Hoveton Great Broad Restoration Project

Environmental Statement

VOLUME IV NON TECHNICAL SUMMARY

On Behalf of NATURAL ENGLAND

July 2014

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planning and designing environments for life

NATURAL ENGLAND

Quality Control

Environmental Statement Volume IV: Non-Technical Summary

for

Hoveton Great Broad Restoration Project

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1 Introduction

1.1 Background

1.1.1 Natural England is currently leading a project to restore Hoveton Great Broad and Hudson's Bay. These Broads are situated within the Bure Valley, downstream of Wroxham, Norfolk (Figure 01). They form part of the Bure Broads and Marshes SSSI, which in turn is a component site of Broadland SPA, The Broads SAC and Broadland Ramsar Site. They also form part of the Bure Marshes NNR.

1.1.2 Natural England is leading the project, in partnership with the Environment Agency and the Hoveton Estate, and is seeking to fund this work through Life+ and Heritage Lottery Funding (HLF). Future phases of the project, including access provision, would be the subject of a separate planning application.

1.1.3 Environmental Impact Assessment (EIA) is a statutory requirement for planning applications that may have important or 'significant' effects on issues such as traffic, communities, and the environment. The process usually requires special studies and data gathering to provide a 'baseline' of information about the proposal and the land that is needed for it, and then to 'assess' it. The document generated from this research is called an Environmental Statement.

1.1.4 The Local Planning Authority (The Broads Authority) has provided a verbal 'screening opinion' in which it has stated its views about likely effects of the proposal. Although the project is considered to be non-EIA development, taking into account the scale of the project, its location in the open countryside and within a nationally and internationally designated wildlife site, the applicant has determined that there is potential for some significant environmental effects. Therefore, a voluntary Environmental Statement (ES) has been prepared.

1.1.5 After the application is submitted, the Planning Authority is required by law to consult with other agencies or 'statutory consultees' and will also consult with other parties about the proposal before consent may be granted. Consultees include organisations such as Traffic and Highways, as well as the Environment Agency, local parishes and others.

1.1.6 Other documents provided with the planning application include a Planning Statement and a Flood Risk Assessment.

1.2 Purpose and need

1.2.1 Hoveton Great Broad and Hudson's Bay are part of the Bure Broads and Marshes SSSI and is a designated National Nature Reserve, SAC and SPA.

1.2.2 Both Broads are in poor ecological condition, despite improvement in the water quality of the adjoining River Bure. It is considered that the reason for the poor condition of the broads is high levels of nutrients bound up in the sediment. The proposal is therefore to remove a significant proportion of nutrient-rich sediment from both Broads. The sediment will be used to create new reedbed habitat within Hoveton Great Broad and widen Wroxham Island. The lakes will then be isolated from the river and dyke networks and fish temporarily removed, in order to 'tip' them back into good ecological condition.

1.2.3 As well as the water quality issues, there has also been a loss of reedswamp around the edges of the broads. Some of the sediment pumped from the broad will be used to create new fen habitat within Hoveton Great Broad.

1.3 The Site

1.3.1 Hoveton Great Broad and Hudson's Broad are located in the floodplain of the River Bure, in the Norfolk and Suffolk Broads (Figure 01). The closest settlement is the town of Wroxham, to the west. The planning authority is the Broads Authority (BA). The Broads of Norfolk and Suffolk

extend to approximately 120 miles of waterways amongst some of England's most important wetland and marsh landscapes.

1.3.2 Both Hoveton Great Broad and Hudson's Bay comprise open water habitat, surrounded by carr woodland, which effectively screens these waterbodies both from the river, and from the adjacent upland (Figure 02).

2 The Proposal

2.1 The Proposed Development

2.1.1 Natural England is applying for planning permission to *create new fen by pumping lake sediment into geotextile tubes to create bunds, back-filling the areas behind with more sediment, and planting these areas with locally sourced fen vegetation, together with construction of temporary fish barriers.*

2.1.2 The scheme involves sediment pumping from Hoveton Great Broad and Hudson's Bay and the construction of a number of bunded areas within Hoveton Great Broad and Wroxham Broad, within which areas of fen would be created. The sediment pumping would take place over 2 successive winters (see Figure 03).

2.1.3 The project will also include the reinstatement/strengthening of Wroxham Island. Erosion over the last 60 years has caused the land between Wroxham Broad and the River Bure to become significantly narrowed, down to 6m in places, threatening the integrity of the river bank and riverside moorings. Part of the proposal therefore includes the use of dredged sediment from Hoveton Great Broad and Hudson's Bay to reinstate the island.

2.1.4 Sediment will be removed from the broad by excavator, and would then be pumped, using a concrete pump, directly into the geotextile tubes (geotubes) at 3 locations within Hoveton Great broad and a 4th location adjacent to Wroxham Island, thus creating 4 bunded areas. The same equipment will also be used to cap the geotubes with vegetation and fill the space behind the bund with more sediment (Figure 04). Species-rich fen vegetation will be established on the areas thus created within Hoveton Great Broad, and a mixed tall herb fen will be established on the area created immediately adjacent to Wroxham Island (see Figure 05.

2.1.5 The placed geotubes will create an area of new species-rich fen vegetation in Hoveton Great Broad measuring 4.29Ha in total. A total of 1.67Ha of tall herb fen would be created in Wroxham Broad.

2.1.6 Silt curtains will be used to help prevent sediment escaping into the river when mud pumping is conducted close to the open connections with the river (at the Dam Entrance and opposite Salhouse Broad).

2.1.7 Once mud pumping is complete, fish would be removed from the waterbodies by electrofishing, and fish barriers installed to prevent the fish re-entering the broads. The fish barrier will be removed after no more than 10 years. Earlier removal may be possible if monitoring indicates that this would be appropriate.

2.1.8 Temporary goose fencing will be erected in front of the geotubes located in Hoveton Great Broad to prevent goose grazing during the initial habitat creation phase. This is likely to remain in situ for up to 3 years. There will be no permanent fencing. Goose fencing is not required at Wroxham Island, as vegetation used in the restoration here has been chosen so as to be unpalatable to geese.

2.1.9 Temporary warning signs would be erected at 30m intervals around the periphery of Wroxham Island to warn the public of the dangers of the unconsolidated mud.

2.1.10 The proposed site compound is accessed by a private track, approximately 2km long, which leads from the A1062 to the site. It is proposed that heavier plant and materials for the mud pumping work, including pumps and geotextile bags, would be brought to site by barge. Other site traffic would leave the main A1062 Wroxham-Potter Heigham Road directly onto a private track. Plant, equipment and materials will only be stored on site while works are on-going and then removed upon completion. Aside from operators' vehicles, there will be minimal traffic to and from the works site while works are on-going.

2.1.11 It is not proposed to light the project area nor compound at any point during the works programme. Winter working hours would be constrained by natural daylight, except in the case

of installing the fish barriers, when it may be necessary to complete installation at night to maximise fish exclusion. Each barrier would require a maximum of one night's work.

2.1.12 The habitat creation works will be phased over 2-3 years with subsequent management continuing over the 10 year duration of the project. The initial mud pumping phase will take place in parallel with the filling of geobags at Wroxham Island in Year 1. This phase of the work is scheduled to take place between September and March 2016/17. The areas behind will be backfilled over the winter of 2016/17 and vegetated over the following growing season(s). Subsequent project phases in winter 2017/18 would complete mud pumping from Hoveton Great Broad and Hudson's Bay, and would include the creation of fen areas in Hoveton Great Broad (see Figures 03, 04 and 05).

2.2 Restoration, management and aftercare

2.2.1 Figure 05 sets out detail of the proposed restoration, which can be summarised as follows:

Wroxham Broad Island

- The proposed extension to Wroxham Broad Island would be restored to mixed tall herb fen. Vegetation would be allowed to regenerate naturally from the seedbank, with the exception of a 0.5m wide strip at the water's margin, which would be vegetated using turves cut from an area of pond sedge swamp. The pond sedge is unpalatable to grazing geese, and would create an effective barrier between the edge of the water and the potentially more palatable vegetation present within the area of tall herb fen. The use of pond sedge would also provide an additional degree of protection from erosion due to wave action, although it is anticipated that the use of a geotextile mesh to cover the consolidating mud would in itself provide sufficient erosion protection.
- Chestnut pale fencing is already in existence to the rear of the 24 hour moorings along the eastern margin of Wroxham Island and would serve to ensure that members of the public cannot access the bunded area. Further temporary chestnut pale fencing would be erected if required to prevent public access to the consolidating wet mud, which may be hazardous until vegetation cover is well established. It is anticipated that the fencing would be removed within 3 years of project completion (unless the Broads Authority prefer the fencing to remain in perpetuity); although the island would be monitored so that fencing and warning signs could be removed sooner if it is safe to do so.
- Warning signs would be erected at 30m intervals around the periphery of the Island to warn the public of the dangers of the unconsolidated mud.

Hoveton Great Broad species rich fen

- The bunded areas within Hoveton Great Broad would be restored to species-rich fen. Turves of fen vegetation, including reed rhizomes, would be harvested from a site elsewhere within the National Nature Reserve and would be spread on the geobag areas to ensure rapid establishment of vegetation cover.
- The use of turves would ensure rapid vegetation establishment, as noted above, which would provide protection from erosion due to wave action once the vegetation becomes established, although it is anticipated that the use of a geotextile mesh to cover the consolidating mud would in itself provide sufficient erosion protection.
- Low fencing would be installed around the periphery of each of the bunded areas to prevent geese from grazing off the developing vegetation.
- It is anticipated that the fencing would be removed within 3 years of project completion, although the vegetation development would be monitored so that fencing could be removed sooner if it is appropriate.

Hoveton Great Broad Reedswamp

- No restoration is proposed to the reedswamp around the margins of the broad, as this will establish naturally from existing plant rhizomes.

Site Compound

- This area would be rotovated and seeded with an appropriate agricultural ley mix, similar to that present prior to works commencing.

2.3 Monitoring

2.3.1 The site would be monitored for a 10 year period by Natural England staff. Monitoring would consider and record the density of the re-establishing fen vegetation and the ability of the consolidating mud within the bunded areas to bear human weight would be assessed, so that protective fencing and warning signs can be removed when it is appropriate and safe to do so.

2.3.2 Any evidence of goose grazing, erosion of deposited material or damage to the geotubes would also be identified and recorded.

2.3.3 Similarly, if there is evidence of damage to geotubes, goose grazing or erosion then additional measures would be identified to rectify the problem. Any measures which would require the erection of additional fencing or signage would be agreed with the Local Planning Authority prior to implementation.

2.3.4 Monitoring of water quality and aquatic plant cover would also be undertaken, and if the results of this are favourable, then it may be possible to remove the fish barriers earlier than currently anticipated.

2.4 Management

2.4.1 Details of the proposed site management following restoration would be set out in a management plan, which is a requirement of the external funding expected to fund this project., and which could be a condition of any planning permission.

3 Background to Environmental Impact Assessment

3.1 Context

3.1.1 Impacts are changes caused by human activity to our surroundings. The purpose of environmental assessment is to understand a new proposal in enough detail to identify any negative or positive impacts of going ahead with it. The situation that would exist without the proposal is compared to the situation with it; other similar activities are also included so that all of the environmental impacts can be understood together (called cumulative impacts). Ways to reduce impacts further may be suggested when an adverse impact is identified, this is called mitigation. Predicting impacts is aided, in some cases, by modelling which uses mathematical formulae to generate new information and predict what might happen in real life.

3.1.2 Significance ratings have been developed using National, European and professional criteria guidance and practice, the manner of interpretation is ultimately subject to the judgement of the assessor and the Planning Authority:

- Major - likely to represent key factor in decision-making, and/ or represents issue(s) of national or regional significance. Major impacts are considered significant and would be carried forward for detailed assessment.
- Moderate – a concern to the project depending on the relative importance of the issue to the decision making process. Moderate impacts are likely to be significant and carried forward for detailed assessment based on the nature of the impact and professional judgment.
- Minor – a concern at local scale, additional mitigation may be appropriate, but rating is not likely to be key to decision making. Minor impacts are unlikely to be significant and therefore unlikely to be carried forward for detailed assessment.
- Negligible/Insignificant – not of material importance to the decision making process. Not carried forward for detailed assessment.
- Short-medium term – impacts are associated with the mud pumping phase and whilst the fish barriers are in place.
- Long term - impacts are residual and beneficial and associated with the completion of the restoration project.

3.1.3 In this assessment, impacts from implementing the proposal are assessed. Impacts taking place during mud pumping (winter 2015-16 and winter 2016-17) are considered to be short term. The installation of fish barriers is a medium term impact. Impacts after the project is completed (2027 onwards) are considered to be long term.

3.1.4 Standard mitigation measures required by law or best practice are assumed in the assessment process, additional mitigation measures may be proposed to compensate where significant residual impacts are predicted.

3.2 Scoping

3.2.1 The list of aspects of the environment which might be affected by a project of this nature includes population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the factors. Consideration should also be given to the likely significant effects resulting from the use of natural resources, the emission of pollutants, the creation of nuisances and the elimination of waste.

3.2.2 For each topic assessed, a description of the baseline conditions is provided, followed by a scoping assessment to determine whether the issue is unlikely to be significantly affected by the proposal; or whether there is potential for a significant impact, in which case the issue should be carried forward for detailed assessment. Early discussion with the Local Planning Authority

(the Broads Authority) has identified that the following topics should be considered in the assessment:

- Water Quality
- Hydrology, Hydrogeology and Flood Risk
- Ground conditions
- Traffic and Access
- Landscape and Visual Impacts
- Air Quality
- Noise and Vibration
- Ecology
- Archaeology and Cultural Heritage
- Sustainability
- Waste

3.2.3 A number of other studies, surveys and assessments have been commissioned in support of this project which do not form part of the ES. The results of these are summarised in the Planning Statement:

- Flood Risk Assessment;
- Traffic and Transport Assessment
- Water Framework Directive Assessment

3.3 Topics covered by detailed assessment

Archaeology and Cultural Heritage, Ecology, and Landscape and Visual Impacts have been selected for detailed assessment. The remaining topics were briefly assessed, but the project is not thought to give rise to any adverse impacts in these areas.

4 The Assessment

4.1 Landscape Appraisal

4.1.1 A landscape appraisal was undertaken to assess the effects of the proposed restoration of Hoveton Great Broad and Hudson's Bay. The appraisal considers the effects on landscape of the site itself, the local and wider landscape character and changes to views.

4.1.2 The site is located at the very heart of the landscape of the River Bure and Broads, where the landscape is characterised by large areas of wet woodland which extend directly to the banks of both the river and connecting water bodies.

4.1.3 The site comprises a series of water bodies which vary in scale and character. Hoveton Great Broad and the adjacent Hudson's Bay are located in the floodplain of the River Bure, contained within a broad loop in the meandering river. They comprise open water habitat, surrounded by carr woodland, which effectively screens these waterbodies both from the river, and from the adjacent upland. Wroxham Broad is more widely visible to river users and craft on the broad itself.

4.1.4 Within the wider project area, the level of the boating activity on the River Bure is seasonally heavy, particularly given the proximity of the site to the boatyards associated with hire craft at Wroxham. Hoveton Great Broad and Hudson's Bay are not accessible to the public by boat, but can be viewed from the 'Hoveton Great Broad Nature Trail'

4.1.5 The proposed development lies within an area which has a number of international, national and local designations. The Norfolk and Suffolk Broads, a network of navigable waterways, is afforded status similar to a National Park by virtue of the Norfolk and Suffolk Broads Act 1988.

4.1.6 The proposals present no change to the key characteristics of the Broadland landscapes local to the project area. There would be no impacts during either the course of the works, the first year following completion or after a period of 10 years once the proposed fen vegetation has established. The seasonal and low-key nature of the engineering operations of the construction works would be in keeping with the character of typical management operations of the landscape of the broads. The lack of land-based operations or lighting ensures that the integrity of the carr woodland around the fringes to the river and Hoveton Great Broad is retained intact.

4.1.7 Once the vegetation to the surface of the geotubes, and the fen vegetation to the sediment to the rear, becomes fully established, the bank-side character of the river in the vicinity of Wroxham Island will be enhanced. The narrow island between river and the adjacent Wroxham Broad currently has a somewhat denuded feel, with the bank line exposed and a series of fragile protection measures in place. The widened island would provide a greater depth of vegetation which will provide a more enclosed feel to the river channel. Likewise, the completed work at Hoveton Great Broad would enhance the distinctly remote and tranquil character of the landscape, which relates to the characteristics behind the designations applicable to this landscape.

4.2 Ecology

4.2.1 A desk study and habitat survey were carried out, along with protected species surveys for water vole and otter. Much of the Site lies within the Bure Broads and Marshes SSSI; a component site of The Broads SAC, Broadland SPA, Broadland Ramsar Site and part of the Bure Marshes NNR. The ecology of this part of the Site is well-recorded and is known to be particularly important for wintering waterfowl. Both broads are designated as SAC waterbodies but are currently assessed as being in 'unfavourable no change' condition and in 'poor' ecological status under the Water Framework Directive. Evidence of otter and water vole were found but neither the Designated Site nor Wroxham Island are thought to support significant populations of these species.

4.2.2 Overall the construction phase of the works is expected to have a short-term negligible impact on the species and habitats present providing appropriate mitigation measures are put in place. Mitigation has been put in place for a number of species (water vole, otter, reptiles, bats, breeding birds and macrophytes). In the long term, lake restoration and the creation of new fen habitat will significantly improve the ecological status of Hoveton Great Broad and Hudson's Bay, particularly in terms of the diversity and abundance of macrophytes and invertebrates.

4.2.3 Some additional enhancement of the habitat on Wroxham Island, particularly to benefit kingfisher and reptiles, is proposed.

4.2.4 In summary; the sediment removal operations, creation of the new fen areas and installation of the fish barrier will cause localised, short term disturbance/damage to the ecological features that are present. The features likely to be affected are the general water quality and those species of animal and plant associated with the fen habitat immediately adjacent to where the new fen will be created.

4.2.5 In the long term, the project will create new fen vegetation around the margins of Hoveton Great Broad, significantly improve water quality and, it is hoped, encourage significant macrophyte growth. This will create significantly improved habitat for macro-invertebrates and breeding and over-wintering birds. Initially the significant reduction in fish may have a minor impact on piscivorous species (although alternative feeding opportunities will still be available on the adjacent marshes and the River Bure) but ultimately, the clear-water conditions created and the change in the relative abundance of the fish species present (more rudd and perch) is likely to benefit these species.

4.3 Archaeology and Cultural Heritage

4.3.1 An archaeological desk-based assessment and heritage statement were prepared.

4.3.2 There are several listed buildings, artefact scatters, cropmarks and buried remains located close to the Site. The buildings comprise Grade II Listed Buildings of regional significance. The other nearby heritage assets, mostly cropmarks, are of high local significance. The broads themselves are peat extraction sites associated with St Benet's Abbey, and are of high local significance.

4.3.3 Removal of the peat during the medieval period would have largely erased traces of earlier exploitation of the wetlands of the Bure valley, although unexcavated baulks of peat occur adjacent to the river and towards the centre of Hoveton Great Broad.

4.3.4 The development proposals would have minimal impact upon nearby known heritage resources, and no impact upon nearby listed buildings, and the physical impact of the wetland restoration on heritage assets within the site area will be none or low, as the limits of peat extraction were greater than the current extent of the Broads. There is no anticipated impact upon the remnants of unexcavated baulks of solid peat within the broads.

4.4 Hydrology, Hydrogeology and Flood Risk

4.4.1 A Flood Risk Assessment (FRA) is submitted with the application. This concludes that the development would not increase the risk of river flooding. The proposed fish barriers will be at existing bank level and will not exceed the 1 in 20 flood height. The scheme is therefore not anticipated to give rise to any increased flood risk (see also Flood Risk Assessment).

4.5 Water Quality

4.5.1 The impact of the project on water quality will be temporary and will not cause long term water quality impacts on either the broads themselves nor in the River Bure. Long term, the project will improve water quality.

4.6 Ground Conditions

4.6.1 The sediment has been tested and found not to contain any contaminants. No significant impacts were identified.

4.7 Traffic and Access

4.7.1 The proposed site compound is accessed by a private track which leads from the A1062 to the site. Construction traffic is would be limited to a small number of contractors vehicles, and it is therefore considered that the overall impact of the proposals would not significantly affect local road users and residents.

4.8 Air Quality and Odour

4.8.1 No significant air quality or odour impacts are predicted providing that good site practice is adhered to.

4.9 Noise and Vibration

4.9.1 No significant impacts are predicted providing that good site practice is adopted; for example low noise plant and engines would be used for the proposed works.

4.10 Sustainability

4.10.1 The assessment demonstrates that the proposals would give rise to numerous beneficial effects and as such the development is considered to be sustainable.

4.11 Consideration of loss of open water habitat

4.11.1 The scheme would inevitably result in the loss of a small area of open water in Hoveton Great Broad and Wroxham Broad.

4.11.2 In Wroxham Broad, the loss of open water for sailing and navigation is offset by the purpose of the proposal, which is to stabilise and maintain the integrity of Wroxham Island.

4.11.3 The loss of open water habitat in Hoveton Great Broad is offset by the creation of species rich fen of higher nature conservation value, to replace similar habitat lost to erosion.

5 Summary

5.1.1 The Hoveton Great Broad Restoration Project has been assessed and has been found to give rise to very minor short term negative impacts upon archaeology and cultural heritage, ecology and landscape. In the medium term, impacts would be neutral, and in the longer term, on completion of the 10 year project, the proposal is considered to give rise to significant ecological, water quality and landscape benefits.