



# Keadby Terminal Assisted Outfall Design and Access Statement incorporating Planning Statement

ENVIMMI1001478-GBV-ZZ-00-RP-I-00004

*Version P03, November 2018*

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Environment Agency  
Horizon House, Deanery Road,  
Bristol BS1 5AH  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)  
[www.gov.uk/environment-agency](http://www.gov.uk/environment-agency)

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# 1. Introduction

## 1.1. Purpose

This statement forms a combined design, access and planning statement in support of a planning application by the Environment Agency to install one motor control centre (MCC) kiosk and one standby generator kiosk at Keadby Terminal Assisted Outfall (TAO). The proposed kiosks are associated with permitted development works to refurbish the TAO.

This statement has been prepared by GBV JV Ltd. on behalf of the Environment Agency.

## 1.2. The Applicant

The Environment Agency, which was established by the Environment Act 1995, is a non-departmental public body, with statutory responsibility for flood management and defence in England. It plays a central role in delivering the environmental priorities of Central Government through its functions and roles as environmental regulator, an environmental operator, monitor of the state of the environment, advisor on environmental policy, and a promoter of scientific research in support of these roles. It exercises a general supervision over all matters relating to flood defence. Under the Water Resources Act 1991, it has permissive powers for the management of flood risk arising from designated Main Rivers and the sea.

## 1.3. Background to the Project

### 1.3.1. Function of Keadby TAO

Keadby TAO is located at the confluence of the River Torne (Three Rivers system) and the River Trent. The River Torne (Three Rivers) system drains a large area of low-lying land between the River Trent and Doncaster. Effective and reliable operation of the system is important for managing flood risk.

### 1.3.2. Refurbishment of Keadby TAO

Keadby TAO was originally commissioned in the 1940s and refurbished in 1991. It is now nearing the end of its design life and components are becoming increasingly subject to breakdowns. By current standards the TAO pumping station has a large carbon footprint and the pumps are relatively inefficient in energy usage. Maintaining operation of Keadby TAO over the long term is part of the Defra approved Isle of Axholme Flood Risk Management Strategy.

The refurbishment of Keadby TAO involves several different components which fall under different consenting regimes. The Environment Agency submitted a letter to NLDC that set out the proposed consenting strategy on 5th October 2018. No comment had been received from NLDC at the time of submitting the planning application that this document supports.

Table 1 summarises the components of the refurbishment of Keadby TAO according to the consenting regime they fall under.

**Table 1: Keadby TAO Refurbishment Consenting Regime and Project Components**

| Consenting Regime  | Project Component  |
|--|--|
| <p>Planning Application under the Town and Country Planning Act 1990</p> | <p>Two kiosks on the southern bank of the TAO forebay:</p> <ul style="list-style-type: none"> <li>• Motor Control Centre (MCC) kiosk to operate new electric pumps.</li> <li>• Standby diesel generator.</li> <li>• Reprofiting the existing grassed bank to create a level plateau for the new kiosks and associated access. This will include a sheet pile retaining wall for the plateau; the toe of the sheet pile wall will be set within the slope of the existing grassed bank at a level of 1.5mAOD.</li> </ul> <p>To provide improved screening of the pumping station building and the new kiosks, gaps within an existing hedgerow along the north side of South Bank road will be filled in with tree and hedgerow planting.</p>   |
| <p>Marine Licence under the Marine and Coastal Access Act 2009</p>       | <p>Extension and refurbishment works to the tidal River Trent outfall:</p> <ul style="list-style-type: none"> <li>• Modifying the existing River Trent outfall by installing a new river wall in front of the existing outfall extent. The existing outfall includes a concrete apron below water level which extends between the outfall wing walls; the new river wall will be installed immediately in front of that apron. Counterforts will connect the new wall to the existing river wall to form cells that connect to the existing gravity culverts. Penstocks will be installed on the outfall points from the new wall.</li> <li>• Replacement of existing tidal flaps on the gravity culverts with fish-friendly low maintenance types, which will close more slowly on incoming tides to allow time for fish and eels to pass upstream from the River Trent to the River Torne.</li> <li>• Replacing the existing damaged fendering in front of the outfall with an impact barrier suitable to protect the outfall from impact caused by river traffic (e.g. circular 1m diameter piled fendering).</li> <li>• The existing control kiosk on top of the outfall will also be replaced with a new like-for-like kiosk.</li> <li>• A half-lane road closure of a section of the B1392 adjacent to the outfall will be needed to facilitate this work and has already been agreed in principal with North Lincolnshire Council highways team.</li> </ul> |

| Consenting Regime   | Project Component  |
|---|--|
| Permitted Development:<br>GDPO Sched 2, Part 13, Class D (f)  | Refurbishment of existing building and structures: <ul style="list-style-type: none"> <li>• New penstocks on upstream side (River Torne) side of the gravity culverts.</li> <li>• Replacing the existing five diesel-driven pumps and one electric pump with six identical fish-friendly electrical axial-flow pumps within the existing pumping station building.</li> <li>• Repairs to extend the design life of the gravity culverts and pumped discharge culverts.</li> <li>• Restoration of external fixtures of the existing building.</li> <li>• New transformer for a new electricity supply connection within a fenced compound on the southern bank of the TAO forebay; this will be sited on the same plateau as the new MCC kiosk and standby diesel generator.</li> <li>• Provision of a temporary kiosk to house temporary switchgear needed to facilitate the change across to a new electricity connection. The kiosk will be approximately 2m × 3m in area, sited within an area of coppiced hazel alongside the pumping station access road. Some hazel trees will need to be cut to accommodate this, but the kiosk and supporting concrete pad will be removed at the end of construction and the trees allowed to regrow.</li> <li>• General repair and maintenance of the existing pumping station building including painting and removal of redundant louvres on the eastern wall, replacement of fenestration and basic landscaping improvements to dilapidated areas.</li> </ul> |
| Permitted Development:<br>GDPO Sched 2, Part 4, Class A   | Temporary use of an existing laydown area within the TAO site, comprising a fenced area of hardstanding next to the diesel tanks, as a construction compound. The compound will include office cabins, equipment storage areas and material laydown areas.   |
| Permitted Development:<br>GDPO Sched 2, Part 11, Part B<br><br>An Application for Prior Notification of Proposed Demolition will be made. | Demolition of redundant garage, stores and toilet building, to allow greater turning space for large vehicles entering the pumping station and TAO forebay compound.   |

### 1.3.3. This Proposal

This planning application is for the installation of two kiosks on the southern bank of the TAO forebay, including reprofiling the existing grassed bank and associated access.

## 1.4. The Decision-Making Framework

The proposal is located within the administrative area of North Lincolnshire District Council (NLDC), which is the relevant local planning authority responsible for determining this planning application.

## 1.5. Environmental Impact Assessment (EIA) Screening

The installation of two kiosks as part of refurbishing Keadby TAO has been considered against provisions of The Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017 (the 'EIA Regulations').

The project is not listed in Schedule 1 of the EIA Regulations, and so is not classified as Schedule 1 Development.

The installation of two kiosks falls within the descriptions of development in Schedule 2(10[h]) of the EIA Regulations. However, no part of the proposed project is within a sensitive area, and the development area is less than the 1ha threshold for this type of development. This means the project is not classified as Schedule 2 Development and EIA is not needed.

The Environment Agency submitted a request for a Screening Opinion from NLDC on 5th October 2018. No response had been received from NLDC at the time of submitting the planning application that this document supports.

## 1.6. Land Ownership

Drawing ENVIMMI1001478-GBV-ZZ-00-DR-V-20005 (Location Plan) illustrates the planning application boundary. All the land within the application boundary is owned by the Environment Agency.

## 1.7. Format of the Design and Access Statement

Section 2 of this statement sets out the design rationale for the proposal and describes the design and access components. Chapter 2 describes the relevant policy background and Chapter 4 provides an appraisal of the development against planning policy. The relevant policy areas to this application are:

- Landscape and Visual Amenity.
- Nature Conservation.
- Flood Risk and Surface Water Drainage.
- Historic Environment.
- Noise and vibration.

This statement should be read in conjunction with the following documents which accompany this planning application:

- Location Plan (Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-20005).
- Site (Block) Plan (Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-20006).
- General Arrangement Plan (Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-20008).
- Site Elevations (Drawings ENVIMMI1001478-GBV-ZZ-00-DR-I-20009 and ENVIMMI1001478-GBV-ZZ-00-DR-I-20010).
- Hedgerow Improvement Planting Plan (Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-30001).
- Environmental Constraints Plan (Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-20007).
- Arboricultural Impact Assessment (October 2018).
- Ecological Report (November 2018).
- Flood Risk Assessment (November 2018).
- Heritage Desk Based Assessment (July 2018).
- Environmental Action Plan (November 2018).

## 2. Proposal

### 2.1. Need for Development

The existing diesel pumps at the TAO pumping station are to be replaced with electric fish-friendly pumps, with power supplied from the electricity distribution network, as part of refurbishing the TAO. A new Motor Control Centre (MCC) panel will be needed to operate the pumps, and a standby diesel generator will also be needed in case of mains power supply failure.

There is insufficient space in the existing pumping station building to house the MCC panels and standby generator, meaning these components need to be housed in new kiosks sited outside of the existing buildings. The existing grassed bank on the south side of the TAO forebay was selected as the only viable option to locate these new kiosks, considering operational needs and existing site constraints. These factors are described further in the following sections.

### 2.2. Design

#### 2.2.1. Location

Keadby TAO is located off Station Road (B1932), Keadby, North Lincolnshire, DN17 3BP, at grid reference NGR SE 83517 11299. Keadby TAO is situated at the confluence of the River Torne (Three Rivers system) and the River Trent, within the village of Keadby and approximately 5.5km west of Scunthorpe town centre.

The proposed development is located on an existing grassed bank within the TAO operational site, on the south side of the TAO forebay. The location is shown on Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-20005 (Location Plan).

#### 2.2.2. Design Process

The design rationale for the development has been informed and constrained by:

- The need for the new kiosks to be as close to the pumping station as possible to minimise the need for additional wiring and other connecting infrastructure and to ensure safe operation of the facility.
- The layout of the existing Keadby TAO and extent of land owned by the Environment Agency.
- The land surrounding the TAO being unavailable due to existing use for residential and commercial developments.
- The presence and location of existing utility services at the TAO site; this includes the existing diesel fuel tanks and fuel supply line that will feed the standby generator, as well as other services that need to be unaffected by the works.
- The layout of, and the need to retain, access to existing infrastructure within the TAO.
- The need to provide suitable access for the new kiosks.
- The potential effects to flood risk from placing new infrastructure within the TAO site.
- The potential environmental effects of the construction and operation of the development.

#### 2.2.3. Amount

The permanent development requiring planning permission will comprise:

- A base slab on a reprofiled area of existing grass bank with a steel sheet pile retaining wall to create a level platform.
- One new MCC kiosk.
- One standby diesel generator kiosk.
- A new access track to the two new kiosks, connecting to existing roads within the TAO site boundary. The track will also provide access to the new transformer compound.

The development area is 984m<sup>2</sup>, including all landscaping and tree planting. The footprint of the development is dictated by the size of the kiosks needed to house the MCC panels and diesel generator, and the amount of land needed to create the level plateau and access for those kiosks.

#### 2.2.4. Layout

The development will be located on the southern bank of the TAO forebay. Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-20006 (Site Plan) illustrates the proposed layout.

For clarity, the Site Plan also identifies the works to be carried out under Permitted Development rights and the works for which a Marine Licence is required.

The layout of the development is influenced by the required size and shape of the MCC and diesel generator kiosks; the size, shape and existing profile of grassed bank where the kiosks are to be sited; and, the need for the reprofiled grass bank not to reduce the flood water storage capacity within the TAO forebay. To achieve this, the toe of the new sheet pile flood wall (i.e. where the wall intersects the existing bank) will be at 1.5mAOD, the 1 in 1,000 annual chance flood water level.

The finished floor level of the kiosks sited on the reprofiled section of bank will be 3.0mAOD.

#### 2.2.5. Scale

The two new kiosks will have the following dimensions:

- MCC kiosk: 17m long × 5m wide × 3.3m high (total external floor space of 85m<sup>2</sup>)
- Standby diesel generator kiosk: 15m long × 4.5m wide × 4m high (total external floor space of 67m<sup>2</sup>). There will be a 1.5m high exhaust pipe and silencer unit mounted on top of one part of the kiosk. The total height of the kiosk plus the exhaust and silencer unit will be 5.5m.

The total gross external floor space of the new kiosks will be 152.5m<sup>2</sup>.

The area of bank that will be reprofiled is approximately 660m<sup>2</sup>. The level plateau for the kiosks to be placed on will be lower than the crest of the current bank.

#### 2.2.6. Appearance

The MCC kiosk will be constructed from glass reinforced plastic (GRP) semi-gloss coloured Holly Green to BS 4800 Ref 14-C-39. The standby diesel generator will be housed within a metal ISO-style container, to provide acoustic attenuation, with an exhaust pipe and exhaust silencer on top of the container. The container will be painted Holly Green, whilst the exhaust and silencer will be silver-grey.

The base slab will be concrete; most of the base slab will be beneath the kiosks and not visible.

The new access track will be hard standing.

#### 2.2.7. Landscaping

One hedgerow tree and a hedgerow mix will be planted to infill three existing gaps in the hedgerow along the southern boundary of the application site. These will provide additional screening to the TAO pumping station building and the new kiosks from residential properties, as well as providing ecological improvements.

Drawing ENVIMMI1001478-GBV-ZZ-00-DR-I-30001 illustrates the proposed planting plan.

### 2.3. Access

The application site is within the existing TAO site on South Bank road, accessed from Station Road (B1932). South Bank road also provides private access to residential properties west of the TAO. The application site will be accessed via the existing gated access points between South Bank and the TAO forebay and pumping station. No additional parking facilities will be provided.

The application site is not open to members of the public or unauthorised personnel. Access will be limited to authorised personnel only. Employees and authorised visitors will access the site via the existing road network and enter via the existing controlled entrance gate.

Existing palisade fencing will be maintained around the perimeter of the application site to ensure that access into the site is restricted and that the site is secure.

## 2.4. Construction Management

The Environment Agency will manage the construction of the two kiosks as part of the wider refurbishment of Keadby TAO. Environmental impacts will be managed through the implementation of a project Environmental Action Plan (EAP). A draft EAP for the whole refurbishment works is provided with this application. The EAP will be kept up to date and will be made available to all construction personnel.

# 3. Policy Context

This section identifies the national and local planning policy guidance relevant to the development.

## 3.1. National Planning Policy Framework 2018

Policies contained in the National Planning Policy Framework (NPPF) that are of relevance to determination of this application include:

- Presumption in favour of sustainable development.
- Approving development that accords with the development plan without delay.
- Achieving well-designed places.
- Meeting the challenge of climate change, flooding and coastal change.
- Conserving and enhancing the natural environment.
- Conserving and enhancing the historic environment.

## 3.2. North Lincolnshire Local Plan (2003) Saved Policies

The North Lincolnshire Local Plan was adopted in May 2003, the plan is gradually being replaced by the Local Development Framework. Some of the policies have been replaced following the adoption of the Core Strategy and the Housing and Employment Land Allocations Development Plan Document. The following saved policies are relevant to the determination of this application:

- LC1 Special Protection Areas, Special Areas of Conservation and Ramsar sites.
- LC2 Sites of Special Scientific Interest and National Nature Reserves.
- LC4 Development affecting site of local nature conservation importance
- LC5 Species protection.
- LC7 Landscape protection.
- LC12 Protection of trees, woodland and hedgerows.
- HE5 Development affecting Listed Buildings.
- HE8 Ancient monuments.
- DS1 General requirements.
- DS13 Groundwater protection and land drainage.
- DS14 Foul sewage and surface water drainage.
- DS16 Flood risk.

## 3.3. Core Strategy (2011)

The Core Strategy was adopted in June 2011 and forms the most important element of the North Lincolnshire Local Development Framework, setting out the long-term vision for North Lincolnshire up to 2026. The following policies are relevant to the determination of this application:

- CS5 Delivering quality design in North Lincolnshire.
- CS6 Historic Environment.

CS16 North Lincolnshire's landscape, greenspace and waterscape.

CS17 Biodiversity.

CS19 Flood Risk.

### 3.4. Emerging New Local Plan

North Lincolnshire District Council are preparing a new single Local Plan for North Lincolnshire. Once agreed and adopted it will replace the current North Lincolnshire Local Plan, Core Strategy and the Housing and Employment Land Allocations Development Plan Documents. Development of the new Local Plan is still in the early stages with a draft Local Plan expected to be published for consultation in 2019.

## 4. Appraisal

This section considers the principle of the development and addresses key planning and environmental issues. The development is on the southern bank of the TAO forebay, with residential areas located directly south. The key issues are:

- Landscape and Visual Amenity.
- Nature Conservation.
- Flood Risk and Surface Water Drainage.
- Historic Environment.
- Noise and Vibration.
- Water Framework Directive compliance.
- Information for Habitats Regulations Assessment.

### 4.1. Landscape and Visual Amenity

A review of the baseline landscape and visual conditions at Keadby TAO and the surrounding area has been undertaken via a desk-top survey and site visit by a landscape architect. The review identified the site as being part of a wide, flat developed floodplain wherein the site is visually enclosed with views of the existing pumping station and TAO forebay localised to the immediate area surrounding the TAO site.

The value of the landscape character is somewhat diminished due to the high proportion of industrial and large agricultural units and activities at ground level (including the use of cranes), the presence of the power station, and the number of pylons (visible from the Keadby and Stainforth Canal Bridge).

Land use to the south of the TAO site is residential but houses close to the application site and existing pumping station buildings are likely to have filtered and oblique views of the site due to screening from vegetation and orientation of the properties.

Land use to the north includes industrial sites (Keadby Port Services and Redgates Contractors site); the sensitivity of these receptors is low. North-west of the site is an abandoned public house, The Barge Inn, situated on the right bank of the Keadby and Stainforth Canal. Views from the canal would be slight and screened by existing commercial buildings and vegetation, at odds with the direction of travel, and experienced in a wider industrial setting.

Views to the application site from Station Road will be partially screened by existing vegetation and buildings, including houses and the existing pumping station. Due to the existing pumping station buildings being situated at the back of the highway footway the streetscape is narrowed and the concrete elevations, and galvanised steel walkways opposite (the viewing deck above the outfall), further industrialise the character of this location.

Keadby Lock controls the waters between the Keadby and Stainforth Canal and the River Trent. It is Grade II Listed and a Scheduled Monument and lies approximately 86m north of the application site. There is no view between Keadby Lock and the application site due to the interceding Port Services yard and a belt of mature evergreen vegetation along the boundary of the services yard and the B1392. Therefore, there will be no effect on the setting of Keadby Lock.

There are no designated Public Rights of Way, other than adjacent highway routes, which currently have limited visibility into the application site. A local cycle route runs along the south side of the Keadby and Stainforth Canal. As per above, views from the canal would be slight, at odds with the direction of travel, and experienced in a wider industrial setting.

In accordance with Local Plan (saved policies) policy LC12, an arboricultural impact assessment and method statement has been prepared for the proposed development. The layout of the kiosks and access tracks means that no trees or hedgerow will need to be removed for the development, although some pruning may be needed to facilitate some works. A planting plan has been prepared for the development to infill gaps in the existing hedge along the south boundary of the application site. This will provide additional visual screening for the two new kiosks as well as for the existing buildings (see section 2.2.7 for further details).

In conclusion, the construction of two kiosks on the southern bank of the TAO forebay will have no material effect on landscape and visual amenity and is therefore considered to be in accordance with the NPPF, Core Strategy policy CS16 and Local Plan (saved policies) policy LC7.

## 4.2. Nature Conservation

The NPPF states that the planning system should contribute to and enhance the natural and local environment. In accordance with the NPPF, Core Strategy policy CS17, and Local Plan (saved policies) policies LC1, LC2, LC4, LC5 and LC12, the development and construction methods have been designed to avoid adverse impacts to biodiversity and nature conservation including trees and hedgerows.

An Extended Phase 1 Habitat Survey of the application site and immediate surroundings was carried out in July 2018, and a desk-top study undertaken including obtaining records from the Lincolnshire Environmental Records Data Centre. These studies updated and reviewed the findings of a previous Extended Phase 1 Habitat Survey and Preliminary Ecological Appraisal (PEA) carried out in 2016. An Ecology Report has been prepared for the TAO refurbishment and is provided with this planning application.

The 2018 survey confirmed the findings of the 2016 PEA that improved grassland, maintained for amenity use, is the main habitat type within the application site, with an unmanaged hedgerow along the southern boundary containing blackthorn, hawthorn and plum, with a single alder located within the hedgerow. The hedgerow habitat is suitable for nesting birds. Other habitat types at the Keadby TAO, but outside the application site, include semi-improved grassland, scrub, tall ruderal and marginal vegetation.

The mature trees and the buildings in the TAO site were inspected to determine their suitability to support bat roosts. The alder located on the southern border of the application site was considered to have negligible potential to support bats. Overall, the TAO site provides good foraging and commuting habitat for bats with large areas of standing water (flow stemmed by pumping station) and a number of trees/scrub lines and scattered trees and grassland areas, providing suitable habitat for invertebrates (prey for bats) as well as linear features for commuting. Lighting required for safe operation of the kiosks will be narrow spectrum, emit minimal UV light and be hooded or directed away from vegetation designed to minimise effects on bats and other nocturnal animals.

The Keadby TAO forebay, including the application site, is within the eastern end of the Three Rivers Local Wildlife Site (LWS). The LWS is notified as an important corridor of wildlife habitats, including aquatic habitats and the relatively unmanaged bank vegetation. However, the construction of two kiosks on the southern bank of the TAO forebay will only affect an area of improved grassland that is managed for amenity use as part of current maintenance of the TAO site. The toe of the new sheet pile wall required to create a level plateau for the kiosks will be sited

part-way up the existing grass bank and will not affect aquatic or marginal habitats. Therefore, the proposal will not have any adverse effects on the interest features of Three Rivers LWS.

The eastern boundary of the application site is located 23m from the Humber Estuary Special Area of Conservation (SAC), Ramsar Site and Site of Special Scientific Interest (SSSI). These internationally (SAC, Ramsar) and nationally (SSSI) protected sites are designated for their coastal and estuarine habitats, migratory fish species, wintering and migratory wetland birds and breeding wetland birds. The proposal to install two kiosks on the southern bank of the TAO forebay will have no direct or indirect impacts on the designated habitats or species (see Section 4.7 for further details).

In conclusion, it is considered that the development will conserve biodiversity and the natural environment in accordance with the requirements of the Core Strategy policy CS17 and Local Plan (saved policies) policies LC1, LC2, LC4, LC5 and LC12.

### 4.3. Flood Risk and Surface Water Drainage

A Flood Risk Assessment has been prepared for the proposal and is provided with this application. The construction of the two kiosks will require reprofiling of the existing grass bank, including a steel sheet pile wall retaining wall, to create a level platform. The toe of sheet pile wall (i.e. the interface between the sheet pile wall and the existing bank slope) will be at 1.5m AOD, above the 1 in 1,000-year annual chance flood level. This means the proposal will not reduce flood water storage capacity in the TAO forebay, and will not cause increased flood risk within or outside of the application site. Surface water from the kiosks and plateau will be drained via a soakaway with some surface flow into the TAO forebay possible during periods of heavier rainfall.

Keadby TAO is located within Flood Zone 3, but the development is water compatible, which under the Sequential Tests means the development is appropriate in this flood zone and the Exception Test is not required.

The construction of two kiosks on the southern bank of the TAO forebay forms part of the wider refurbishment of Keadby TAO, which is required to manage water levels and prevent flood events occurring within the River Torne catchment. The construction of the two kiosks will not result in an increase in flood risk to the surrounding area, and it is therefore considered to accord with the provisions of the NPPF, Core Strategy policy CS19 and Local Plan (saved policies) policy DS16.

### 4.4. Historic Environment

An archaeological desk-based assessment has been undertaken for the Keadby TAO and the surrounding area. This identified limited archaeological findings within the boundary of the Keadby TAO. The only heritage asset present within the wider area that could be affected by the development is Keadby Lock Scheduled Monument and Grade II Listed Building. However, there is no view between Keadby Lock and the application site due to the interceding Port Services yard and a belt of mature evergreen vegetation along the boundary of the services yard and the B1392. Therefore, there will be no effect on the setting of Keadby Lock (see also Section 4.1).

The archaeological desk-based assessment found that previous ground works within the Keadby TAO site have found no significant archaeological remains within the vicinity of the pumping station. Due to previous construction activities for Keadby TAO and associated structures, including a retaining wall constructed within the forebay in the late 20th century and installation of numerous below ground utility services, it is considered that all the application site has been previously subject to significant ground disturbance. Therefore, the potential for construction works to encounter any buried archaeology of significance is considered unlikely. As a precautionary measure, an archaeological watching brief will be carried out during works to reprofile the southern bank of the TAO forebay, unless the County Archaeologist advises that a watching brief is not necessary.

The reprofiling of the southern bank of the TAO forebay and construction of two kiosks is expected to have no significant impacts on the historic environment, and is therefore considered to be in accordance with the NPPF, Core Strategy policy CS6, and Local Plan (saved policies) policies HE5 and HE8.

## 4.5. Noise and Vibration

The standby diesel generator will be housed within an acoustically-controlled container, but operation of the generator will generate noise which may be audible to nearby residents. However, the purpose of the generator is to provide power to the electric pumps in the event of an electricity supply failure and it will not be used during normal operations. The generator will require testing when it is first installed, and then once every month to ensure it is in an operationally functional state if it is needed.

Other than the testing regime, the generator will not be operated unless there is a power failure to the site at a time when the electric pumps need to be used. It is therefore considered that any noise impact to nearby residents will be infrequent and not be significant, and in accordance with the NPPF.

## 4.6. Compliance with Water Framework Directive

The project has been assessed against the requirements of the Water Framework Directive (WFD). The Application Site is situated on the south bank of the River Torne / Three Rivers (from Mother Drain to River Trent) WFD waterbody (GB104028064340). The River Torne / Three Rivers is designated as an Artificial water body, classified as being at overall Moderate Ecological Potential.

Works to install a sheet pile wall as part of reprofiling the south bank of the TAO forebay were identified as having potential to affect the amount of marginal habitat available in the forebay, which in turn could negatively affect macrophytes, invertebrates and fish. The presence of new sheet pile wall could also affect the hydromorphology of the waterbody. However, the scheme has been designed so that the toe of the new sheet pile wall is part way up the grassed bank, at the 1 in 1,000 annual chance flood level, and as such will not affect marginal habitats. The base of the new wall being above normal and flood water levels also means the hydromorphology of the waterbody will not be altered.

Overall, the proposed development will not adversely affect the WFD status of the River Torne / Three Rivers waterbody. As part of refurbishing the TAO pumping station and outfall, new fish-friendly pumps will be installed, and new tidal flap valves will be installed that will allow time for fish to move between the River Trent and River Torne (Three Rivers) before fully closing on an incoming tide. This will provide a positive effect on fish migration and therefore on the fish Biological Quality Element of the River Torne /Three Rivers and River Trent WFD waterbodies.

## 4.7. Information for Habitats Regulations Assessment

The project has been evaluated against the requirements of Regulation 63 (1) of the Conservation of Habitats and Species Regulations 2017 ("Habitats Regulations").

The eastern boundary of the planning application site is located 23m from the Humber Estuary SAC and Ramsar Site, designated for their coastal and estuarine habitats, river and sea lamprey, grey seals, wintering and migratory wetland birds and breeding wetland birds. The proposal to install two kiosks on the southern bank of the TAO forebay is outside of the Humber Estuary designated site, will not involve any in-channel working, and is located landwards of the existing flood embankment, road and pumping station building which screen the works. The grass bank area proposed for the kiosks does not provide any supporting habitat for the interest features. Therefore, it will have no direct or indirect impacts on the designated habitats or species.

Overall, the installation of two kiosks on the south bank of the TAO forebay is not likely to have a significant effect on any qualifying features of the Humber Estuary SAC or Ramsar Site.

## 5. Conclusion

The development of two kiosks on the southern bank of the TAO forebay are part of the wider refurbishment works of Keadby TAO, which will reduce the risk of a flood event caused by pump failure or culvert blockage.

The proposals are compliant with the objectives of the NPPF and the proposed design responds positively to relevant planning policies with regard to landscape and visual amenity, nature conservation, flood risk and the historic environment, and are compliant with the requirements of the Water Framework Directive and the Habitats Regulations. The development includes appropriate measures to minimise the potential adverse impacts.

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