

# A63 Castle Street Improvement, Hull

## 6.4 Environmental Statement Non Technical Summary



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## Links for further information

Information about the Planning Act 2008 and the Planning Inspectorate can be found online at: <http://infrastructure.planninginspectorate.gov.uk>

You can view the Development Consent Order application, including the Environmental Statement, online at: <https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/a63-castle-street-improvement-hull/>

**You can also view hard copies of the Environmental Statement at the following locations:**

- Hull Central Library, Albion Street  
Telephone: **01482 210 000**
- Bransholme Library, Northpoint Shopping Centre  
Telephone: **01482 331 234**
- Ings Library, Savoy Road,  
Telephone: **01482 331 250**
- Gipsyville Library, Hessle High Road,  
Telephone: **01482 616 973**
- Avenues Library, Chanterlands Avenue,  
Telephone: **01482 331 280**
- Holy Trinity Church, Kings Street,  
Telephone: **01482 224 460**
- Hull City Council, Guildhall,  
Telephone: **01482 300 300**
- Highways England, Lateral, 8 City Walk, Leeds, LS11 9AT,  
Telephone: **0300 470 2450**



## 1 – Introduction

At Highways England we believe in a connected country and our network makes these connections happen. We strive to improve our major roads and motorways – engineering the future to keep people moving today and moving better tomorrow.

We want to make sure all our major roads are more dependable, durable and, most importantly, safe. That's why we're delivering £15 billion of investment on our network – the largest investment in a generation.

The A63 Castle Street improvement scheme is a critical part of this investment and will improve journeys through Hull, which is great news for the local and regional economy.

In this document we describe the A63 Castle Street improvement scheme and summarise the detailed environmental assessments we have carried out so far. We describe why the improvements are necessary, the potential effects on the environment and how we propose to minimise these effects.

This scheme is classified as a Nationally Significant Infrastructure Project which means we have to submit an application for a Development Consent Order to the Secretary of State through the Planning Inspectorate.

We are required to undertake an Environmental Impact Assessment in line with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended). An Environmental Statement has been submitted as part of the Development Consent Order application and sets out our assessment of the likely environmental effects of the improvements.

## 1.1 – Environmental Impact Assessment

An Environmental Impact Assessment is an assessment of the consequences of a major project which affect the natural, built and social environments.

The findings of the Environmental Impact Assessment are presented in the Environmental Statement which is a key part of the documents submitted in support of the Development Consent Order application. Its principal purpose is to assess the likely significant effects of the scheme on the environment, and to enable an informed decision to be made on whether or not the Development Consent Order can be granted.

The objectives of the Environmental Statement are to provide information, advice and reports to:

- present the assessment of environmental impacts and opportunities in the development of the design
- enable the minimisation of environmental impacts through design, and the identification of additional environmental mitigation measures where required
- identify opportunities to provide environmental improvements where possible
- contribute to the information about the scheme which may be presented at any public consultation
- ensure that decision making about the scheme is based on sound environmental information and takes environmental effects into account

We have used the Design Manual for Roads and Bridges <http://www.standardsforhighways.co.uk/ha/standards/dmrb/index.htm> to guide the environmental assessment of the scheme. The significance of environmental effects is defined in terms of the amount of change to the environment which exists before work on the scheme starts, known as the 'baseline'. This is assessed on a five-point scale of 'very large',

'large', 'moderate', 'slight' or 'neutral'. Effects to receptors can be either adverse or beneficial. Receptors can be an environmental resource such as a habitat, watercourse or conservation areas, as well as private and commercial property or civic structures such as ancient monuments or public buildings.

The Environmental Impact Assessment process also considers both direct and indirect effects. Direct effects are those caused by the scheme itself. Indirect effects can be those that alter the character, behaviour or functioning of the affected environment because the effects of the scheme might over a wider area.

Effects are considered significant if they are moderate, large or very large adverse. They are also assessed as significant if they are moderate, large or very large beneficial. Measures to avoid, reduce and where possible, remedy significant adverse environmental effects have been included within the assessment.

Where significant adverse effects are identified and their impact on the environment cannot be avoided or reduced, the Secretary of State will need to determine if the scheme remains in the public interest.

Effects are assessed at defined stages of the scheme: during construction, the opening year and for some topics, impacts are predicted for a future year (for example 15 years after opening, or the worst year in the first 15 years of operation). This is known as the scheme design year.

A summary of effects is discussed in **Section 3.12** and shown at **Table 3.1**.

## 1.2 – Consultation

We have worked closely with local authorities, statutory bodies and other stakeholders such as landowners, business owners and tenants who have interests within or around the area of the scheme since 1991. This has enabled us to improve our understanding of local concerns and to consider how to reduce environmental effects through carefully considered design.

In 2009, we presented a number of options at public consultation. Approximately 132,000 leaflets, accompanied by a questionnaire, were delivered to local householders and businesses describing the options for the A63 Castle Street improvements and providing details of the public exhibitions. These were held over three days at The Deep venue during April and during one day at the Royal Hotel, Ferensway in May. A total of 544 visitors attended the public exhibitions.

The outcome of the consultation, together with technical appraisal, economic assessment and environmental assessment were used to inform the option selection process. This identified Option 1 A63 in cutting at Mytongate Junction (underground option) as the preferred option.

In 2013, we held a statutory public consultation exhibition for the scheme at the Royal Hotel in Hull to gain feedback on the draft proposals. A total of 318 attendees visited over two days in July and one day in August. Following this, further environmental surveys and traffic assessment were undertaken to ensure our plans were robust.

After the 2013 statutory consultation, the scheme experienced delays due to a requirement to carry out additional traffic modelling. When the application process resumed, it was decided that further public consultation was necessary due to the considerable time that had elapsed and to provide an update on the design changes to date. A statutory consultation process was then held over four weeks between **16 January and 13 February 2017**.

During the 2017 consultation process, approximately 6,700 leaflets and questionnaires were distributed. This enabled the public and other interested parties, to register their comments on the proposed design changes and updated environmental assessment information. In addition, a public exhibition was held over on 27 and 28 January at The Royal Hotel in Hull. In response to the consultation, approximately 260 completed or partially completed questionnaires and a further 60 letters and emails were received. All responses received were carefully considered and where appropriate, measures were incorporated into the final scheme proposal.

Drop-in events were held on 29 November and 7 December 2017 to discuss the proposed changes in the Old Town and the Fruit Market in more detail. Letters informing people of the events were issued to properties within these areas.

Consultation with statutory bodies is also very important for the Environmental Impact Assessment because we need to:

- gather information on the existing environment
- obtain views and opinions on the methodology to be used
- discuss likely environmental impacts and proposals for mitigation
- record where agreements have been reached

Key stakeholders for the environment included Hull City Council, Historic England, the Cultural Heritage Liaison Group, Holy Trinity Church and the Diocese of York, Natural England, the Environment Agency, the Marine Management Organisation, Public Health England, the Health and Safety Executive and Hull Access Improvement Group.

**Full details of the consultation and responses are included in the Consultation Report which accompanies the Development Consent Order application.**



## 2 – The Scheme

### 2.1 – National and local policy background

The A63 Castle Street in Hull is part of a major route and carries a mixture of regional traffic accessing the Port of Hull, through traffic and local traffic.

The government has produced a series of National Policy Statements including one on National Networks which covers roads. This states that “the government will deliver national networks that meet the country’s long-term needs; supporting a prosperous and competitive economy and improving overall quality of life, as part of a wider transport system”.

The National Policy Statement also states that it will be government policy for development to improve the road network to include:

“enhancements such as junction improvements, upgraded technology and new slip roads to address congestion and improve performance and resilience” and “improvements to trunk roads, in particular dualling of single carriageway strategic trunk roads to increase capacity and improve performance and resilience”.

Hull City Council produced the Hull Local Plan (2016 to 2032) as part of the statutory development plan for Hull. Adopted in November 2017, it will be used to

guide new development in the city up to 2032. The Council’s Local Transport Plan and Network Management Plan also make reference to a need for improvements of A63 Castle Street to assist regeneration and access to the Port of Hull.

The improvements have therefore been identified as a key requirement to meet strategic objectives outlined in the National Policy Statement and government national policy and as essential to the future development of Hull.

### 2.2 – Scheme objectives

Congestion on the A63 Castle Street is caused by restrictions to traffic flow at Mytongate Junction, traffic controlled pedestrian crossings and traffic turning and weaving to access side roads. Relieving congestion would improve poor journey times and create better access to the Port of Hull and the local area.

The scheme’s objectives are:

- Improved access to the Port of Hull
- Congestion relief
- Improved safety
- Improved connections between the city centre to the north and developments and tourist and recreational facilities to the south

### 2.3 – Scheme outline

The improvements are located in the centre of Hull across approximately 1.5 kilometres of the A63 Castle Street between Ropery Street to the west and the Market Place and Queen Street junctions to the east.

The scheme has been designed to reduce the existing levels of congestion and improve traffic flow and safety. The main aspects are as follows:

- Lowering the level of the road by approximately 7 metres into an underpass at Mytongate Junction and raising Ferensway and Commercial Road by approximately 1 metre creating a split-level junction
- New east and west bound slip roads would link the A63 and Mytongate Junction
- Widening the eastbound carriageway to three lanes between Princes Dock Street and Market Place, with the nearside lane being marked for local traffic
- Removing all existing pedestrian crossings on the A63
- Providing a new bridge over the A63 for pedestrians, cycles and disabled users at Porter Street
- Providing a new bridge over the A63 for pedestrians, cycles and disabled users south of Princes Quay Shopping Centre

- Upgrading of the existing route from Market Place under the A63 using High Street to allow pedestrians, cycles and disabled users to cross underneath the A63
- Restricting access to the A63 by closing some junctions and restricting movements on some side roads to improve safety
- Changes and enhancements to existing highways to maintain access to all properties
- Vegetation clearance and exhumation and reburial works within Trinity Burial Ground resulting in a loss of approximately one third of the site to accommodate the new Mytongate Junction
- Demolition of the Myton Centre to enable the development of replacement public open space for the loss of land at Trinity Burial Ground
- Dismantling of the Grade II listed Earl de Grey public house
- Localised diversion of cables and pipes that currently cross beneath the existing A63
- Providing a new bridge over the A63 for pedestrians, cycles and disabled users south of Princes Quay Shopping Centre



## 2.4 – Scheme development and alternative schemes

Improvements for the A63 Castle Street have been proposed since the early 1990s and a number of studies and designs have been undertaken and developed since that time.

In 2006 and 2007, funding was made available to enable to progress the scheme towards entry to the government's Targeted Programme of Improvements (now Major Projects). In 2008, six options were developed. Two were identified as 'preferred' options as they provided sustainable solutions which represented good value for money, were affordable and had least overall impact on the environment:

- Option 1 A63 in cutting at Mytongate Junction (underground option)
- Option 2 A63 on flyover at Mytongate Junction (overground option)

The four remaining options were 'non-preferred' as they were considered to offer poor value for money, were unaffordable and had environmental issues. These were:

- Option 3 Underground landbridge
- Option 4 Underground cut and cover tunnel
- Option 5 Overground landbridge
- Option 6 Overground extended viaduct

The six options were presented at public consultation in 2009 and the process identified Option 1 as the preferred option. This option was then taken to the Preliminary Design stage, however works were halted in 2010 due to a government Comprehensive Spending Review.

In 2012, the Roads Minister announced that the A63 Castle Street improvements had been selected to receive funding to continue. Works on the scheme re-commenced in January 2013 and progressed towards application for a Development Consent Order. This included carrying out an Environmental Impact Assessment and conducting a second public consultation. A contractor was then appointed via an Early Contractor Involvement design and build contract to develop the detailed engineering designs.

Since 2014, a series of ground investigations, traffic modelling and environmental surveys have been progressed. This has supported development of the detailed engineering design including the new underpass at Mytongate Junction, Princes Quay Bridge and clearance of Trinity Burial Ground. A further public consultation exercise was held during January and February 2017 to obtain views on the changes made to the preliminary design since 2013.

In August 2015, Hull City Council requested that the design for Princes Quay Bridge was brought forward prior to the 2017 UK City of Culture celebrations. As such, it was removed from the main scheme and progressed via a separate planning application. The application was granted consent by Hull City Council on 7 October 2015. However due to the potential risk of programme delays, the bridge was brought back into the A63 Castle Street Improvements in March 2016 and is now included in the Development Consent Order application



## 3 – Environmental effects and mitigation

### 3.1 – Air quality

The scheme has the potential to cause air quality impacts during the five year construction phase and when the scheme becomes operational. We have assessed the potential construction and operation impacts by reviewing existing air quality, traffic characteristics and land use in the area and by predicting the future concentrations of key traffic related pollutants at sensitive human health and ecological receptors.

During construction, the scheme will introduce new emission sources in the form of potentially dust generating activities, such as from earth moving and demolition. Construction traffic management measures will alter existing traffic emissions along some stretches of road from the redistribution of vehicles on the existing road network and by altering traffic flow characteristics such as speeds. This will increase and decrease pollutant concentrations at sensitive receptors but these changes in air quality are anticipated to be temporary during construction.

Once the scheme is operational, there will be changes to the characteristics of traffic flows on the existing road network. As a result, pollutants associated with traffic emissions will increase in some locations and decrease in others. The scheme is not predicted to cause any new exceedances of air quality objectives, and will improve concentrations of pollutants at some receptors above

the air quality objectives. The changes in air quality during operation of the scheme are anticipated to be not significant.

Industry best practice controls will be used on construction sites to suppress dust and reduce emissions from construction equipment and vehicles. This will include, for example, removing mud and debris from wheels leaving the site, damping down surfaces in dry conditions, locating stockpiles out of the wind and ensuring all vehicle engines and plant motors are switched off when not in use. These measures will reduce the impact of emissions on sensitive receptors in the local area and are aimed at preventing nuisance to nearby residents. As the predicted impacts once the scheme is operational are not significant, no incorporated mitigation measures are required.

Overall, the impacts of the scheme during construction from dust and traffic management measures are predicted not to cause a significant adverse effect. Similarly, air quality impacts during operation would not result in a significant adverse effect and would not affect the UK's ability to achieve compliance with the European Union air quality directive. The scheme is considered to comply with all relevant national and local planning policy requirements.

### 3.2 – Noise and vibration

We have carried out a noise and vibration assessment to identify significant temporary and permanent effects associated with the construction and operation of the scheme. The assessment has been based on predicted noise impacts with reference to the results of baseline noise measurements.



Construction activities with the potential to generate noise and vibration impacts include:

- Site preparation and diversion of cables and pipes that carry services such as gas, electricity and water
- The demolition of existing structures such as the road and the dismantling of the Earl de Grey public house
- Excavation, compaction and foundation formation
- Construction of bridges, slip roads, retaining structures, services, drainage and the new road carriageway
- Road surfacing
- Installation of noise barriers, signs and road markings
- Construction vehicles accessing the site and compounds

Calculation of potential noise impacts during construction has identified that ambient noise levels would temporarily increase when construction activities are close to receptors. Vibration may also be noticeable at receptors close to some activities during construction. We expect that the majority of the works will be carried out during the daytime. When night time construction works are required, there is potential for significant adverse effects. Significant adverse effects would occur if construction noise levels exceed threshold values for a period of 10 days or more of working in any consecutive 15 days or 40 days in 6 months.

Normal working hours and the noise limits that apply at nearby properties will be agreed in advance of the works in consultation with Hull City Council Environmental Health Officers.

During operation, several properties are predicted to experience road traffic noise above the significant observable adverse effect levels. However, this would apply to a greater number of receptors in the case that the scheme is not implemented. In the long term, the number of residences experiencing an increase in noise with the scheme is lower than would experience an increase in the Do Minimum scenario. The scheme therefore has a net benefit.

We have incorporated mitigation measures into the design of the scheme during construction. These include temporary noise barriers around site compounds and areas of plant. In addition, appropriate siting of noisy plant items, maintenance of equipment and the monitoring of noise and vibration will be carried out during construction.

Mitigation measures incorporated into the design once the scheme is operational include new road surfacing that comprises a thin surface layer that will also reduce any imperfections in the surface and the associated noise and vibration impacts.

### 3.3 – Cultural heritage

We have carried out a cultural heritage assessment that draws upon information gained from desk-based sources, a search of records from the Humber Historic Environmental Record database, site walkover and archaeological field evaluation. A diverse range of heritage features have been identified in the area of the scheme. These include two scheduled monuments, archaeological remains of the medieval and post-medieval Old Town of Hull and its historic defences, the remains of Trinity Burial Ground, several listed buildings and twelve conservation areas, including the Old Town conservation area of Hull.

The non-designated archaeological remains of the Old Town will be significantly adversely affected during construction. This includes the Myton Gate, the town walls and Civil War defences and archaeological remains dating from the medieval and post-medieval period. In Trinity Burial Ground, a large proportion of the surface area would be significantly adversely affected by construction as trees and vegetation will be cleared, monuments will be removed and human burials will be excavated, removed and reburied.



The Grade II listed Earl de Grey public house will be dismantled and elements of the Grade II listed Humber Dock will be altered.

The setting of several historic buildings, conservation areas including listed buildings and the Old Town conservation area will be significantly adversely affected by noise and visual impacts during construction and when the scheme is opened. These are the Grade I listed statue of King William, the Grade II listed Public Toilets, Warehouse No 6, the Humber Dock and Princes Dock, Castle Buildings, numbers 65, 74,

75, 76, 80 and 82 to 83 Castle Street and the remaining standing elements of Trinity Burial Ground.

Mitigation measures include appropriate construction methods that comply with best industry practice to avoid or limit damage to heritage assets. Before and during construction, archaeological investigation will be carried out across the scheme. An archaeological mitigation strategy will be produced including implementing a programme of archaeological works to investigate, analyse, report and record any assets. This will include modelling of palaeo-deposits, investigation within Humber Dock and Princes Dock Street of the town defences and investigation of Trinity Burial Ground.

We will maintain an archaeological watching brief during field work on archaeological remains in the Old Town. Impacts to the setting of historic buildings and the Old Town conservation area has been reduced by a number of measures. These include the design of Princes Quay Bridge, sympathetic landscape design in the remaining Trinity Burial Ground and the upgrading of the existing crossing points between the northern and southern parts of the Old Town conservation area. The Earl de Grey public house will be archaeologically recorded in advance of being dismantled.

Following mitigation, there will be loss of archaeological remains within the footprint of the scheme resulting in an overall slight adverse effect during construction and no adverse effect during operation. The exception is the significant large adverse effect to the Trinity Burial Ground, the remaining area of which will also undergo significant moderate adverse effects after the opening of the scheme.

There will also be a significant residual large adverse effect on the Earl de Grey public house due to dismantling. In addition, there would be a significant residual moderate adverse effect on the Castle Buildings during construction and operation due to the dismantling of the adjacent Earl de Grey public house and changes to the layout of the Mytongate Junction. There would be a slight or negligible adverse effect on the remainder of the built heritage and historic landscape during both construction and once the scheme is operational.

### 3.4 – Landscape

We have carried out a landscape and visual impact assessment of the likely effects of the scheme on the character of the landscape (including townscape). We also assessed effects arising from changes to people's views during the 5 year construction period, at the year of opening and again after 15 years when new tree planting will have begun to mature.

The existing A63 forms a prominent feature within the area. The landscape character of the area adjacent to the road is diverse and can be divided into distinct landscape character areas. These include:

- commercial areas with large scale buildings to the south west and north east of Mytongate Junction
- a residential area comprising multi-storey flats set within open space to the north west
- Trinity Burial Ground historic open space
- historic dockland commercial and residential areas at Princes Quay and Humber and Railway Docks
- the historic Old Town to the north east and Fruit Market to the south east
- River Hull to the east



The most sensitive landscape character areas include the Humber and Railway Docks, Old Town and Trinity Burial Ground all of which are located within the Old Town conservation area.

Significant adverse landscape and visual effects have been identified during construction. These are largely unavoidable during the construction of a large-scale infrastructure project within a city centre location. These effects include a significant adverse landscape effect to tree cover at the Trinity Burial Ground occurring as a result of the excavation, removal and reburial of human remains. This in turn has a significant large adverse effect on the landscape character of the Trinity Burial Ground.

Significant moderate adverse effects during construction are also identified within the north west residential area and the Humber and Railway Docks. Significant adverse visual effects during construction are also associated with views from residential, open space and business locations and footpaths and roads close to the road carriageway; areas close to Porter Street and Princes Quay Bridge; from areas close to the Arco site construction compound; hotels close to Trinity Burial Ground and adjacent roads.

We have also identified significant adverse landscape and visual effects once the scheme is opened and after 15 years. Although mitigation proposed by the landscape design would lessen the residual effects of the scheme over time, the assessment concludes that some long term, significant adverse effects would persist beyond 15 years of completion.

A significant large adverse landscape effect of the scheme will be caused by the permanent loss of approximately one third of the Trinity Burial Ground public open space and the associated and wider loss of valued mature trees here and elsewhere along the highway corridor. This change will be significant and to the permanent detriment of landscape character to the north east of Mytongate within the Old Town conservation area. Significant adverse residual visual effects are identified close to Mytongate. These are associated with the removal of large, mature and valued tree cover along the highway corridor that could not be fully replicated within 15 years of completion.

Major visual change would also arise due to the construction of the Princes Quay Bridge, however it is not possible to objectively categorise this as either adverse or beneficial. The visual effect of the bridge is judged in this assessment as not significant, as the

proposed bridge has already been awarded planning consent by Hull City Council and its design therefore judged satisfactory.

The assessment has also identified significant moderate beneficial effects at residences and from public open space after 15 years due to new planting at the proposed Myton Centre public open space. This is due to the increased maturity of the new trees and shrubs which will provide a noticeably enhanced public realm.

### 3.5 – Ecology and nature conservation

The natural environment around the scheme comprises the existing A63 and its immediate urban surroundings with areas of amenity (or civic) planting in public spaces, hard surfacing, scattered amenity trees and shrubs, amenity grassland and occasional areas of scrub.

Ecological receptors of value include the Humber Estuary, Trinity Burial Ground, mature amenity trees, bats and birds. The Humber Estuary features three European designations: Special Area of Conservation, Special Protection Area and Ramsar site. It is also nationally designated as a Site of Special Scientific Interest.

Trinity Burial Ground is a Site of Nature Conservation Interest designated for its mature amenity trees, shrubs, scrub and bat and bird habitat. Trinity Burial Ground also includes the Natural Environment and Rural Communities Act 2006 Section 41 habitats such as 'broad-leaved woodland' and 'deciduous woodland'.

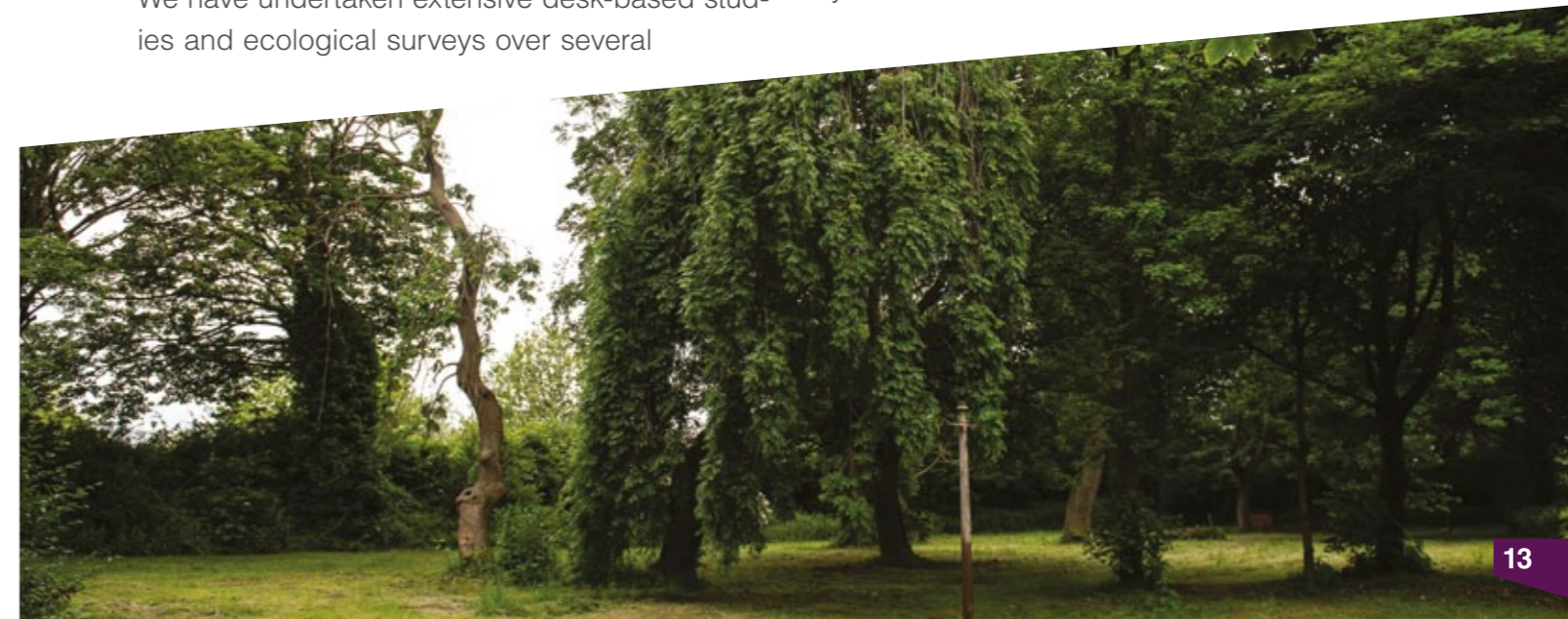
We have undertaken extensive desk-based studies and ecological surveys over several

seasons that give us a detailed understanding of the habitats and species populations in the area around the scheme. An Assessment of Implications on European Sites is being undertaken separately as part of the Development Consent Order application.

The significant adverse effects of the scheme would include the permanent loss of approximately one third of the Trinity Burial Ground, with a greater loss during construction, and the removal of approximately 40 mature trees. The effect would be significant moderate adverse during construction and once the scheme is operational. It would also cause a significant major adverse effect during construction and operation to the Natural Environment and Rural Communities Act 2006 Section 41 priority habitats. Native trees will be replanted in the verges at either side of the A63 in a line extending from Trinity Burial Ground to the Myton Centre and also in areas of the new Mytongate Junction. The understorey of the junction will be planted with native shrubs and plants to attract invertebrates.

Around a further 277 amenity trees will need to be removed along the remaining length of the scheme during construction. The effect would be slight adverse, as this receptor is valued at a local level. Approximately 362 new trees will be planted, mostly within the scheme footprint. The residual impact is predicted to be moderate adverse and significant during construction and once the scheme is operational as the trees will take many years to mature.

We carried out bat activity surveys around the whole of the scheme. No evidence of bat roosts was found. However slight adverse residual impacts to bats are predicted during construction and when the scheme is open due to the removal of foraging habitat in Trinity Burial Ground.





Compensation for the loss of potential bat roost features will include the provision of bat boxes in the remainder of Trinity Burial Ground.

Trinity Burial Ground is also an important feeding source and commuting route for migratory bats and is considered to be of moderate value for bat activity. Mitigation measures will include sensitive timing of habitat clearance, erection of bat and bird boxes in Trinity Burial Ground and new tree and shrub planting, including within the improved road area. This would restore habitat connectivity across the carriageway at Mytongate Junction.

The River Hull Site of Nature Conservation Interest would not be affected by the scheme with pollution prevention measures in place.

Princes Dock and Humber Dock Marina are both Natural Environment and Rural Communities Act 2006 Section 41 broad habitats 'Intertidal substrate foreshore – man made habitat'. The loss of a small amount of habitat beneath Princes Quay Bridge, the relocation of the Spurn Lightship, disturbance of sediments from piling and noise and vibration from construction vehicles during construction would result in a significant major adverse impact to these priority habitats during construction and operation.

No suitable habitats for water vole or white-clawed crayfish were identified in habitat surveys. No potential great crested newt breeding ponds or other suitable water bodies were identified and no suitable habitats for these species were found during. No protected species of flora were found.

The scheme will have no impacts upon aquatic invertebrates, fish, badgers, reptiles, aquatic mammals or otters due to mitigation measures applied during construction and the availability of alternative habitats within the local area. As a result, these protected and notable species will not be subject to any significant effects during construction or once the scheme is operational. We have identified that there would be slight adverse effects to hedgehogs in all terrestrial areas of the scheme footprint due to some permanent habitat loss from Trinity Burial Ground.

Bird species designated under the Humber Estuary Special Protection Area, Ramsar and Site of Special Scientific Interest will not be impacted by the scheme. Birds using the mudflats adjacent to site compounds will be protected from noise and visual disturbance during construction by hoardings erected around the compounds. Bird species found in Trinity Burial Ground and the amenity trees lost around the scheme will be subject to slight adverse effects from construction and operation from habitat loss. Careful vegetation clearance will avoid impacts to breeding birds.

Terrestrial invertebrates in Trinity Burial Ground will experience slight adverse effects during construction and eventual operation. Fauna in the site compounds will experience a slight adverse effect from construction only. Birds in Trinity Burial Ground and two of the site compounds will experience slight adverse effects during construction and operation due to the permanent loss of habitat.

Impacts to hedgerows will be slight adverse from construction and slight beneficial once the scheme is in operation as hedgerows will be reinstated with species-rich plants and benefit from an overall increase in length.

Appropriate construction methods that comply with industry best practice, and avoidance or limitation of damage to the surrounding habitats will be applied throughout the construction period. Together with the successful implementation of mitigation measures, we predict that the scheme will not have any significant residual impacts to other ecological receptors of value during construction and operation including the Humber Estuary statutory designated site and its associated fauna.



### 3.6 – Road drainage and the water environment

The water environment in the area of the scheme encompasses surface water features in the tidal Humber Estuary, River Humber, River Hull, and also in the Albert, Humber, Railway and Princes Docks. The area also includes groundwater within underground strata. Key considerations of the water environment in the area include the impact on water resources and flood risk from extreme tidal events.

We have identified that the scheme will be drained by two separate drainage networks; one draining the areas at or near to existing ground levels and a network draining the proposed underpass at Mytongate Junction. Surface water drained from the underpass would either be discharged directly to the Humber Estuary via a new sewer or pumped and discharged to the existing Yorkshire Water sewer network.

The design and construction methods of the Mytongate Junction underpass scheme take into account difficult ground conditions and high groundwater levels. The impact of increased surface water runoff generated by the additional impermeable area has been reduced through the inclusion of surface water storage features. These features would store surface water runoff from the new areas of carriageway and underpass at Mytongate Junction. An allowance for climate change has been included to ensure no increase in flood risk from the scheme.

We have carried out a Flood Risk Assessment showing that the scheme is located in Flood Zone 3 where there is high risk of tidal flooding from the Humber Estuary. The scheme is protected by existing flood defences along the north bank of the Humber, the west bank of the River Hull and the Hull Tidal Barrier. However, there remains a residual risk of flooding due to overtopping or failure of these flood defences. Modelling has been carried out which shows that the proposed underpass at Mytongate Junction would be fully inundated during a severe wave overtopping flood event from the Humber Estuary or from tidal flooding from the River Hull. However, the risk of tidal flooding from the River Hull is minimal due to the presence of the Hull Tidal Barrier.

During a wave overtopping flood event from the Humber Estuary, the Mytongate Junction underpass and areas around Kingston Park and east of Humber Dock would be at increased flood risk due to the raising of road levels either side of the junction. The raising of road levels also provides a reduction in flood risk in areas to the north of the underpass around the A1079 Ferensway and surrounding streets. Emergency procedures, including closure of the underpass, traffic diversions and the use of pumps would be put in place to minimise the risk to the public during a flood event.



The scheme is unlikely to cause deterioration in ecological status or ecological potential for the Humber Estuary or downstream water bodies. Once the scheme is operational, the drainage design will allow any spillages on the carriageways to be isolated within the drainage system. This will minimise adverse effects on the surrounding watercourses.

We have completed a groundwater assessment, which concluded that with mitigation, the scheme is likely to have a generally neutral effect on direct groundwater receptors including for the Chalk and superficial deposits aquifers. There will also be a neutral effect on indirect groundwater receptors dependent on groundwater as a pathway, such as nearby groundwater abstractions, building foundations and designated sites such as the Humber Estuary Special Area of Conservation and Special Protection Area. The exception to this is an effect of slight to moderate significance on the superficial deposits during construction, as there may be mobilisation of existing ground contamination due to unavoidable ground disturbance.

The design of the scheme minimises impacts on groundwater levels and flow patterns in both the superficial deposits and Chalk during construction and operation, and therefore there is a negligible risk of additional saline intrusion. Mitigation measures incorporated into the design of the scheme during construction aim to prevent contamination

from construction and best practice guidelines for pollution prevention and water management will be followed. The design incorporates a closed drainage system and there will be no discharges to groundwater, which means that there is a negligible impact on direct and indirect groundwater receptors during scheme operation.

The risk of pollution to surrounding water bodies during construction of the scheme will be temporary and localised. Mitigation measures will also avoid potential significant adverse effects on surface or groundwater during construction.

Dependant on the flooding source, location of the receptor and size of flood event, effects on flood risk will range from significant large / very large beneficial (for example, where the ground levels have been raised) to significant very large adverse (for example, where the ground levels have been lowered) during both the construction and operation phases.



### 3.7 – Geology and soils

There are no designated sites relating to geological features beneath the scheme. Whilst we have identified regionally important geological features locally, no works are planned close to these features.

Given the urban setting of the scheme, only limited areas of soil will be impacted and these have already been disturbed by earlier development. Land use and the extent of areas covered by either buildings or hardstanding will also not change significantly as a result of the scheme.

Several former land uses have been identified within the area of the scheme which may have resulted in the contamination of soil or groundwater. These historic land uses include former warehousing, docks, timber yards, metal works, a pig market, railway lines and the disused Trinity Burial Ground.

We have carried out site investigations to assess the ground conditions that recorded localised contamination. Peat and organic material in soils was recorded as generating gas in localised areas. Control measures to manage any contaminated materials and ground gas will be required during below ground works in these areas.

Historic bombing raids are known to have occurred within this area of Hull. The assessment identified the potential for unexploded bombs in the west and east of the scheme. Specialist support from explosive ordnance contractors will be required during below ground works in these areas.

Construction will involve excavation and earthworks and general construction and piling activities. These activities have the potential to generate dust, release soil gas or cause localised contaminants to pollute groundwater or enter nearby water courses during construction. By using industry best practice procedures during construction, impacts on the environment, human health or the surrounding area can be avoided, minimised or mitigated. A Materials Management Plan will also be prepared to outline the procedures to be adopted to store, handle and dispose of contaminated soils.

Control measures adopted during construction are expected to be successful in mitigating the effects due to the presence of localised ground contamination, soil gas and unexploded bombs.

Once operational, we do not expect the scheme to result in significant adverse effects on the geology and soils.

### 3.8 – Materials

The scheme requires large amounts of construction materials and will generate significant volumes of construction, demolition and excavation waste. This will arise mainly from the excavation and treatment of soils to form the underpass and slip roads at the Mytongate Junction.

There is very limited potential for the re-use of materials due to the site setting constraints, limited areas of landscaping and the geotechnical unsuitability of site-won material.

Slurry generated from jet grouting and soil mixing activities will require treatment on site before removal due to its high water content and the difficulty in handling saturated excavation material. The treatment and disposal of these materials as waste will typically cause adverse environmental impacts, such as contributing to landfill and impacts associated with handling and transport.

We will fully consider options for the re-use of materials off site to reduce the volume of waste to landfill and associated impacts. The potential for re-use of materials off-site at exempted or permitted sites is subject to suitability but may include use as a landfill capping material, soil improvement or landscaping schemes.

Inert, non-hazardous and smaller volumes of hazardous waste will be generated by the scheme. Generation of hazardous waste requiring disposal will be minimised where possible, for example by the appropriate segregation and treatment of any contaminated soils and avoiding use of techniques or materials which may generate volumes of hazardous waste.

Mitigation to reduce the impacts associated with the use and handling of materials and generation of waste will include measures to control the release of dust and discharges to the water environment. In addition, opportunities to reduce waste, re-use materials where possible, use material with a high recycled content (where appropriate) and use of local material suppliers will be considered.

Materials used and waste generated by the scheme will all produce carbon emissions as a result of their manufacture or transportation. Total carbon emissions have been estimated using our Carbon Emissions Calculation Tool, which indicates that the high-

est proportion of carbon would be associated with the bulk materials required for foundations, road construction, general backfill and structures.

A Site Waste Management Plan will be produced to detail how waste will be handled and reduced, identify re-use opportunities and disposal routes. A Materials Management Plan will manage the suitable use, treatment and placement of excavated materials, including re-use offsite. A Material Logistics Plan will manage material procurement, delivery, storage, handling and use.

Control measures adopted are expected to be successful in mitigating the effects due to the handling of materials and generation of waste during construction. We anticipate the effects to be significant moderate adverse due to the volume of construction materials required and associated high total carbon emissions from their manufacture and transport. This is not significant in terms of overall effects.

Once operational, the scheme would not be expected to result in significant adverse effects due to the use of materials or generation of waste.



### 3.9 – People and communities

The people and communities assessment identifies impacts of the scheme associated with the demolition of private residential and commercial property and land, the loss of land used by the community, the impact on community assets, impacts on development land and on the local economy. Agricultural land has not been assessed as the scheme is located in a city centre.

There are not likely to be any significant temporary or permanent adverse effects on private residential housing during the construction and operation of the scheme. Both permanent and temporary land take from businesses is required during construction. This includes permanent land take which will affect businesses at the Holiday Inn, Arco Ltd, Staples and Kingston Retail Park. Temporary land take is required at the construction site compounds, the Myton Centre, the Humber Dock and also at the Holiday Inn. No additional land take from businesses is required during operation. During the construction phase, if the preferred Option A is chosen for the construction compound at the Arco site, the Arco building will be demolished. If Option B is chosen, the buildings on the Staples will be demolished. Disruption to business would be significant moderate adverse. The Myton Centre will also be demolished during the construction phase.

Permanent and temporary land take is also required from community land and assets during construction. There will be permanent and temporary land take at Trinity Burial Ground and permanent loss of moorings at Humber Dock Marina. Community open space would be provided at the Myton centre as compensation. There will be no visitor access to Spurn Lightship while it is temporarily relocated. Temporary and

permanent land take is required at Jubilee Arboretum and William Oak Park. No additional land take from community assets is required during operation.

There are not likely to be direct impacts on development land from the scheme. Access to development land located in the area of the scheme is likely to be improved.

In terms of economic impact during construction, temporary direct employment and temporary economic activity is likely to be generated and an estimated 100 to 200 temporary jobs are likely to be created. During operation, the scheme is forecast to result in the creation of approximately 583 new jobs generated through the unlocking of development land and generate approximately £24.7 million in gross value added (GVA).

In conclusion, effects on private property during both construction and operation are considered to be neutral. There will be temporary and permanent effects on business property during construction, and combined these are considered to be significant moderate adverse and will remain long term. No additional effects on business property is anticipated during the operational stage. Effects on community land would be moderate adverse and therefore significant during construction and operation and long term. Additional community land at the Myton Centre will be provided as compensation for land lost at Trinity Burial Ground. There will be permanent adverse effects on moorings at Humber Dock Marina. Effects on development land are anticipated to be slight adverse and therefore insignificant during construction and moderate beneficial during the operational stage. During operation, no additional direct effects in terms of land take are anticipated. Effects on economic development are considered to be slight beneficial during construction and significant moderate beneficial during operation.





### 3.10 – Effects on all travellers

In undertaking the assessment of the effects of the scheme for all travellers, we addressed the effects on vehicle travellers in terms of the change in the view from the road and the impact on driver stress (frustration, fear of potential accidents and route uncertainty). This is considered during construction and once the scheme is operational. The assessment also addresses changes to non-motorised user amenities, journey length and journey experience during construction and operation.

Temporary closures and diversions during construction will result in increases to journey length and times for vehicle travellers and non-motorised users. This will also cause some deterioration in the existing view for vehicle travellers. Traffic management and speed restrictions during construction could result in delays to journey time, leading to increased driver stress within the area.

Provisions for non-motorised users as part of the operational scheme include new combined footway and cycleway facilities, pedestrian, cycle and disabled user bridges at Porter Street and Princes

Quay, signalised crossings at Mytongate Junction and a reconfigured ramp from the A63 to High Street. However, some adverse effects will be experienced by non-motorised users through changes to cycle routes, footpaths and public rights of way and increases in journey length for some routes.

Predictions of driver stress with and without the scheme have identified very little change in driver stress during operation. However, upgrades to Mytongate Junction and the removal of crossings across the A63 would slightly reduce driver stress along the A63 Castle Street resulting in a benefit for vehicle travellers. Some changes to existing views from the road as a result of the introduction of new highways infrastructure will also be anticipated for vehicle travellers. However, the scheme would not alter the overall balance of features and elements that comprise the existing view of the surrounding townscape for vehicle travellers.

Construction effects on non-motorised users, driver stress and views from the road are considered to be slight adverse. Effects on non-motorised users and views from the road are also considered to be slight adverse during operation, and slight beneficial for driver stress.

### 3.11 – Combined and cumulative effects

The assessment of combined and cumulative effects of the scheme brings together the principal findings of each of the topics contained in the Environmental Statement. This enables us to make an assessment of possible combined effects and potential cumulative effects of the scheme in association with other developments.

Combined and cumulative effects are defined as effects which can result from multiple actions on receptors over time and are generally additive or interactive in nature. Cumulative effects can also be considered as impacts resulting from incremental changes caused by other past, present or reasonably foreseeable actions in combination with the scheme.

For cumulative effects, 26 'other developments' were identified to have the potential to coincide with the construction and operation of the scheme. We assessed the potential cumulative effects of the scheme with each of these other developments to avoid or mitigate against significant adverse effects.

We assessed the scheme as having a significant moderate adverse combined residual effect on the environment during construction and operation due to the localised adverse effects of the scheme on medium value receptors. These include the Trinity Burial Ground as a heritage asset, landscape char-

acter areas, Site of Nature Conservation Interest, the Humber and Railway Docks landscape character area and the Humber Dock Marina UK Biodiversity Action Plan priority habitat.

The residual cumulative effects identified during construction and operation of the scheme in interaction with the other developments is anticipated to be significant moderate adverse as the effects are contained within the footprint of the scheme.

Overall, the residual combined and cumulative effects of the scheme with the other developments are considered to be significant moderate adverse but are not anticipated to contribute any further to effects identified in the Environmental Statement. Therefore no additional mitigation over and above that already specified is considered necessary.

### 3.12 – Summary of effects

**Table 3.1** summarises the likely significant effects for each environmental topic we have assessed for the scheme. A summary of mitigation measures is also provided where necessary.

**Table 3.1 – Summary of significant effects**

Topic	Significance of environmental effects			Mitigation
	During construction	Start of operation	Residual (15 years after opening / design year)	
<b>Air quality</b>				
Dust and traffic management	Not significant	Not significant	Not significant	Use of well established industry best practice controls to suppress dust and reduce vehicle emissions
Local air quality and designated sites	Not significant	Not significant	Not significant	
<b>Noise and vibration</b>				
Noise	Significant adverse if the construction noise levels exceed threshold values for an extended period at each receptor	Significant adverse at a greater number of receptors than would experience significant beneficial effects	A greater number of significant beneficial effects than significant adverse effects and overall benefits with the scheme when compared without	<ul style="list-style-type: none"> <li>Acoustic barriers during construction at relevant locations including plant areas and compounds</li> <li>Selection and location of plant to minimise noise emissions</li> <li>Site maintenance and monitoring during construction</li> <li>Thin road surface layer</li> </ul>
Vibration	Significant adverse	Not significant	Not significant	<ul style="list-style-type: none"> <li>Selection of low vibration plant and piling methods</li> <li>Public relations to nearby properties to warn of potentially high vibration activities</li> <li>Thin road surface layer</li> </ul>
<b>Cultural heritage</b>				
Archaeology	Significant adverse	Significant adverse	Significant adverse to Trinity Burial Ground only	<ul style="list-style-type: none"> <li>The implementation of an archaeological mitigation strategy</li> <li>Sympathetic design and landscaping measures</li> </ul>
Built Heritage	Significant adverse	Significant adverse	Significant adverse	
Historic Landscape	Not significant	Not significant	Not significant	

Topic	Significance of environmental effects			Mitigation
	During construction	Start of operation	Residual (15 years after opening / design year)	
<b>Landscape</b>				
Landscape	Significant adverse	Significant adverse	Significant adverse	<ul style="list-style-type: none"> <li>New open space at the Myton Centre to compensate loss at the Trinity Burial Ground</li> <li>Screen planting and landscape scheme</li> </ul>
Visual	Significant adverse	Significant adverse	Significant adverse to significant beneficial	
<b>Ecology and nature conservation</b>				
Humber Estuary designated sites	Not significant	Not significant	Not significant	<ul style="list-style-type: none"> <li>Ensure no impacts on the Humber Estuary designated sites or the habitats and species they are designated for.</li> <li>Protect trees and habitats that do not require removal.</li> <li>Provide greater habitat in the long-term through habitat creation, for example planting a greater number of trees, native shrubs, plants and grassed areas and the provision of bat boxes.</li> </ul>
Trinity Burial Ground SNCI habitat	Significant adverse	Significant adverse	Significant adverse	
Humber Dock Marina habitats	Significant adverse	Significant adverse	Significant adverse	
Other habitats including other trees	Significant adverse	Significant adverse	Significant adverse	
Protected species	Not significant	Not significant	Not significant	
Notable species (hedgehogs and common birds)	Not significant	Not significant	Not significant	

Topic	Significance of environmental effects			Mitigation
	During construction	Start of operation	Residual (15 years after opening / design year)	
<b>Road drainage and the water environment</b>				
<b>Surface water flooding</b>	For alteration of ground levels, significant adverse to significant beneficial (depending on flood source, location of receptor and size of flood event)	For alteration of ground levels, significant adverse to significant beneficial (depending on flood source, location of receptor and size of flood event)	For alteration of ground levels, significant adverse to significant beneficial (depending on flood source, location of receptor and size of flood event)	<ul style="list-style-type: none"> <li>Use of best practice guidelines for pollution prevention</li> <li>Underpass design mitigates against difficult ground conditions and high groundwater levels</li> <li>Drainage scheme including allowances for flooding and climate change</li> <li>Emergency plan to protect road users during extreme flood event</li> </ul>
<b>Groundwater</b>	Significant - slight to moderate adverse (superficial deposits only, not the Chalk)	Significant - slight to moderate adverse (superficial deposits only, not the Chalk from the lagged effects of construction activities.)	Not significant	
<b>Geology and soils</b>				
<b>Geology and soils</b>	Not significant	Not significant	Not significant	<ul style="list-style-type: none"> <li>Use of best practice controls to mitigate potential releases to air and water</li> <li>Control measures to include management of any contaminated materials, ground gas and risk of unexploded bombs during below ground works</li> <li>Implement Materials Management Plan</li> </ul>
<b>Contaminated land</b>	Not significant	Not significant	Not significant	
<b>Materials</b>				
<b>Materials and waste</b>	Not significant	Not significant	Not significant	<ul style="list-style-type: none"> <li>Optimise material efficiency and use of secondary or recycled materials</li> <li>Responsible sourcing of materials and use of local suppliers</li> <li>Adopt 'design-out waste' principles to reduce waste</li> <li>Implement Materials Logistics Plan, Site Waste Management Plan and Materials Management Plan</li> </ul>

Topic	Significance of environmental effects			Mitigation
	During construction	Start of operation	Residual (15 years after opening / design year)	
<b>People and communities</b>				
<b>Private assets: residential property</b>	Not significant	Not significant	Not significant	Replacement public open space land will be provided where designated land is lost
<b>Private assets: businesses</b>	Significant adverse	Significant adverse	Significant adverse	
<b>Community land and community assets</b>	Significant adverse	Significant adverse	Significant adverse	
<b>Development land</b>	Not significant	Significant beneficial	Significant beneficial	
<b>Local economy</b>	Not Significant	Significant beneficial	Significant beneficial	
<b>Effects on all travellers</b>				
<b>View from the road</b>	Not significant	Not significant	Not significant	<ul style="list-style-type: none"> <li>New footways and cycleways</li> <li>New cycle and disabled user bridges at Porter Street and Princes Quay</li> </ul>
<b>Non-motorised users</b>	Not significant	Not significant	Not significant	
<b>Driver stress</b>	Not significant	Not significant	Not significant	
<b>Combined and cumulative effects</b>				
<b>Combined and cumulative effects</b>	Significant adverse	Significant adverse	Significant adverse	No additional mitigation is considered necessary other than that already specified.



## 4 – What happens next?

We have submitted the Environmental Statement to the Planning Inspectorate as part of an application for a Development Consent Order. The Planning Inspectorate has been appointed by the Secretary of State to examine the application. Granting of the Development Consent Order would give us the legal power to proceed with the scheme.

At the time of publication of the Non-Technical Summary, the application has just entered the acceptance period, which has a maximum period of 28 days. On receipt of the application, the Planning Inspectorate will upload documents to its website and will contact local authorities for confirmation of the adequacy of pre-application consultation. If satisfactory responses are received and all the necessary documents have been provided, the Planning Inspec-

torate will accept the application and the pre-examination stage will begin. At this point we will publish a notice saying where the application documents can be viewed. During the registration period of the pre-examination stage, members of the public can register as interested parties. This will entitle them to make written representations to the Planning Inspectorate. Information on how to register can be found on the Planning Inspectorate's website:

<http://infrastructure.planninginspectorate.gov.uk/>

The pre-examination period ends with the preliminary meeting, which registered interested parties are invited to attend. At the preliminary meeting, the Examining Authority will decide the way that the application is to be examined.

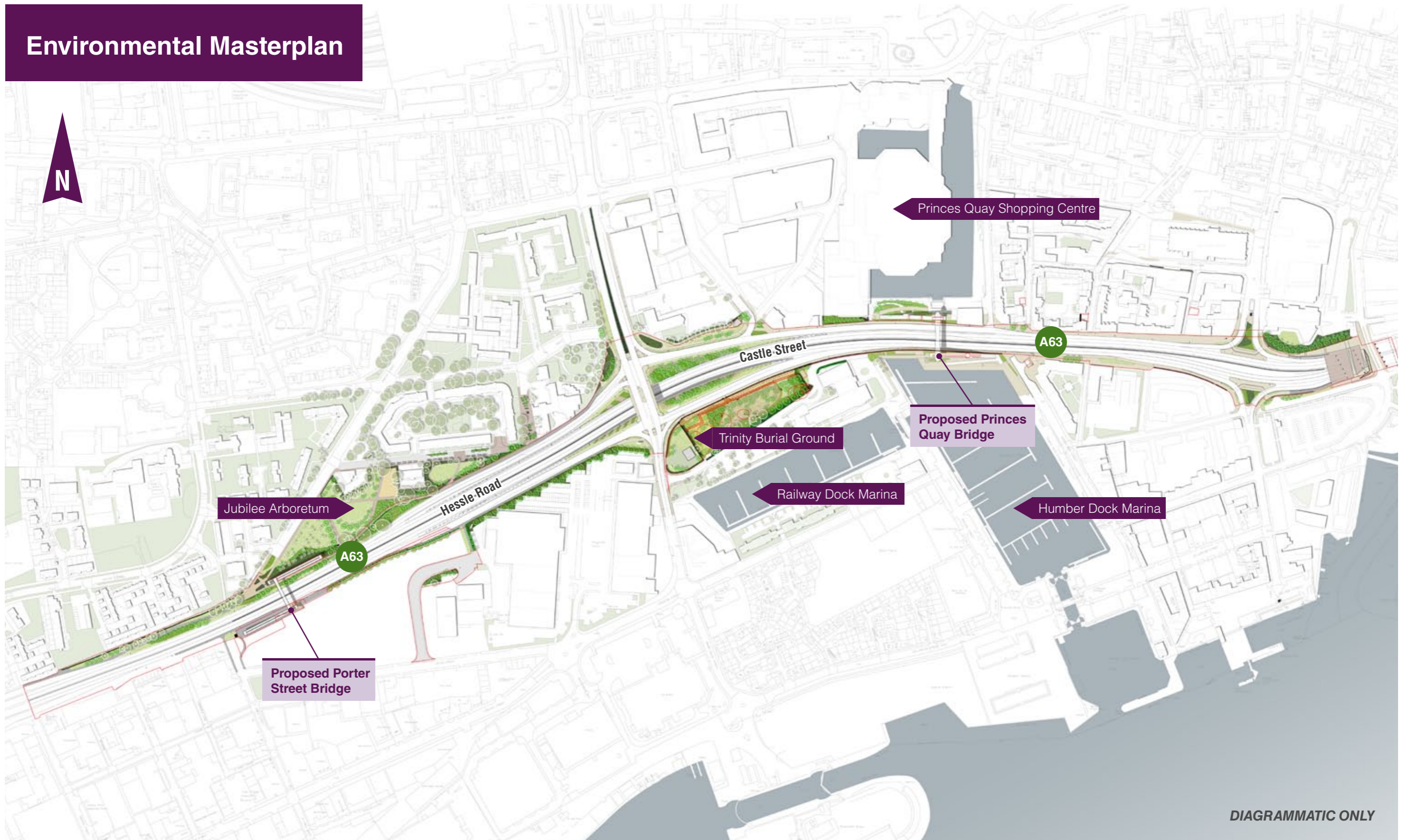
The preliminary meeting marks the start of the examination period during which any necessary hearings will be held to address key issues identified at the preliminary meeting.

Registered interested parties can send written comments to the Planning Inspectorate and can ask to speak at a public hearing. The examination will last a maximum of six months.



The Examining Authority will then have three months to consider its recommendation. This recommendation and a supporting report will then be passed to the Secretary of State for Transport, who will have three months to decide whether or not to grant a Development Consent Order.

Finally, when the Secretary of State's decision is published, there will be a six week High Court challenge period. If there are no High Court challenges, the decision will be final.

# Environmental Masterplan



DIAGRAMMATIC ONLY

Key			
	Permanent land take boundary		Proposed amenity grass
	Existing trees to be retained		Proposed long grasses comprising of wildflower meadow and ornamental grasses
	Proposed semi-mature and extra-heavy standard trees		Proposed bulb mixes
	Existing green spaces		Proposed shrubs and ground cover
	Existing hedgerow to be retained		Proposed resin bound park footpath for Trinity Burial Ground. The Myton Centre public open space and High Street underpass
	Proposed hedgerow		Proposed playground safety surfacing
	Proposed natural stone block/flag paving to the cycleway and footpath within the conversation area and Myton Bridge underpass		Proposed self-binding gravel surface for Trinity Burial Ground
	Proposed bitmac cycle and footpath		



# Trinity Burial Ground landscape proposals



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