## CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PROJECT BACKGROUND</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>NEED FOR THE PROPOSED SCHEME</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>DESCRIPTION OF THE CONSTRUCTION PHASE</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>DESCRIPTION OF THE OPERATIONAL PHASE</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>ALTERNATIVE OPTIONS CONSIDERED</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>REQUIREMENT AND SCOPE FOR EIA</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>ASSESSMENT METHODOLOGY</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>POTENTIAL EFFECTS OF THE PROPOSED QUAY EXTENSION AND DREDGING ON THE</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>MARINE ENVIRONMENT</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>POTENTIAL TERRESTRIAL EFFECTS OF THE PROPOSED SCHEME</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>POTENTIAL IMPACTS ASSOCIATED WITH THE DISPOSAL OF DREDGED MATERIAL AT</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>THE INNER GABBARD AND INNER GABBARD EAST</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>POTENTIAL FOR CUMULATIVE IMPACTS</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>ASSESSMENT UNDER THE REQUIREMENTS OF THE WATER FRAMEWORK DIRECTIVE</td>
<td>9</td>
</tr>
<tr>
<td>13</td>
<td>HABITATS REGULATIONS ASSESSMENT</td>
<td>10</td>
</tr>
<tr>
<td>14</td>
<td>SUMMARY AND CONCLUSION</td>
<td>10</td>
</tr>
</tbody>
</table>
1 PROJECT BACKGROUND

1 In November 2003 Hutchison Ports UK Limited (HPUK) applied for a Harbour Revision Order (HRO), planning permission and the other necessary consents for works to expand the capacity of the Port of Felixstowe. The project was known as the Felixstowe South Reconfiguration (FSR). These applications were supported by an Environmental Impact Assessment (EIA) leading to an Environmental Statement (ES) (2003 ES). Following a public inquiry in 2004, the Secretary of State for Transport confirmed his intention to make a HRO and to grant other consents for FSR. Planning permission was granted in 2006 and subsequently varied to allow revised phasing of FSR in 2008.

2 Phase 1 of FSR – now known as Berths 8 and 9 – has been constructed and has been operational since 2011. Phase 2 has yet to be implemented. The location of Phase 1 of FSR within the Stour and Orwell estuarine system is shown on Figure 1.1.

3 HPUK now propose to extend Berth 9 by some 190m, dredge a berth pocket and the approaches to the extended quay and dispose of the dredged material (the proposed scheme). The location of the proposed scheme in relation to the remainder of FSR is shown in Figure 1.2. Drawing A1 shows the extent of the proposed scheme in relation to the phasing for FSR.

4 An ES has been produced that addresses the effects of constructing and operating the proposed scheme in support of an application to the Marine Management Organisation (MMO) for a marine licence. This document is the Non-Technical Summary of the ES.
Figure 1.2  Location of the proposed scheme in relation to the remainder of FSR
2 NEED FOR THE PROPOSED SCHEME

1 Since 2003, when the original applications for FSR were made, there has been a significant increase in container ship dimensions. In addition, the number of these larger vessels calling at the Port of Felixstowe has increased.

2 Berths 8 and 9 were originally constructed to provide a two-berth container handling facility. However, it has become apparent that in order to maintain the capability of the berths to simultaneously handle two of the largest container ships due to operate in the market from 2013/14 (each of approximately 400m in length), Berth 9 needs to be extended by some 190m.

3 The extension would ensure that the Port of Felixstowe is in the best position to perform its function in the UK economy, to remain competitive and help secure the future prosperity of the port, its employees and the local economy generally.

3 DESCRIPTION OF THE CONSTRUCTION PHASE

1 The works would comprise the following:

   • dredging of materials present on the seabed, comprising 600,000m$^3$ (780,000 wet tonnes) of soft silt and 200,000m$^3$ (400,000 wet tonnes) of clay;
   • driving of steel piles to form the quay walls;
   • placement of granular reclamation material to raise the level up to quay / pavement level;
   • disposal of dredged material at the Inner Gabbard East (clay) and Inner Gabbard (silt); and,
   • the installation of low level ‘street’ lighting columns on the quay.

2 The construction phase is expected to take approximately 11 months. With 3 months lead in for design and mobilisation, a contract is expected to be awarded in January 2014.

4 DESCRIPTION OF THE OPERATIONAL PHASE

1 The operation of Berths 8 and 9, with the proposed quay extension in place, would allow for a maximum of two vessels up to 400m in length to be berthed simultaneously.

2 Berths 8 and 9 are currently serviced by 7 cranes and it is proposed that up to 10 cranes would be provided to service Berths 8 and 9, including the extension; this would provide an average number of 5 cranes per vessel. Surface water would drain from the proposed scheme via outfalls in the quay with appropriate interceptor arrangements (as now).

5 ALTERNATIVE OPTIONS CONSIDERED

Alternative locations

1 Given that the proposed scheme comprises an extension to the existing facility and an incremental step towards the completed FSR development, further assessment of alternative locations for the quay extension is not considered to be required (or practical).
2 The extension of the quay to the north of Phase 1 is not possible due to unfavourable ground conditions.

Alternative designs

3 Four options were considered prior to selection of the preferred design for the proposed scheme. The preferred option follows the same design as that adopted for the construction of Berths 8 and 9.

Alternative uses of dredged material

4 Alternative uses of dredged material have been considered and comprise:

- use as engineering fill within the reclamation;
- sediment replacement within the estuaries; and,
- habitat creation and enhancement.

5 The dredged material is not suitable for use as engineering fill due to its properties.

6 Sediment from maintenance dredging is currently placed at defined locations within the estuary system by the Harwich Haven Authority (HHA) as a mitigation requirement linked to previous projects. There is a surplus of material generated from routine maintenance dredging which can be used for sediment replacement and, as such, there is no requirement to or foreseen benefit from using dredged material from the proposed scheme in such a way.

7 Discussions have been held with the Environment Agency about the potential to use some of the dredged material as part of a habitat creation project in the lower Orwell estuary (a managed realignment scheme). This may be possible depending on the timing of the schemes and further discussions will be held to explore this potential use of the dredged material.

6 REQUIREMENT AND SCOPE FOR EIA

1 Through the screening process, the MMO has determined that the proposed scheme falls under the requirements of The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended). The scope of the EIA was defined through the submission of an Environmental Scoping Report to the MMO and receipt of a Scoping Opinion, upon which the MMO consulted.

7 ASSESSMENT METHODOLOGY

1 The characteristics of the existing (baseline) environment were defined, and the potential environmental impacts of the proposed scheme identified and assessed, through the following methods and activities:

- desk-based reviews, interpretation and assessment of existing data;
- site surveys, including a marine ecological survey and sediment quality survey; and,
- consultation.
2. The ES reports the findings of the EIA process. The following ‘marine’ environmental parameters were considered in detail within this process:

- hydrodynamic and sedimentary regime;
- marine ecology;
- waterbird populations;
- marine water and sediment quality;
- fisheries resource;
- marine archaeology; and,
- commercial and recreational navigation.

3. The ‘terrestrial’ implications of the proposed scheme (i.e. traffic, noise, air quality, landscape, socio-economics and coastal defence) were considered through a Statement of Environmental Compliance prepared for Suffolk Coastal District Council.

4. Where potential adverse impacts have been identified, mitigation measures have been recommended to reduce or avoid potential impacts to acceptable levels.

8. POTENTIAL EFFECTS OF THE PROPOSED QUAY EXTENSION AND DREDGING ON THE MARINE ENVIRONMENT

1. The EIA concludes that in general the proposed scheme would give rise to environmental impacts of low significance, all of which are well within the boundaries of the impacts predicted to be associated with the full, consented FSR development.

2. In terms of the potential for effect on habitats within the estuarine system, the proposed scheme is predicted to reduce the maintenance dredging requirement in the Harbour approaches and berths, the effect of which is to increase the background rate of intertidal volume gain in the Stour estuary and decrease the rate of intertidal volume loss in the Orwell estuary. Any effect on tidal currents and the wave climate would be of very low magnitude. It is concluded that the scheme does not have the potential to result in the loss in intertidal mudflat or saltmarsh, either directly or indirectly.

3. Given the small scale effects described above, the potential impacts on waterbird populations and the habitats that support these populations would be of negligible significance at worst. No intertidal habitat would be impacted and the subtidal footprint of the reclamation would be 1.8ha (approximately 6% of the subtidal reclamation area for the whole FSR project).

4. With regard to marine ecology, it is concluded that the residual impacts of the proposed scheme during the construction and operational phases would be of negligible significance. Although the proposed scheme would result in the loss of the ecological resource within the footprint of the quay extension and dredging, the biological community present has been shown to be of low diversity. A specific assessment has been undertaken with regard to the potential effect on the conservation objectives of the Stour and Orwell recommended Marine Conservation Zone (rMCZ). It is concluded that there is no significant risk to these conservation objectives.

5. The potential residual impacts of the proposed scheme with regard to the fisheries resource are predicted to be of negligible significance at worst. As a standard measure,
Notices to Mariners would be published by the HHA to inform marine users of the proposed construction works sufficiently in advance of the construction works.

6 A sediment quality survey has been undertaken and this demonstrates that there are no concerns with regard to contaminants within the sediment that would be dredged. The dredging and construction of the quay would disturb seabed sediments but any effect on water quality would be localised. It is concluded that the potential residual impacts of the proposed scheme on water quality, and the implications of this for the fisheries resource and marine ecology, would be of negligible significance at worst.

7 There is very low potential for marine archaeology to be present within the footprint of the proposed scheme due to the fact that the area has been extensively dredged in the past. Consequently, no significant impacts are predicted.

8 Finally, it is predicted that the proposed scheme would not have a significant residual impact on commercial and recreational navigation. However, the proposed scheme would deliver a benefit of major significance, in that it would maintain the ability of Berths 8 and 9 to accommodate two deep sea ships simultaneously.

9 POTENTIAL TERRESTRIAL EFFECTS OF THE PROPOSED SCHEME

1 With respect to the transport implications of the proposed scheme, as set out in the Statement of Environmental Compliance, there would be no impact to the existing transport network capacity and an exceedence of the forecast FSR transport demand is not predicted. Consequently there is no need to provide additional transport infrastructure due to the proposed scheme.

2 The construction and operation of the proposed scheme would not give rise to greater noise or vibration effects at any locations (including at the most sensitive properties) than those assessed for the FSR project consented in 2006. There would be some minor noise impacts during construction, but these would be below the limit established during the FSR application process for sensitive properties. Any impacts in the operational phase would be negligible.

3 The air quality assessment identified that the construction phase would have a temporary impact of minor adverse significance on local air quality (albeit of lower significance than and within the scope of the impact assessed in the 2003 ES). The operational impact of the proposed scheme is predicted to be negligible.

4 The impact of the proposed scheme on the landscape and visual environment is predicted to be of negligible significance and was fully encompassed within the scope of the assessment presented within the 2003 ES.

5 No impact on water quality due to surface water drainage or flood and coastal defence is predicted. However, the proposed scheme is predicted to have negligible to minor short term (construction phase) benefits on the local economy. This impact would fall within the wider benefit predicted in the 2003 ES.
10 POTENTIAL IMPACTS ASSOCIATED WITH THE DISPOSAL OF DREDGED MATERIAL AT THE INNER GABBARD AND INNER GABBARD EAST

1 It is proposed that the capital silt would be disposed of at the Inner Gabbard and that clay would be disposed of at the Inner Gabbard East disposal site. An assessment has been undertaken to determine the potential impact of such disposal.

2 It is proposed that the silt would be treated so as to disperse when it is deposited at the Inner Gabbard (behaving in the same way as maintenance dredged material that is currently disposed of at this site).

3 It is predicted that there would be no effect on the hydrodynamic and sedimentary regime during disposal activities. A worst case impact of negligible significance is anticipated with regard to impacts on navigation during disposal.

4 The proposed disposal of modified capital silt at the Inner Gabbard is not predicted to have any significant impacts on water quality, benthic ecology or the fisheries resource. It is concluded that there is no potential for significant environmental impacts to arise on completion of the disposal operation.

5 It is predicted that there would be a worst case impact of minor adverse significance on benthic invertebrate communities, due to localised smothering during the disposal of clay at the Inner Gabbard East. It is not considered possible to mitigate this potential impact. The potential impacts on all other environmental receptors (water quality, fisheries, navigation) are predicted to be of negligible significance at worst.

11 POTENTIAL FOR CUMULATIVE IMPACTS

1 The EIA Regulations require that an assessment is made of the potential for cumulative effects to arise. This should consider the impacts of the proposed scheme with other past, present and reasonably foreseeable (proposed) projects and was undertaken in this case.

2 There are two significant projects that have received planning permission and been granted HROs, but which have yet to be fully implemented, that are of relevance to the cumulative impact assessment. These projects are:

   - the residual elements of FSR, i.e. Berth 10 (forming the final part of the overall reconfiguration of Felixstowe South); and,
   - the Bathside Bay Container Terminal (BBCT).

3 Although Phase 1 of FSR was completed in 2011, the potential effects of the whole FSR project on the hydrodynamic and sedimentary regime (as well as the marine ecology and waterbird populations) of the estuaries were taken into account in the cumulative assessment. This approach was adopted because the predicted effects associated with Phase 1 will not be fully reflected in our current understanding of morphological change, due to the fact that the latest topographic and bathymetric data on which that understanding is based dates from 2010/2011.
Cumulative assessment of development in the Stour and Orwell estuaries

4 No cumulative impacts are predicted with respect to marine water and sediment quality, fisheries, marine archaeology or commercial and recreational navigation.

5 Cumulative impacts are, however, predicted to arise with respect to marine ecology and waterbird populations. A worst case cumulative impact of minor adverse significance is anticipated with regard to the loss of waterbird feeding area due to predicted changes in tidal range. The main contributing factor to this effect is the BBCT, with Phase 1 of FSR contributing to a lesser extent; the cumulative effect on the tidal range is less than the sum of the schemes in isolation. This cumulative impact is not possible to mitigate, however, the effect due to the BBCT will be compensated for through a consented managed realignment scheme in Hamford Water.

6 The most significant beneficial cumulative impact predicted relates to the indirect impact on intertidal morphology and, therefore, waterbird populations; this is assessed as a moderate beneficial cumulative impact. With mitigation (through sediment replacement), the BBCT is predicted to have no net effect on intertidal erosion/accretion rates. Conversely, FSR is predicted to decrease the rate of intertidal erosion and increase the rate of accretion. The cumulative effect will be a significant reduction in the maintenance dredging requirement, resulting in a reduction in the rate of intertidal erosion, or increase in the rate of accretion. On the basis of the above, the cumulative effect of the BBCT and FSR was predicted to be of moderate beneficial significance in terms of the ongoing effect on the area of intertidal within the system.

Cumulative assessment of disposal of capital material at the Inner Gabbard East

7 The potential cumulative impact of the disposal of clay at the Inner Gabbard East has been assessed. The assessment assumed the placement of 400,000 m$^3$ of dredged clay at the site associated with other capital projects, in addition to the disposal associated with the proposed scheme.

8 It is concluded that any impact on tidal currents would be of negligible significance outside of the disposal site. It is recognised that disposal of dredged material would reduce water depths locally; however, it is concluded that water depths are too great for this to affect waves and there would be a minimal effect on sediment transport.

9 A cumulative impact of moderate adverse significance was anticipated due to the smothering of benthic communities at the Inner Gabbard East disposal site, arising from the deposition of an estimated 400,000 m$^3$ of clay from BBCT and FSR. However, this impact needs to be considered in light of the fact that the site has been licensed for the disposal of capital dredged material.

12 ASSESSMENT UNDER THE REQUIREMENTS OF THE WATER FRAMEWORK DIRECTIVE

1 A compliance assessment under the Water Framework Directive has been undertaken. The assessment concluded that the construction of the quay extension, dredging and the presence of the new quay and berthing pocket could potentially affect the status of the Harwich Approaches water body. Further detailed assessment of these activities was undertaken and determined that the above aspects would not cause deterioration in water body status, potential problems with respect to the ability of the water body to
meet its objectives in the future or compromise the mitigation measures in place for the water body.

13 HABITATS REGULATIONS ASSESSMENT

1 An assessment of the potential for the proposed scheme to affect sites designated for nature conservation has been undertaken. The assessment concluded that the proposed scheme has the potential (in theory) to have a significant effect on the Stour and Orwell Estuaries SPA and Ramsar site due to predicted (minor) alterations to the hydrodynamic and sedimentary regime. However, the effects of the proposed scheme are predicted to be of very small magnitude and are not expected to adversely affect the structure or function of the intertidal mudflat and saltmarsh, or the waterbird populations, of the Stour and Orwell Estuaries SPA and Ramsar site (i.e. it is not predicted to adversely affect the integrity of the European marine site).

14 SUMMARY AND CONCLUSION

1 The proposed scheme is required to maintain the capability of the Port of Felixstowe to handle two of the largest container ships due to operate in the market from 2013/14 simultaneously. This capability is necessary to ensure that the port is in the best position to remain competitive and to help meet the UK’s need for deep-water berths and secure its future prosperity, along with that of the local economy. The proposed scheme would help to achieve a sustainable marine economy by directly catering for long term economic growth, in addition to contributing to local employment.

2 The effect of the works in the estuarine system on waterbird populations, marine ecology, the fisheries resource, water and sediment quality, archaeology and navigation are predicted to be of negligible significance at worst. Beyond this the risk to the marine environment associated with the offshore disposal of dredged material is predicted to be negligible.

3 The effects of the works on the terrestrial receptors in and around the port were fully encompassed within the 2003 ES. The proposed works are anticipated to result in some minor, short term impacts with respect to noise and air quality; however any impacts during operation would be negligible. Impacts on transport, the landscape and visual environment and surface water drainage would be negligible at worst. With a benefit predicted for the local economy.

4 It is further concluded that, while the proposed scheme does have the potential to have a likely significant effect on European designated sites, it would not adversely affect site integrity. The Water Framework Directive compliance assessment concludes that the proposed scheme would not affect the status of the Harwich Approaches water body.

5 The proposed scheme is not predicted to compromise the integrity of the surrounding coastal or marine habitats or result in any significant adverse impacts (including cumulative impacts) on other environmental, social or economic parameters. There is no significant risk of the proposed scheme hindering the conservation objectives set out for the Stour and Orwell rMCZ and it does not conflict with the Marine Policy Statement of the Ports National Policy Statement.