



Green Recovery Challenge Fund

 Department
for Environment
Food & Rural Affairs

The
National Lottery
Heritage Fund

 Environment
Agency



Higham Marshes Habitat Enhancement Project Construction Environmental Management Plan (Biodiversity) Higham Marshes—

Contents

1.0 Introduction	3
1.1 Aims and objectives	3
1.2 Current site conditions	3
2.0 Duration of works	3
2.1 Operating hours	3
2.2 Construction programme	4
3.0 Welfare arrangements	4
4.0 Access	4
4.1 Vehicle parking	4
5.0 Identification of 'biodiversity protection zones'	4
6.0 Locations and timings of sensitive works	5
7.0 Risk assessment of potentially damaging construction activities	5
8.0 Practical measures	7
8.1 Signage and fencing	7
8.2 Biosecurity Method Statement	8
8.3 In-field movement of construction vehicles & materials method statement	9
8.4 Post-enhancement and engineering works recovery	10
9.0 Responsible persons	10
9.1 Roles and responsibilities	10
Appendices	12
Appendix I Map of access and proposed compound areas including welfare units	12
Appendix II Map of in-field movement of construction vehicles	12
Appendix III Maps of known invasive aquatic plant locations	12

1.0 Introduction

RSPB Higham Marshes is managed by the Royal Society for the Protection of Birds (RSPB) and lies to the East of Gravesend, on the Hoo Peninsula Kent. Since 2013, The RSPB has, with the previous landowner and in conjunction with the Environment Agency, Natural England and the North Kent Marshes Internal Drainage Board worked hard to bring a large area under protection, and to develop a nature reserve that benefits wildlife and local people.

A new project funded via the UK Government's Green Recovery Challenge Fund (GRCF) and administered by the National Lottery Heritage Fund, is supporting the RSPB and its partners to embark on an ambitious, one-year, landscape-scale project to create and enhance wetland habitats, in order to boost biodiversity in a landscape compromised by the effects of climate change.

Higham Marshes is the wetland element of the GRCF project and will deliver large scale restoration of 177.2 ha of wetland grazing marsh by installing new hydrological features to create suitable habitat including low banks, dams and culverts to retain water in areas where it is needed along with habitat enhancements including rills, scrapes, pools and islands. When complete, this will transform Higham Marshes into a 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(B)

The preservation of key habitats and species during the delivery of 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 development area.

1.2 Current site conditions

This CEMP(B) has been prepared based on ecological information collected between 1933-2021 and intimate site knowledge gained via management and monitoring of the site since 2013. 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

Works in preparation for the groundworks will begin from 31st September 2022 or as soon as Planning Permission is gained, with full completion estimated to be by the end of November 2022, although the potential exists for some aspects to extend into the new year. For any such extensions relevant permissions will be sought from the appropriate agency.

2.1 Operating hours

Work involving plant will be restricted to Monday and Saturday, between the hours of 07:00 and 19:00.

Work beyond 250m from residences or that 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:

Key Stages	Date
Project start	01 July 2021
Site access	01 July 2021
Vegetation management commences	01 July 2021
Rubble/debris clearance commences	01 July 2021
Groundworks contractors mobilised and groundworks commence	26 July 2021 for 02/08/2021 start
Fencing contractors mobilised and fencing commences	01 September 2021
Project completion	28 February 2022 (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 units will be located within the fenced works compound.

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

The site has several access locations which are listed below and shown in the maps presented in Appendix I.

Access is gained to site via Canal Road. The entrance track to site with the RSPB have permitted access too.

4.1 Vehicle parking

All operators will park their vehicles outside the boundaries of the worksite at the Car Park, off the public highway. As such, there will be no increase in parked traffic on the public highways adjacent to the site.

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 railway line embankment which is an important overwintering area and source habitat for reptile species using the site and, as such, is important in terms of habitat connectivity. The salterns are also important in terms of reptile connectivity and both of these habitat areas will be retained as undisturbed.

During habitat enhancement and engineering works, the vast majority of biodiversity can be protected using prescribed access routes for contractors to move around site and conduct their activities. The routes have been designed to ensure that movements to deliver the scheme are kept to both the minimum and least sensitive area necessary. In addition, the footprints of all features can act as safe access routes during creation. Assisted by RSPB staff, the ECoW will monitor activities to ensure that the routes are 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.

Task	Timeframe	Location	Duration	Responsibility
Groundworks contractors mobilised and groundworks commenced within works areas.	Between September 2021 and December 2022. (Dependent on planning permission being gained)	Site wide but limited to works areas and associated access to those areas.	11 days	Contractors, supervised by ECoW with assistance from RSPB staff.

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

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

Works	Potential Impacts	Measures to Minimise Impacts
Groundworks: Use of heavy machinery to create various	1. Machinery movements and construction noise will likely cause the following impacts without appropriate mitigation:	1. Before groundworks commence, sward heights will be reduced and debris will be removed from works areas, access points and access routes which will encourage small mammals and

habitat features and associated infrastructure.	• 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. • Degradation/loss of habitat. 2. Groundworks within existing waterbodies will likely disturb vegetation and may lead to a spread of non-native invasive species, in particular water fern and floating pennywort.	reptiles present to disperse into undisturbed areas of the reserve. Machinery movements around the site, including in works areas, will be strictly controlled (see Section 8.3, 'In-field movement of construction vehicles & materials method statement') to keep disturbance and damage to a minimum, and to maintain core areas of habitat as undisturbed refuge areas for wildlife. To avoid impacts to breeding birds, the groundworks will be undertaken between August 2022 and February 2023 (at the very latest). Whilst the aim is to finish groundworks by the end of December 2022, events may require work into January and February to allow completion of the programme as defined by GRCF timescales. Works will be undertaken during the passage season, but the nature and present quality of the habitat results in very low/non-existent numbers of designated or conservation concern birds using Higham Marshes on autumn passage. As such, areas that are not being worked will provide sufficient, undisturbed refuge areas. If works proceed into December and beyond, works will be undertaken during the wintering season, The site will be actively managed to kept dry to allow works to be carried out and consequently reducing the quality of habitat for wintering species. As such, areas that are not being worked will provide sufficient, undisturbed refuge areas, for example RSPB Shorne Marshes which is adjacent to Higham Marshes. Moreover, areas that have been completed will provide very attractive, undisturbed refuge areas. 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.
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		The ECoW will ensure that toolbox talks are given to all contractors working on the reserve. These will cover the identification of both 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. Fuel will be brought onto site when needed, bowsers 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 and the site speed limit will any incidences.

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

8.0 Practical measures

8.1 Signage and fencing

The reserve is already closed to the public with no rights of way, so the site access will be limited to works personnel and RSPB staff. Site compounds will be secured using Heras temporary fence panels. Where required, pedestrian and vehicle access gates will be incorporated to meet the site and health and safety regulation requirements.

Site information will be displayed at the site office e.g. each compound.

Avalon barriers will be used to fence off sensitive ecological and archaeological areas or hazards.

8.2 Biosecurity Method Statement

The main ecological risk at the site is the spread of water fern, non-native invasive, aquatic weeds. Management is in place across the site to control both species but some pockets remain, particularly in the ditches at the site. Therefore, there is a biosecurity risk of spreading water fern while working in, and around, ditches and waterbodies.

Another invasive aquatic species present at the site is Water fern (*Azolla filiculoides*), which is a small free-floating water plant that forms dense mats. As with floating pennywort, it spreads vegetatively, which means it only takes a small section to float downstream to start a new colony.

The protocol below should be applied to avoid the spread of it. The RSPB will make contractors aware of ditches containing water fern 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 the water 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 floating pennywort or water fern 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.

- Before working in a new ditch system, an RSPB staff member should be requested to check the ditch network for floating pennywort or water fern presence before work commences.
- In ditches containing floating pennywort or water fern, avoid disturbing the plant as much as possible – where practical, manoeuvre around mats and avoiding breaking them up.
- If disturbing the mats is unavoidable the plants should be removed by depositing above the high-water line, away from any slope, and promptly removed to a composting area. Floating booms or equivalent barriers/filters should be deployed in ditches with floating pennywort or water fern to minimise the potential spread of any fragments.
- 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:

- Site entrances 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 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.
- As a rule, when moving around the site, vehicles should stick to boundaries, unless moving to their area of work via specified haul routes (detailed in the “Map of in-field movement of construction vehicles” in the appendices).
- Turning and manoeuvring areas will be clearly marked within the site boundary.
- 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.
- Construction vehicles and workers are not permitted to access areas of the site beyond their works areas to minimise disturbance to wildlife – particularly in areas of long grass.
- 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:** Will Tofts, RSPB – 07881352506
- **Ecological Clerk of Works:** Will Tofts, RSPB – 07881352506

- **RSPB Project Manager:** Will Tofts - 07881352506
- **RSPB Site Warden:** Joe Tidbury – 01634 222480
- **RSPB Assistant Warden:** Bradley Andrews – 01634 22480
- **RSPB Northward Hill Office:** 01634 222480
- **RSPB Weekend Warden:** 07771 837511
- **Grazier:** Brian Brooks – 01634 220238

- **Environment Agency - incident hotline:** 0800 80 70 60
- **Kent Police:** 01622 690690.
- **Network Rail - incident hotline:** 03457 11 41 41

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(B), 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(B) details are updated as and maintained when relevant information is provided.
- Communicating the CEMP(B) and other related document to employees, contractors and RSPB staff.
- Ensuring that the CEMP(B) 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, 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

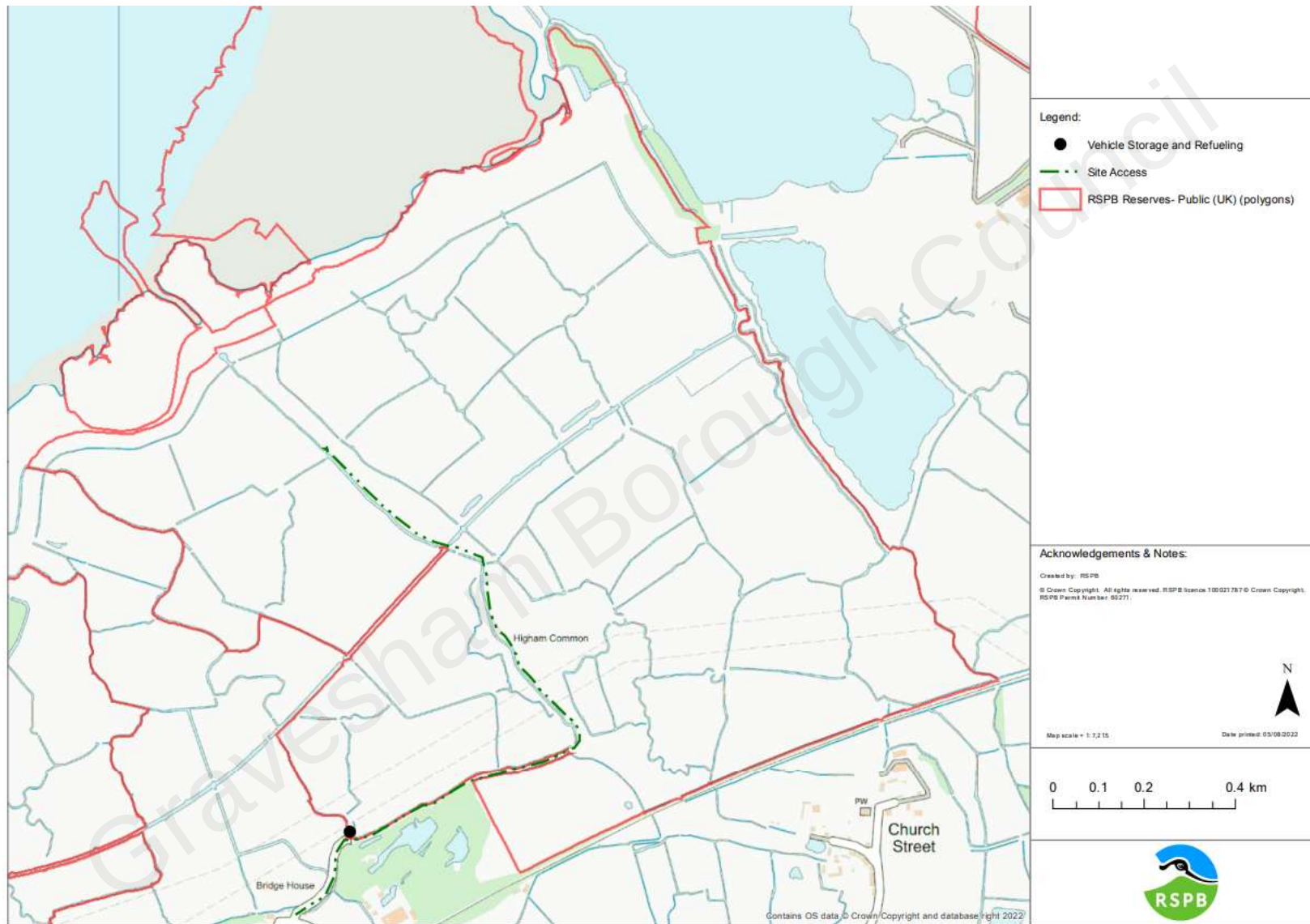
[Appendix I](#) Map of access and proposed compound areas including welfare units

[Appendix II](#) Map of in-field movement of construction vehicles

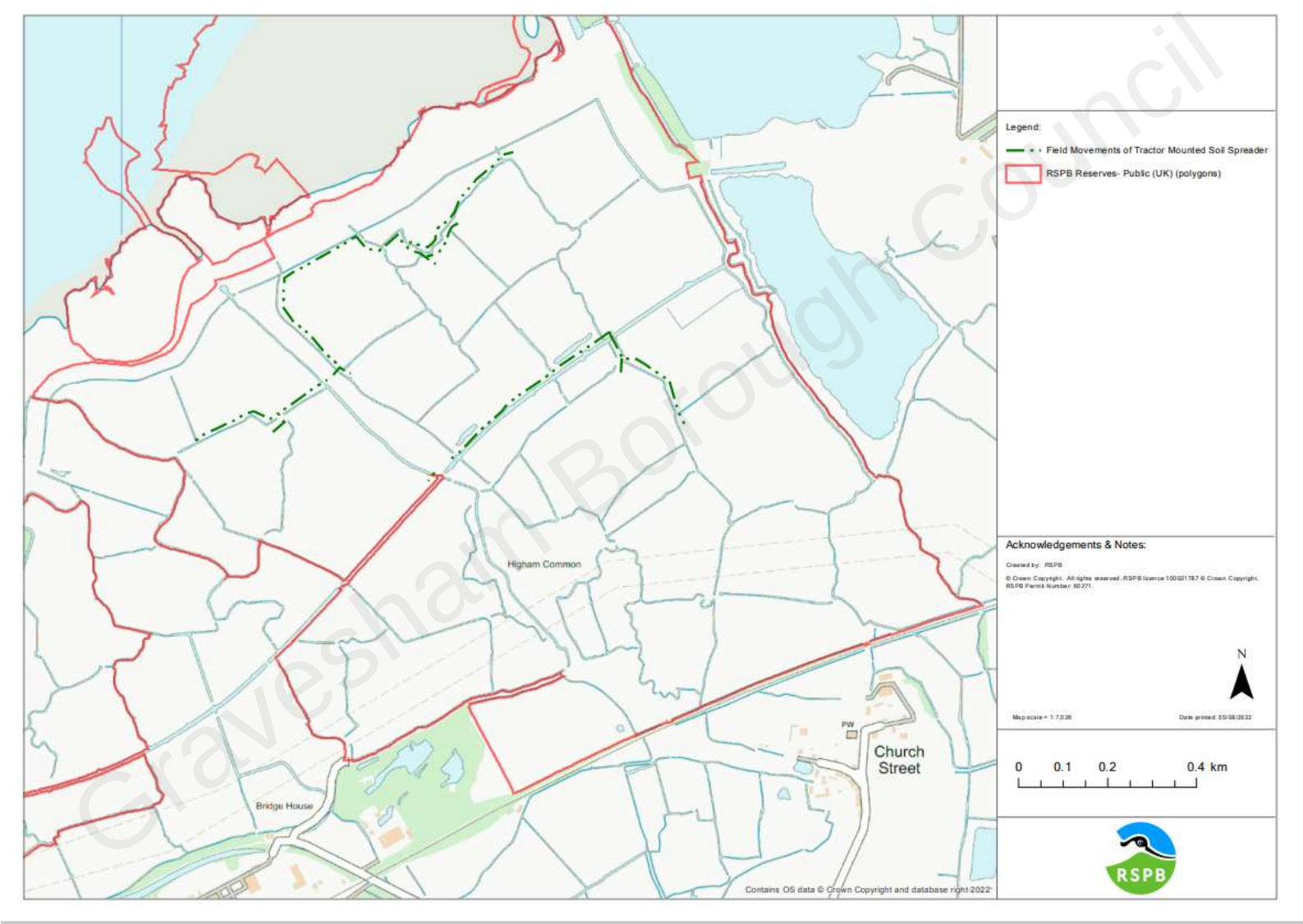
[Appendix III](#) Maps of known invasive aquatic plant locations

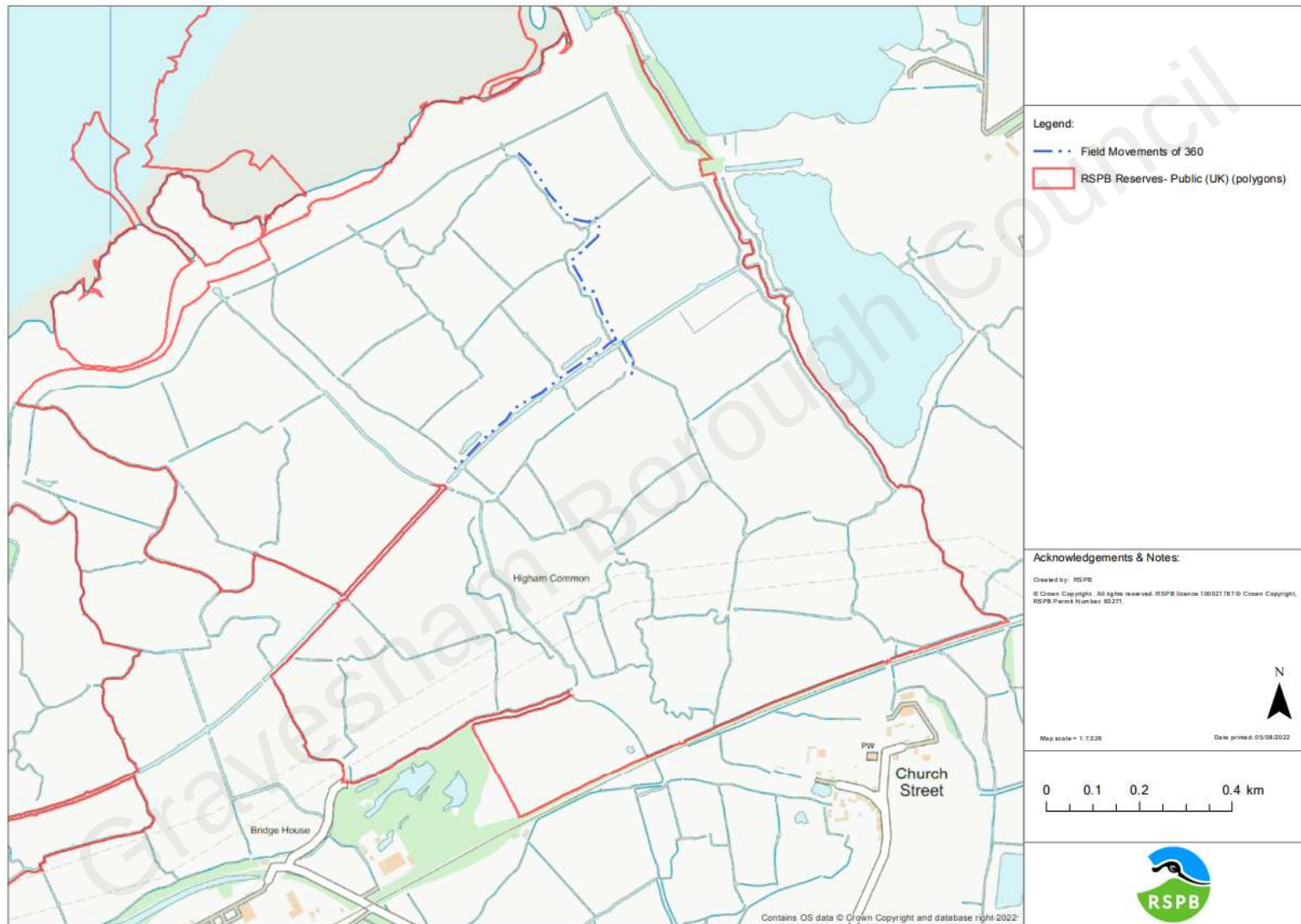
Appendix 1

Gravesham Borough Council



Appendix 2





Appendix 3

