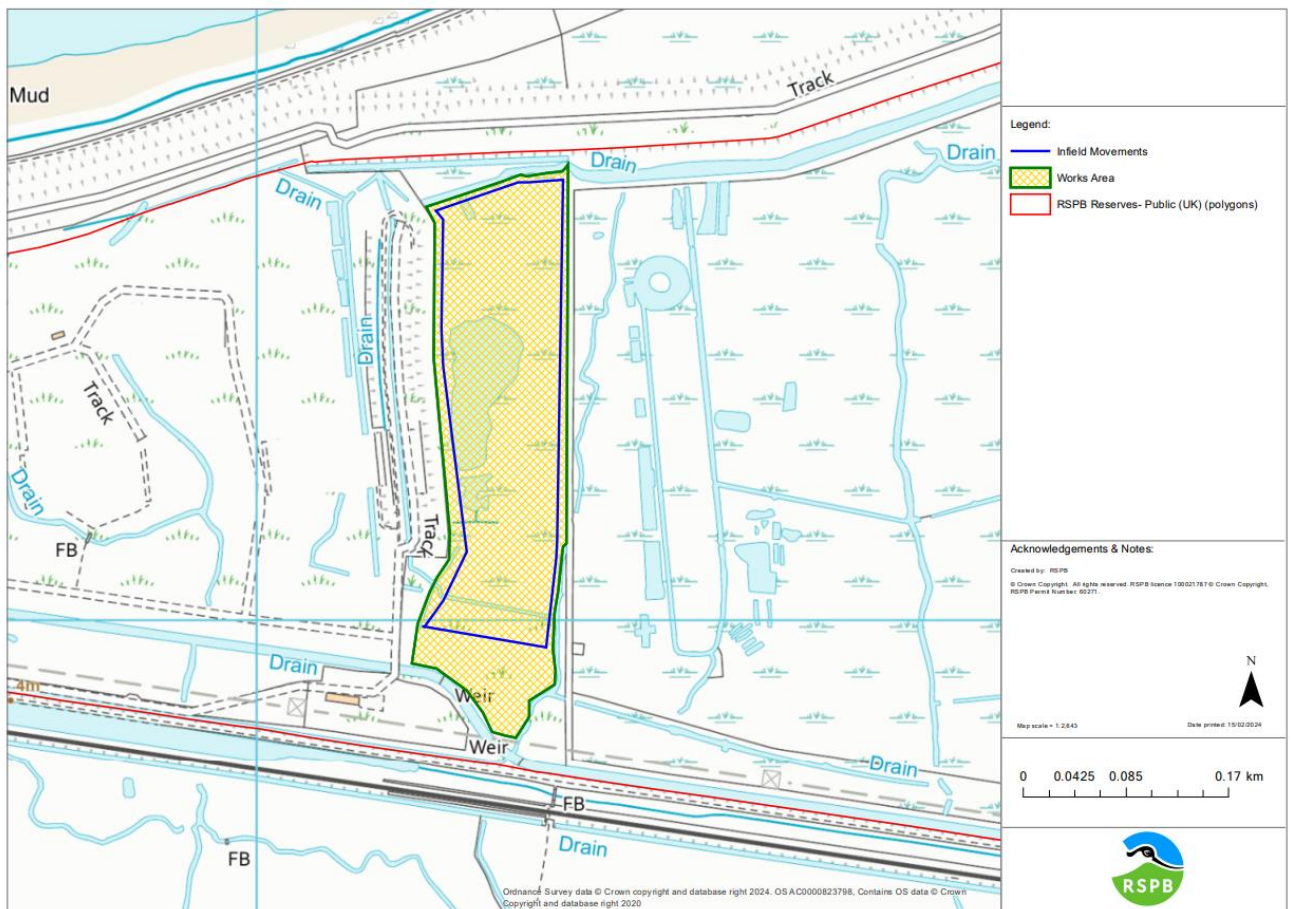
Contractors, sub-contractors and visitors to the project will be responsible for:

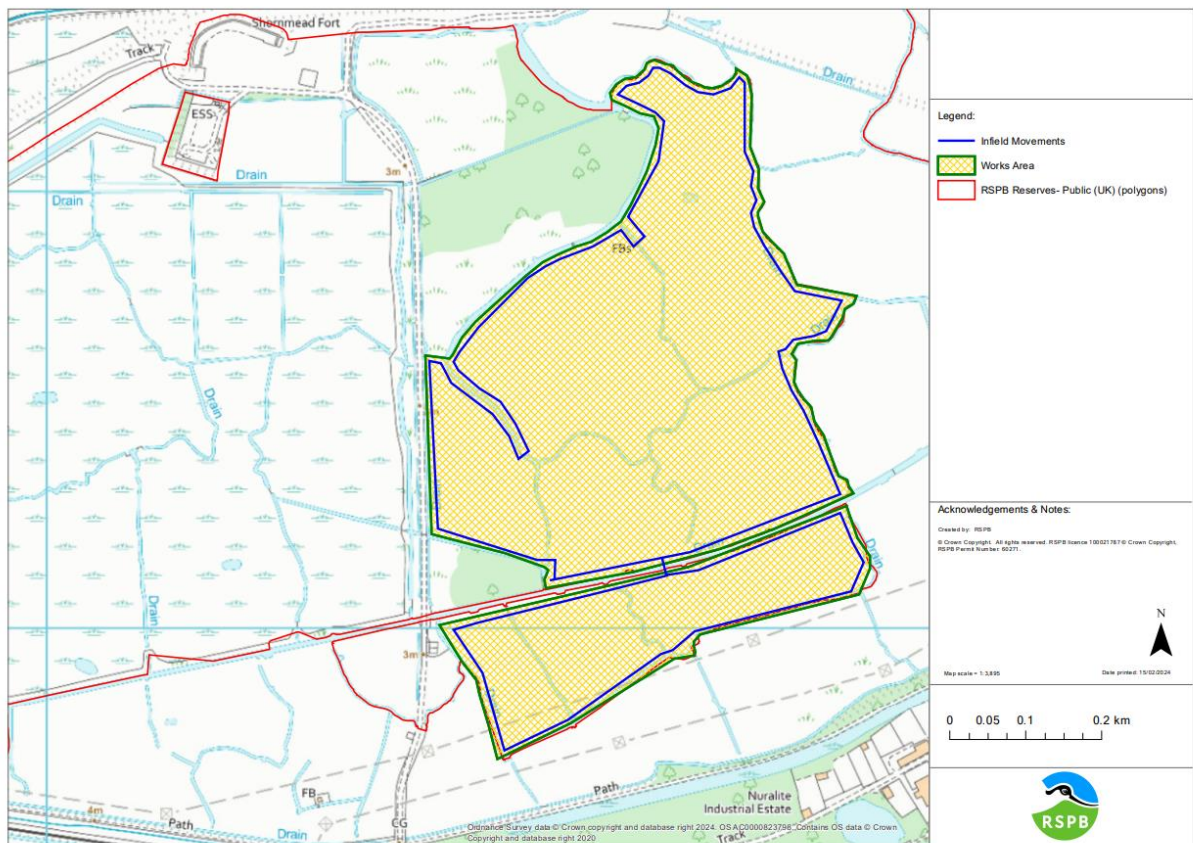
- Read and understand the relevant site information including (but not limited to) control measures, method statements, access information, works schedules and Health & Safety information.
- Ensuring that the control measures identified from environmental surveys are implemented as they are relevant to their work/visit.
- Ensuring that the project management team are notified of any nonconformance of control measures or environmental incident where the environment has been put at risk.

Appendices

Appendix I Map of access and proposed compound areas including welfare units

Appendix II Map of in-field movement of construction vehicles





Appendix III Maps of known invasive aquatic plant locations

