Grimsby Docks Flood Risk Management Scheme

Non-Technical Summary
April 2013
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.
Non-Technical Summary

Introduction and background

This non-technical summary describes the findings of an Environmental Impact Assessment (EIA) which has been carried out to assess the likely significant effect of proposed new flood defences at Grimsby Docks, both on the human and the natural environment. 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, but also as part of the Environmental Statement which gives more comprehensive documentation of the results of the EIA.

The current situation

Grimsby, in North East Lincolnshire, is situated on the outer south section of the Humber Estuary (see Figure 1.1). Grimsby Docks and the defences along the docks frontage are owned and maintained by Associated British Ports (ABP). The docks at Grimsby, and much of the town, are at significant risk of flooding from the Humber Estuary. In some places, there is a 100% chance of flooding in any single year. The defences are currently adequate enough to protect the docks, but are not adequate to protect the 14,400 residential and 2,200 commercial properties immediately behind the docks from tidal flooding in the future.

The risk of flooding is expected to increase over the next 50 years, as described in both the Humber Estuary Flood Risk Management (FRM) Strategy and the Flamborough Head to Gibraltar Point Shoreline Management Plan (SMP2). This is considered to be a result of changes in weather patterns due to global warming and associated sea level rise.

The proposed Flood Risk Management Scheme

The Environment Agency is proposing to manage the risk of flooding by implementing the Grimsby Docks Flood Risk Management Scheme (FRMS). The proposed scheme will improve approximately 3.5 km of the existing defences from the outfall at Doig’s Creek close to Union Dock to the northern tip of the docks, and east along the coastline to an area of wasteland that is designated as the ABP Wasteland Local Wildlife Site. Figure 1.1 shows the length of defences requiring improvement.

The majority of the improvements are within the operational Grimsby Docks site, which consists of areas of hard-standing and wet docks. The objective is that the improved defences will provide a standard of protection against a 1 in 200 year flood event (i.e. an event with an approximately 0.5% chance of happening in any single year), with allowances for the predicted effects of sea level rise. The existing defences along the length of the scheme are divided into 10 different sections, hereafter referred to as ‘reaches’. The proposed works to be carried out for each reach are described in Figure 3.1.
The existing defences are not adequate to protect the docks or the town of Grimsby.
Alternatives Considered

Alternative design options for each reach were considered based on their technical feasibility, sustainability, cost and potential environmental effects. The main alternatives options which were considered were:

- Building the defences around the rear of the docks to protect Grimsby town from tidal flooding. Improving the current defences around the docks frontage, however, is both cheaper and enables protection of the dock area. ABP have agreed to contribute some funding to the scheme to take account of the fact that the docks will gain added protection as a result.
- A new clay flood embankment for reaches 1a and 1b. This was rejected due to a lack of local sources of clay and risk of the existing embankment containing contaminated material.
- Driving sheet piles behind the existing wall at reach 6 which requires strengthening. This was rejected due to the potential presence of buried structures at this location, such as old railway sleepers, which would interfere with sheet piling.
- Constructing a seawall on the front line (seaward) defence of reaches 9 and 10, adjacent to the ABP Wasteland Local Wildlife Site. This would have eliminated the need for works to the embankment within the Local Wildlife Site and provide improved flood protection to the site. The additional time and cost associated with this option made it an unviable option.

Driving sheet piles behind the existing wall at reach 6 is not technically feasible

Legislative Regime

All of the proposed works constitute ‘development’ as defined in Section 55 of the Town and Country Planning Act 1990 (as amended). Planning permission is required for the works associated with reaches 1a, 1b, 2, 4, 5, 6 because they will be outside of, or extending beyond, the current footprint of the defences and/or will provide a completely new defence. The remainder of the works (reaches 3, 7, 8, 9, and 10) constitute ‘Permitted Development’ by virtue of the Town and Country Planning (General Permitted Development) Order 1995 (as amended). The Planning Authority, North East Lincolnshire Council (NELC) concurs with
Discussions have been undertaken with the Marine Management Organisation and as the scheme is flood defence work being carried out on behalf of the Environment Agency, the works are exempt from the requirement for a Marine Licence.

It has been determined that the scheme has potential to give rise to likely significant environmental effects, therefore, the scheme requires a statutory EIA under the provisions of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 and Environmental Impact Assessment (Land Drainage Improvement Works) Regulations 1999 (as amended). Those elements of the works that constitute Permitted Development have been advertised to notify the general public of the intention to undertake a statutory EIA.

The Grimsby Docks FRMS is situated within the European designated Humber Estuary Natura 2000 site, which means the estuary is designated as a Special Area of Conservation (SAC) and a Special Protection Area (SPA). It is also a Ramsar site (an internationally designated wetland area). This means the proposals required assessment of the impacts on European Sites under Regulation 48(1) of the Conservation of Habitats and Species Regulations 2010 (as amended) (Habitats Regulations).

Listed Building Consent will be obtained for any works that will affect listed buildings and associated structures.

The key findings of the EIA, including the assessment under the Habitats Regulations, are given in the following sections.

**Scope of Assessment**

Scoping consultation and preliminary assessment was undertaken to identify which impacts associated with the works are likely to have a significant effect on the environment (‘scoped in’) and which impacts did not need to be considered further by the EIA (‘scoped out’). The detailed assessment considered impacts to the following environmental topics:

- Human Population
- Flora and Fauna
- Water
- Archaeology and Cultural Heritage
- Landscape and Visual Amenity
- Materials and Waste.

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 assessment also considered mitigation measures that will be implemented to prevent or reduce significant environmental impacts. A summary of the main potential impacts and proposed mitigation is given in the following sections.
Human Population

The purpose of the proposed scheme is to protect approximately 14,400 residential and 2,200 commercial properties from the effects of flooding. The Grimsby Docks are included within this area. This is one of the largest ports in the country, providing a significant number of jobs for people from Grimsby and beyond. The improved standard of flood protection will have a major beneficial impact to the human population.

There is anticipated to be some short-term disturbance as a result of construction activity. This will primarily be from construction noise experienced in residential areas to the east of the scheme. The majority of the works are located around the docks site which already experiences noise from operational activities, and is therefore unlikely to be significantly affected. Construction noise impacts will be managed by limiting working hours to between 7am and 7pm on weekday wherever possible, and only suitably sized construction plant will be used on site in accordance with good practice guidelines. Local residents will be informed in advance of periods of loud noise.

The impact upon traffic on the local road network is not expected to be significant. Traffic within the docks may be impacted by the proposed works and discussions with ABP are underway to manage this aspect. Access to the different reaches is limited and a Traffic Management Plan will be agreed with North East Lincolnshire Highways Authority to minimise the impacts of the works on all roads. Short diversions and reduced speed limits within the port may form part of the Traffic Management Plan and construction traffic will avoid using the wider road network during peak periods, where possible.

There will be a temporary loss of access to a popular walking route adjacent to the ABP Wasteland Local Wildlife Site for the duration of the works. The public will be informed in advance of any closure and, where possible, diversion routes will be made available and clearly signed.

Flora and Fauna: Habitats

The Humber Estuary is a European designated Natura 2000 site and the majority of the coastline is a Site of Special Scientific Interest (SSSI), a national designation. The estuary is designated for its large areas of intertidal habitat and for significant numbers of birds, fish and marine mammals, such as grey seals. The ABP Wasteland, an area of wasteland towards the eastern end of the scheme, is designated as a Local Wildlife Site.

The proposed works will result in the direct and permanent loss of approximately 144m² of intertidal mudflat from the SAC. There are over 9,000 hectares (ha) of intertidal mudflat within the SAC, and as such, the Grimsby Docks FRMS will only result in the loss of a very small portion of the total mudflat resource in the designated site.

There will also be the need to use the sandflat adjacent to reaches 8, 9 and 10 for construction access. The access will be temporary during construction and reinstatement requirements have been discussed with Natural England. It is anticipated that, as this habitat is regularly subject to tidal inundation, it will recover quickly.

The only likely significant effect on the Humber Estuary Natura 2000 site was considered to be the contribution of the scheme to the loss of estuary habitats due to coastal squeeze, which is defined as the reduction in area between high and low tides as a consequence of sea level rise and flood defences. The effects of coastal squeeze from various Flood Risk Management (FRM) works along the coastline from Grimsby to Saltfleet have been considered at a higher level through the Flamborough Head to Gibraltar Point Shoreline Management Plan (SMP). The Donna Nook Managed Realignment Scheme is being developed to deliver compensatory habitat for all losses within the outer south section of the Humber Estuary, and is currently under construction. Given the provision of the Donna Nook site, the assessment concluded that the Grimsby Docks FRMS will result in no adverse
effect on the integrity or function of the Humber Estuary Natura 2000 site.

Flora and Fauna: Wildlife

The Humber Estuary supports significant numbers of over-wintering and passage birds. It has been agreed with Natural England that the best way to avoid negative impacts upon these birds is to undertake works during the summer months where possible, when these particular birds are least likely to be present. Where there are requirements for winter working work will not be carried out for three hours either side of high tide to minimise disturbance to birds using the intertidal areas.

The docks themselves have little value for wildlife. There is a possibility that birds may try to breed on the ABP Wasteland Local Wildlife Site but this area is extremely well used by people walking their dogs so it is unlikely. However, to ensure that there is no impact on breeding birds, any site clearance will be undertaken outside of the breeding season. If any site clearance is required in the breeding season, this will only be permitted following confirmation from an ecologist that the site is clear from breeding activity.

There will be no impact to grey seals or river and sea lamprey within the estuary.

The ABP Wasteland Local Wildlife Site has potential to support reptiles such as Common Lizard and is home to some rare species of plants. Sensitive site clearance, including carrying out grass strimming in a phased approach over two days, will be undertaken to minimise the risk of affecting reptiles. All work within the site will be focussed on an existing crushed stone track and fencing will be used to minimise the risk of construction workers straying away from the agreed working area. Upon completion of the works, topsoil will be reused to restore the site to its existing condition.

Flora and Fauna: Non-Native Plants

There are some small areas within the docks which have non-native (invasive) species, including Japanese knotweed, present. A bio-security risk assessment will be undertaken prior to the commencement of works. Based on this assessment an invasive species management plan will be produced to ensure correct control measures are adopted for the removal of invasive species, where appropriate, and/or prevent their spread before and during construction.

Water

The Environment Agency has an obligation under the EC Water Framework Directive (WFD) to prevent deterioration in the overall status of water bodies and enable water bodies to achieve good ecological status or potential. Lacby Beck/River Freshney and the Humber Lower Estuary are the only two water bodies potentially impacted by the proposed works at Grimsby Docks. A preliminary assessment of the impact on these water bodies was undertaken and concluded that the works comply with the WFD.

Mitigation will be implemented to prevent more general risks of pollution to the estuary. These include following Environment Agency Pollution Prevention Guidelines (PPG) and the use of construction method statements.

Archaeology and Cultural Heritage

The docks and surrounding area contain many features of archaeological and historical interest, which reflect the cultural heritage of the town. This includes some of Grimsby’s most recognisable landmarks, such as the Grade I listed dock tower. The completed scheme will provide these features with an improved standard of protection against flooding. Consideration will be given to English Heritage guidance and features will be marked on
construction drawings to make sure the contractors are aware of their location. Construction workers will also receive talks informing them of features to be aware of and what to do in the event of uncovering new features of interest.

An assessment of the potential impacts from the proposed works upon the area’s heritage assets has been made in terms of the archaeological, historical, cultural and aesthetic value of those assets.

At reach 1a, a potential aesthetic issue relates to the setting of the Grade II* listed Rennie’s lock, and a risk of the asset becoming isolated. The detailed design will take such concerns into account and aim to avoid them. This reach also has visible remains of a number of features adjacent to it, including a disused slip way. This will be taken into account in the detailed design and further surveys and recording will be undertaken to minimise any impacts. At Reach 1b, a potential issue relates to the use of rock armour which could potentially diminish the aesthetic value of the setting of the Grade II Listed Royal Dock. During detailed design consideration will given to restricting the use of this rock armour.

The proposed construction of new sea walls at reaches 2 and 4 may have a localised impact on the aesthetic value of the setting of the Grade I and Grade II Listed Dock Towers, reducing the existing sense of openness in this area, increasing to the physical and visual ‘clutter’ and dislocating the assets from the Grade II Listed quayside wall. However, the main aesthetic appreciation of these assets is as iconic landmarks which are visible from afar, and this will remain unaffected; measures to reduce the localised impacts will be included within the detailed design, including further consideration of the alignment of the walls and potential cladding of the walls, after which there are not anticipated to be any significant effects. The alignment of the proposed walls will also seek to minimise any direct impacts on the Grade II listed quayside wall.

A war memorial is also present near reach 2, which may be carefully moved to accommodate the works in consultation with the Royal Naval Patrol Service veterans and ABP. Piling works at reach 6 have the potential to damage the remains of an in-filled lock. Therefore, these works will be undertaken in consultation with English Heritage and the NELC archaeologist.

The scheme aims to protect some of Grimsby’s most recognisable landmarks
Landscape and Visual Amenity

The majority of the impacts on the landscape and visual amenity of the site will be temporary during construction. After completion of the works and reinstatement of any affected landscape, the remaining effects are, on the whole, not significant. The areas of most concern closely relate to some of the impacts described above, i.e. the aesthetic value and setting of heritage assets. The assessment of the setting of heritage assets overlaps with the assessment of the landscape character and visual amenity in the proximity of the historical assets. Although the latter comes from a different perspective, not specifically concerned with the appreciation and understanding of historical feature, the conclusions are similar. One potentially adverse effect highlighted is at reaches 2 and 4 where, due to the proposed sea walls close to the Grade I and II Listed Dock Towers, an increase in visual ‘clutter’ and loss of openness is anticipated. However further design detail and on-going consultation with NELC and English Heritage may be able to further mitigate this effect. For the most part landscape and visual impacts are negligible or minor, with some minor positive effects resulting from the improvement of defences and also from the removal of the front lines of defence at reaches 9 and 10.

Materials and Waste

The quantity of material required and waste expected to be generated has been calculated. The main materials required include soils, stone, gravel, timber, metal steel bars and handrails, plastic for sheet piles and quick setting concrete. Incoming materials will be delivered to site by road, which will add an average of approximately 20 extra vehicles to the local road network per day. Works near the ABP Wasteland Local Wildlife Site will be undertaken by using material from within the site, thereby minimising the need to import material.

Waste will be segregated into assigned skips and transported to the nearest licensed waste transfer sites. A Site Waste Management Plan has also been prepared for the works. A Carbon Calculator was used to assess and compare the predicted greenhouse gas emissions for different design choices, highlighting where savings could be made. It will also be used to help calculate the contractor’s overall carbon footprint from construction and identify ways of reducing it.

Cumulative Impacts

Other known developments within the docks are not expected to have any significant environmental effects in combination with the Grimsby Docks FRMS.

Other Environment Agency schemes being constructed at the same time which form part of the Humber Estuary FRM strategy have also been considered. The main potential impacts are in relation to the Humber Estuary Natura 2000 site, and have been assessed through the Habitats Regulations Assessment (see ‘Flora and Fauna: Habitats’ above).

Environmental Enhancements

There are a number of elements to the scheme which will provide opportunities for enhancements. Where agreed with Natural England and English Heritage, we will remove rubble and aggregate that has been dumped previously on the foreshore. The scheme may also provide opportunities for improved public access and management of invasive species.
Programme of Works

Construction of the Grimsby FRMS will be undertaken in a number of phases:

- Phase One, which involves work along reaches 8, 9 and 10 would start late spring/early summer 2013. This work is permitted development.
- Phase Two, the refurbishment of the dock gates at reaches 3 and 7 is also likely to take place in 2014. This work is also permitted development.
- Phase Three, it is anticipated that these works for reaches 1a, 1b, 2, 4, 5 and 6 would commence in 2014. These works require planning permission.

Any changes to the current designs will be reviewed and any subsequent changes to the predicted likely significant effects of the current EIA will be documented in an addendum to the Environment Statement. The addendum will be made publically available and be submitted as part of the planning submission.

Conclusion

A number of environmental impacts have been identified during the EIA but these can be suitably managed so that any adverse impacts that do occur are minimised. In the long term, the scheme will serve to protect people and properties in Grimsby from flooding.

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This non-technical summary and the full Environmental Statement is available to view at the address below:

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Further copies may also be made available if required by contacting the Environment Agency.
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