We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people’s lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.
### Quality Assurance

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<td>Author</td>
<td>Will Hargrave</td>
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### Approvals

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EIA Quality Mark

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

The EIA Quality Mark is a voluntary scheme, operated by the Institute of Environmental Management and Assessment (IEMA), through which EIA activity is independently reviewed, on an annual basis, to ensure it delivers excellence in the following areas:

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

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Non-Technical Summary

Introduction

This non-technical summary describes the findings of an Environmental Impact Assessment (EIA) which has been carried out to assess the likely significant effects of a proposed managed realignment scheme at Hesketh Out Marsh East (HOME). It provides a description of the existing environment, the likely environmental impacts and the measures which will be implemented to avoid or reduce them. This non-technical summary is available to view both as a standalone document, and as part of the Environmental Statement which provides a comprehensive record of the EIA.

Background

Hesketh Out Marsh was created in 1981 by constructing an outer flood embankment around an area of intertidal habitat to enable the land to used for agricultural purposes. It is separated from the land to the south, known as Hesketh New Marsh, by a flood embankment which was constructed in the 1800s. This flood embankment is owned and maintained by the Environment Agency to protect low-lying areas from flooding.

The eastern section of the Environment Agency owned embankment needs to be refurbished to maintain the current standard of flood protection (1 in 200 year level i.e. a 0.5% annual probability of flooding). There are a number of low spots along its length and the narrow crest prevents access for maintenance vehicles so the embankment needs to be repaired and widened.

The North West River Basin Management Plan contains a series of measures which need to be delivered in order for water bodies to reach Good status under the Water Framework Directive (WFD). The proposed managed realignment and restoration of intertidal habitat at HOME supports these measures and will help to deliver Government targets for habitat creation under the Biodiversity 2020 Strategy.

The Proposed HOME Managed Realignment Scheme

In 2008 the Environment Agency, in partnership with the RSPB, breached the outer flood embankment on the western half of Hesketh Out Marsh, known as Hesketh Out Marsh West (HOMW), to restore 168ha of intertidal habitat. This area is owned and managed by the RSPB as their Hesketh Out Marsh Nature Reserve. This project involved refurbishing the western section of the Environment Agency’s flood embankment and constructing a new embankment between HOMW and HOME to protect the remaining agricultural land.

The HOME proposals are very similar to the previous project. The scheme consists of refurbishing the remaining eastern section of the inner flood embankment (approximately 2km) and then breaching the outer embankment at a number of locations to allow the land in-between to revert back to intertidal habitat. The project will be delivered in partnership with RSPB and Natural England. The RSPB has already purchased 54 hectares of the site and the sale of the remaining land has been agreed in principal with the landowner.
A network of creeks and lagoons will be excavated within the site and the material from these features will be used to refurbish the inner embankment, which will become the primary flood defence. Once the inner embankment has been refurbished, four breaches will be made in the outer embankment to allow water into HOME during high tide. As part of the scheme a new bird hide will be built on the cross bank to provide visitors with a panoramic view across the whole site. The existing car park will be extended to provide additional parking and the condition of the footpath running along the crest of the embankment will be significantly improved (see Figure 1). The HOME site will be incorporated into the RSPB Hesketh Out Marsh Nature Reserve.

The project objectives are:

- To create a more sustainable flood defence using natural processes to maintain the standard of flood protection to 143 properties.
- To maximise the opportunity for saltmarsh creation.
- To deliver some of the WFD mitigation measures for the Ribble Estuary and River Douglas water bodies under the North West River Basin Management Plan.
- To avoid and/or minimise potential adverse impacts on the environment by managing construction activities and using locally sourced material to refurbish the flood embankment.

Looking west along the top of the outer flood embankment with the HOME on the left and the main channel of the Ribble on the right.
A number of different options were considered in order to meet the project objectives. The following options were rejected as they could not meet all of the objectives:

- **Patch and repair works on the outer embankment** using imported material as and when the embankment degrades or is breached. Whilst this would maintain flood protection in the short term, it would be very expensive and would not be sustainable in the long term. It would not meet the primary objective to create intertidal habitat.

- **Maintain the existing defence height and create 54 hectares of intertidal habitat.** The RSPB currently own approximately 54ha of the HOME site, with the remaining 100ha privately owned. Constructing a new cross embankment along the boundary between the RSPB and private land, and then breaching the existing embankment to allow the RSPB land to flood was considered. Whilst creating new habitat, this did not meet the objective of maximising habitat creation opportunities and the construction of a new cross embankment would be considerably more expensive than the proposed scheme.

*Looking towards HOME from the north bank of the Ribble Estuary with the intertidal habitat in HOMW in the background.*
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Legislative Regime

West Lancashire Borough Council has confirmed that the proposed scheme requires planning permission. The Environmental Statement forms part of the planning application as required by The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended).

HOME is located adjacent to a European designated site known as the Ribble and Alt Estuaries Special Protection Area (SPA) designated under the EU Birds Directive. As part of this directive, European member states are required to take appropriate steps to avoid deterioration of habitats and species within these sites. This is translated into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended). As part of the EIA a Habitats Regulations Assessment has been undertaken to identify if any of the features could be adversely affected. The estuaries are also designated as Ramsar Site under the Ramsar Convention and a Site of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act 1981 (as amended).

The Marine Management Organisation (MMO) has confirmed that the works also fall under the Marine Works (EIA) Regulations (2007). It is considered that the works have the potential to have significant effects on the marine environment and as such an EIA is required. The MMO has confirmed that one Environmental Statement is sufficient to satisfy the requirements of both the Town and Country Planning and Marine EIA Regulations.

Consultation

Consultation has been undertaken with a range of stakeholders including Environment Agency specialists, external organisations and the public. A Scoping Document was sent to the key stakeholders; this provided a description of the scheme and set out the approach for the EIA. A public drop-in event was held in Hesketh Bank to inform the local community of the scheme and to give them an opportunity to discuss the proposals with the project team.

The main issues identified by the stakeholders include:

- Impacts on the designated nature conservation sites and changes to habitat;
- The potential impact to fish, including the potential for them to get trapped in the lagoons, the effects of sedimentation and safeguards which are required to protect migratory fish in the River Douglas;
- The risk to aviation safety at Warton Aerodrome and Blackpool International Airport due to the increased risk of bird-strike;
- The potential impacts of the proposed breaches on navigation along the Millennium Ribble Link which runs along the River Douglas and Ribble Estuary.

The final design has been reviewed in light of these issues and they have been assessed and mitigated where required as part of the EIA (see Significant Environmental Impacts and Mitigation below).
Scope of the Assessment

Scoping was undertaken to identify which environmental receptors could potentially be affected by the proposal and therefore needed to be included in the EIA. The receptors scoped-in are:

- Human beings
- Recreation and amenity
- Traffic and transport
- Land use
- Landscape and visual amenity
- Flora and fauna
- Flooding and flood risk management
- Historic environment
- Water resources
- Climate change and sustainability (see ‘Land Use’ and ‘Flooding and Flood Risk Management’)

The assessment also considered whether the effects of the scheme would act in combination with other known plans and projects to generate cumulative impacts.

Significant Environmental Impacts and Mitigation

The assessment considered how changes to the existing environment caused by construction and operation of the scheme would affect environmental receptors. The significance of impacts was assessed according to the predicted magnitude of the effects and the sensitivity of the receptors affected. The Environmental Constraints Plan (Figure 2) illustrates specific environmental receptors within the vicinity of HOME that have been given consideration as part of the environmental assessment.

The assessment also considered mitigation measures that need to be implemented to prevent or reduce significant environmental impacts. These measures have been included in an Environmental Action Plan so that they are delivered during the construction and operation phases. A summary of the main potential impacts and proposed mitigation is given in the following sections.

Human Population

One of the main benefits of the scheme is to maintain a high standard of flood protection to approximately 143 residential and commercial properties. This will be achieved by raising and re-profiling the inner embankment. The refurbished embankment will also serve to maintain flood protection to grade 1 agricultural land behind.

Despite these benefits some minor adverse effects to the human population may arise, particularly during construction. These relate to construction related noise, vibration, dust and mud generation. The site, however, is located in a very remote location; therefore very few people are likely to be affected by the works. Construction works will be screened by the existing embankment, therefore noise will be limited. Any debris, dust or mud deposited on local roads will be cleared away by the contractor and other good practice measures will further reduce these impacts.
Warton Aerodrome is located to the northwest of HOME on the opposite bank of the Ribble. The scheme has been designed to minimise the risk of bird-strike by limiting the size of the lagoons, and a programme of post-construction monitoring will be undertaken to ensure no colonies of gull establish at the site which could increase the risk of bird-strike.

Recreation and Amenity

HOME is surrounded by an extensive public footpath network. During construction it will be necessary to temporarily close two footpaths that run along the length of the inner embankment. A short diversion will be set up to minimise disruption. As part of the scheme the footpaths will be widened with a level surface which will improve safety and accessibility.

A major benefit of the scheme is that it will serve as an extension to the RSPB Hesketh Out Marsh Nature Reserve. To further improve its recreational value, a bird hide will be constructed on the cross bank and the capacity of the existing car park will be increased by 16 spaces. No wildfowling will be permitted on site in the foreseeable future.
Traffic and Transport

The main impacts will be experienced by the local road network during the construction phase. Material for the refurbishment of the inner embankment will be sourced from the excavation of the creeks and lagoons within the site. There will, however, be the requirement to set up a temporary stone access ramp and a haul road using bog mats, which will require approximately 115 deliveries by lorry. Every effort has been made to keep this number to a minimum.

The main items of plant used during construction will be dumper trucks, excavators, rollers and dozers. These will be delivered to the site at the start of construction and will be left on site until completion to minimise the volume of construction traffic on the local roads. Most staff will be transported to the site by minibus each day resulting in no more than 20 additional vehicle movements to the site per day. All traffic associated with construction is anticipated to access the site from Dib Road via Hesketh Bank.

A compound area will be set up next to the RSPB car park for the duration of the construction phase. A few car parking spaces will be temporarily out of use but the car park will remain open. The car park will be extended as part of the works.

Once the works are complete, there is anticipated to be a modest increase in visitor numbers, and it is likely to attract occasional educational visits by coach. This is not anticipated to have a significant impact on the local road network, with a predicted average of 6 more cars per day.

A construction Traffic Management Plan will be prepared prior to the start of construction. This will include details of vehicle types, working hours and access routes. Local roads surrounding the site will also be inspected before works begin and any damage attributable to the works will be reinstated by the contractor upon completion.

Consultation has been undertaken between the project partners and the Canal and Rivers Trust to establish any potential impacts upon the Millennium Ribble Link. As a result a study has been undertaken and concluded that navigation of the Ribble Link is unlikely to be significantly affected by the proposed scheme.

Land Use

According to a preliminary agricultural land classification undertaken in the late 1980s, the HOME site is classed as Grade 4 (i.e. poor quality); however this may not take into account any subsequent improvements by the landowner. Land immediately to the south is classified as Grade 1 (i.e. excellent). The works will restore the Grade 4 land to intertidal habitat. The scheme will mean a loss of low grade agricultural land, but saltmarsh is a natural habitat of estuaries and of key biological importance which must be given space to move inland to protect coastal locations behind. The amount of agricultural land loss will not have a significant impact on food security and the scheme will also ensure the long term protection of the Grade 1 agricultural land behind the inner embankment.

Saltmarsh can play an important role in mitigating against climate change as it is able to store significant amounts of carbon, which may otherwise contribute to the greenhouse effect. The HOME scheme will restore a large expanse of saltmarsh in front of the primary flood embankment which will help to dissipate the energy of the incoming tide.
Landscape and Visual Amenity

During construction the existing embankments will screen the majority of the works from the surrounding receptors. The works to the inner embankment and the construction compound will be the most visible but there are only a small number of receptors (e.g. houses) nearby. Landscape character will be temporarily affected during the time it takes for the embankment to re-vegetate. However, once complete, the scheme with the historic creek pattern re-established will have a positive impact upon landscape character.

Flora and Fauna: Habitats

The Ribble Estuary is a European designated Special Protection Area (SPA) and the majority of it is also a Site of Special Scientific Interest (SSSI), a national nature conservation designation. There is also an area of high ground, used for stock, which is classed as a National Nature Reserve.

The current HOME site is an agricultural landscape with a network of creeks with small expanses of reed beds. Some of the habitats found are listed under the UK Post-2010 Biodiversity Framework or the Lancashire Biodiversity Action Plan (LBAP) and support a variety of species (see below, Flora and Fauna: Wildlife).

The scheme will create 154 hectares of intertidal habitat. This will have a major beneficial impact for wildlife which will use the new saltmarsh, creeks and lagoons.

Looking west along the top of the inner flood embankment towards HOMW which will be widened and raised as part of the proposed scheme.
Flora and Fauna: Wildlife

The Ribble Estuary is designated for its high populations of migratory and over-wintering bird species. There are also a number of important species which are likely to be present within the site which form part of the UK Post-2010 Biodiversity Framework and Lancashire Local Biodiversity Action Plan (LBAP). These include lapwing, skylark, water voles and brown hares.

Mitigation is proposed to minimise impacts to existing species of interest found on the site. This includes pre-construction survey, habitat manipulation, creation of new habitat for mining bees and the relocation of water voles to unaffected ditches in the locality prior to breaching.

Flooding and Flood Risk Management

143 properties in Hesketh Bank will benefit from the improved flood defence. The HOME site will become inundated on a regular basis by high tides, and may serve to marginally reduce flood risk upstream of the river due to the increased floodplain storage area.

By 2080 peak water levels are expected to rise by about 0.5m due to climate change and wave heights will also increase; therefore by then the standard of flood protection is likely to be reduced. However the crest of the raised embankment will still be about a metre above the 1 in 200 year water level. The greater risk will come from increased over-topping by waves due to the higher water levels and wave heights.

Historic Environment

An archaeological desk-based assessment has confirmed there is little of known archaeological significance within the study area. Red deer footprints of unknown date have, however, become exposed since the works in the adjacent HOMW site, which suggests that further unrecorded sets of prints may extend beneath the area of the HOME scheme. The potential for such features has been considered and a mitigation strategy has been agreed with the County Archaeologist.

During the construction phase, toolbox talks will be given to all site operatives to make them aware of the potential for unrecorded archaeological remains.

Water Resources

Managed realignment at HOME is identified as a target action in the North West River Basin Management Plan.

The Environment Agency has an obligation under the EU Water Framework Directive (WFD) to prevent the deterioration in the quality of water bodies. A preliminary WFD assessment has been undertaken for the HOME scheme, which considered the potential effects upon the Ribble estuary, the River Douglas and the Ribble Link canal. It also gave consideration to groundwater bodies in the area. The results of this preliminary assessment showed that the scheme is compliant with the WFD. Many of
the predicted effects are considered to be positive. The remaining effects are considered to be negligible and can be mitigated or avoided by careful detailed design. A potential negative effect of fish becoming isolated within the lagoons as the tides recede is not considered significant in the context of the estuary, and compared to the beneficial effect from the increased availability of habitat for fish.

General good practice mitigation will be implemented to avoid construction causing unnecessary pollution to the water bodies. This will include following Environment Agency Pollution Prevention Guidelines and the formulation of a Pollution Incidence Response Plan.

Planning and Policy Context

An assessment has been undertaken which shows that the plans comply with national planning policy set out within the National Planning Policy Framework and the statutory development plan set out in the West Lancashire Replacement Local Plan 2001-2016 (saved policies).

Cumulative Impacts

Other known developments in the local area are small and localised and not anticipated to give rise to significant effects when considered in combination with the HOME scheme. There are other flood risk management activities being undertaken by the Environment Agency up and downstream of Hesketh. These are considered not to give rise to any significant cumulative effects.

Environmental Benefits

The works will provide the following environmental benefits:

- The creation of 154ha intertidal habitat.
- Maintain a high standard of flood protection.
- Improvement of local and regional recreation facilities by expanding and improving the RSPB Nature Reserve.
- The restoration of a significant section of the Ribble Estuary.
- Help to deliver mitigation measures under the Water Framework Directive.
- Climate change mitigation and adaption.
- Improvements to existing footpaths.

Programme of Works

The HOME scheme will be constructed in two phases.
Phase One consists of the embankment refurbishment and the excavation of the lagoons and creeks. These works are anticipated to be carried out in spring/summer 2014.

Phase Two will be of a smaller scale, and involves excavating the remaining creeks, creating the access ridges, and finally making breaches in the outer embankment. This phase will be completed by spring 2016.

Conclusion

The HOME scheme will be delivered in partnership with the RSPB and Natural England. It involves refurbishing approximately 2km of the inner flood embankment and then breaching the old outer embankment in a number of locations to allow land to revert back to inter-tidal habitat. A number of environmental impacts have been identified as part of an EIA, but these can be managed so that any impacts that do occur are minimised. In the long-term, the scheme will create a significant area of new saltmarsh habitat, protect the land behind the works from flooding, and enhance the recreational value of the RSPB Nature Reserve.

Contact Us

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This Non-Technical Summary and the full Environmental Statement are available to view at the address below. To ensure that queries are dealt with appropriately, it is advisable to make an appointment by contacting the telephone number below.

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