22 King Edward Memorial Park Foreshore

22.1 Introduction

22.1.1 This section of the non-technical summary presents the preliminary environmental assessment for the Thames Tunnel project at King Edward Memorial Park Foreshore (Figure 22.1).

22.1.2 At this site it is proposed that the existing North East Storm Relief Sewer would be linked to the proposed Thames Tunnel through a shaft. Currently, the existing combined sewer overflow discharges approximately 31 times each year. The total volume of this discharge is 782,400m$^3$ each year.

22.1.3 In the following section a description of the existing site is given. This is followed by a description of the development proposed at this site.

22.1.4 The environmental topics which have been assessed for this site are listed in the ‘Assessment’ section (0). Preliminary assessment findings are then presented topic by topic.

22.2 Site context

22.2.1 The site is shown as site number 17 on Figure 28.1.

22.2.2 The proposed site is located within the London Borough of Tower Hamlets (Figure 22.1). It is also close to the London Borough of Southwark (to the south of the River Thames).

Figure 22.1 King Edward Memorial Park Foreshore site location
22.2.3 The proposed site is located within the foreshore of the River Thames and part of the adjacent King Edward Memorial Park. Approximately one and a half hectares is required for the temporary construction works with a smaller area for the permanent works. The approximate area is indicated by the red line shown on Figure 22.2.

22.2.4 Currently there is no direct vehicular access to the site. The site can be accessed by foot from the Thames Path which runs along the frontage and through the park to Glamis Road on the west. The park is closed at night.

Figure 22.2 Aerial photograph of King Edward Memorial Park Foreshore*

*Note: The red line boundary is approximate in this image

22.3 Proposed development

22.3.1 The proposal is to intercept the existing combined sewer overflow. With the Thames Tunnel in place, instead of untreated sewage discharging at current volumes directly into the River Thames in front of the park, spills would be diverted into the proposed Thames Tunnel. For a typical year, this would reduce flows from the combined sewer overflow at this site to an average of four a year at a total volume of 84,300m³ a year.

22.3.2 In order for this interception to be achieved, construction works at this site would take approximately four and a half years. An access road would be built that would run from Glamis road through the park to the site. This would be used for access during construction and for maintenance purposes once the tunnel is in operation.
22.3.3 A shaft with an internal diameter of approximately 20m and approximately 60m deep would be constructed. Once constructed, the base of this shaft would join up with the main tunnel, located deep underneath the River Thames. Flows from the existing North East Storm Relief Sewer would be diverted via an interception chamber into the new shaft and then into the main tunnel.

22.3.4 In order to manage and mitigate effects on the environment during construction, a Code of Construction Practice has been drafted. This sets out measures to be adhered to during the construction works.

22.3.5 Most of the construction would take place from 8am to 6pm, Monday to Friday, although limited works may be required beyond these hours, for example for extended concrete pours.

22.3.6 In order to safeguard the environment during construction, a Code of Construction Practice has been drafted. This sets out measures to be adhered to during the construction works.

22.3.7 Figure 22.3 shows an indicative plan of the construction works.

**Figure 22.3 Indicative plan of construction works for King Edward Memorial Park Foreshore**
22.3.8 Once the works at this site have been built, a number of permanent features would be visible (Figure 22.4). There would be a permanent area of new land created within the foreshore and a kiosk to control equipment located in the below ground chambers. The control kiosk would be less than three metres high.

22.3.9 There would also be four ventilation columns; two would be four metres high and the other pair six metres high. The four metre ventilation columns would be required to allow air to be released when flows in the tunnel rise into the shaft. Air would be treated through underground filters and released through one of the four metre ventilation columns. On rare occasions when the tunnel is filling rapidly, the air would be released from the other four metre ventilation column. The six metre columns would be used to release air from the interception chamber.

22.3.10 A new river wall would run along the length of the permanent structure in the foreshore. There would be no requirement for operational lighting.

22.3.11 Access for maintenance purposes would be required every three to six months. Once every ten years more substantial maintenance work would be required.

Figure 22.4 King Edward Memorial Park Foreshore
indicative plan of built development
22.4 Assessment

22.4.1 Based on the existing site and the works proposed, the following environmental topics have been included in the scope of this preliminary environmental assessment:

a. Air quality and odour
b. Ecology – aquatic and terrestrial
c. Historic environment
d. Land quality
e. Noise and vibration
f. Socio-economics
g. Townscape and visual
h. Transport
i. Water resources (ground and surface)
j. Flood risk

22.4.2 In the following sections, information about the preliminary assessment of each of these topics is presented.

22.4.3 As part of the assessment process, consideration has been given to known major developments that may change future environmental conditions. Several major developments in the vicinity are assumed to be completed during the construction period including the Glamis Estate redevelopment to the north of the park. The future environmental conditions are however not anticipated to change significantly from those which exist today as a result of other developments.

22.4.4 Further information on the topic specific methodology for conducting the assessment is given in section 4 of this non-technical summary.

22.5 Air quality and odour

22.5.1 The site is located within the London Borough of Tower Hamlets Air Quality Management Area. Local monitoring data indicates that there are currently exceedences of the air quality standard for nitrogen dioxide in the vicinity of the site. The nearest people who may be sensitive to the development are occupiers of nearby residential dwellings and offices, and users of the park (including playgrounds and tennis courts) and the Shadwell Basin Outdoor Activity Centre.

22.5.2 Based on this preliminary assessment, it is considered that the overall effect on local air quality from construction road traffic, river barges and construction plant is likely to be minor adverse at the residential properties and at the Shadwell Basin Outdoor Activity Centre, and negligible at the nearby offices and the park. In terms of construction dust, this is likely to have a minor adverse effect at the residential properties within 10m of the site, the Shadwell Basin Outdoor Activity Centre and the park, and a negligible effect at the offices, taking account of the dust control measures in the Code of Construction Practice.
22.5.3 Preliminary assessment findings indicate that the effects of odours released from the ventilation column is likely to be negligible.

22.5.4 Based on this assessment, it is considered that mitigation measures are not required.

22.6 Ecology – aquatic

22.6.1 The site is located within the designated River Thames and Tidal Tributaries Site of Metropolitan Importance. The site is adjacent to the Shadwell Basin Site of Importance for Nature Conservation. A narrow strip of foreshore exists, dominated by cobbles and pebbles (Figure 22.5). The river in this location is confined by a man-made vertical river wall. Surveys and data searches indicate relatively low diversity of fish and invertebrates.

22.6.2 Construction effects would be managed in accordance with the Code of Construction Practice. With the Code in place and based on assessment findings at this stage it is anticipated that the loss of habitat due to the presence of a temporary construction area in the river would have a moderate adverse effect on habitats. The loss of habitat would also have a minor adverse effect on fish and invertebrates. Disturbance and compaction of the river habitat would have a minor adverse effect on habitats and invertebrates. All other effects on mammals, fish and invertebrates are considered to be negligible.

22.6.3 It is anticipated that during operation, the permanent loss of river habitat would constitute a moderate adverse effect on habitats and minor adverse on fish and invertebrates. All other effects on aquatic ecology from operation of the project would be negligible, or minor beneficial. Interception of the combined sewer overflow at this site would significantly reduce the occurrence of low dissolved oxygen events which result in fish mortality, which is considered to be a beneficial effect. Improvements in water quality in the local area are predicted to lead to an increase in the diversity and abundance of invertebrates and contribute to an increase in the distribution of pollution sensitive fish and invertebrate species throughout the River Thames, which would all be beneficial effects in the longer term of operation.
Section 22: King Edward Memorial Park Foreshore

Figure 22.5 Foreshore at King Edward Memorial Park site

22.6.4 The presence of structures, both during construction and operation, within the river may have an effect on migrating fish through altered river flows. This will be assessed and reported in the Environmental Statement.

22.6.5 Measures are included within the Code of Construction Practice to manage construction effects. No further mitigation is possible as the extent of the physical works in the river have been reduced as far as practicable. For the operational phase consideration will be given to providing compensation for the loss of habitat, for example through creating habitat elsewhere, and this will be reported in the Environmental Statement.

22.7 Ecology – terrestrial

22.7.1 The site comprises buildings, hardstanding, foreshore habitat, amenity grassland, scattered trees, a boundary tree line and shrub planting. There is also a pond and wildflower planting area within the wider King Edward Memorial Park. The habitats on site may be of value to roosting and foraging bats and wintering birds. Surveys are ongoing for these species and results will be presented in the Environmental Statement. The trees and shrubs support common nesting bird species.

22.7.2 No significant effects on designated sites are anticipated (aquatic ecology effects are considered in section 22.6). Based on preliminary assessment findings, site clearance would result in the loss of vegetation on site which would have a minor adverse effect on habitats, breeding birds, amphibians and invertebrates. Disturbance to breeding birds from construction activities is considered to be a minor adverse effect. Other effects on trees and amphibians and invertebrates are considered unlikely to be significant (negligible). Effects on bats and wintering birds will be assessed and reported in the Environmental Statement.

22.7.3 Given the limited extent of the permanent works and which would be in the foreshore, operational activities are not expected to give rise to significant effects on terrestrial ecology.
22.7.4 In addition to measures in the Code of Construction Practice, measures to address adverse effects during construction are likely to include reinstatement and replacement of trees and planting. Any further measures for bats and wintering birds will be developed subject to survey results and reported in the Environmental Statement.

22.8 Historic environment

22.8.1 The site contains no nationally designated heritage assets. King Edward Memorial Park was established in 1922 and is of medium heritage asset significance. The southern area of the site includes the 19th/20th century embankment river wall (of low heritage asset significance), foreshore and Thames channel. The site lies within the Wapping Wall Conservation Area (of high heritage asset significance). The Grade II listed early 20th century Rotherhithe Tunnel ventilation shaft lies immediately outside the proposed construction site (Figure 22.6), and a Grade II listed slipway lies approximately 35m to the west (both are assets of high heritage asset significance).

22.8.2 The site lies within a locally designated Archaeological Priority Area and the main potential is for the remains of post-medieval 18th-19th century construction debris, ship building material, and remains of post-medieval industrial buildings (of low or medium heritage asset significance), and for medieval riverfront activity (of low to high heritage asset significance depending on the nature and condition of finds). There is also a high potential for palaeoenvironmental remains (e.g. organic remains such as pollens or plant fossils of low or medium heritage asset significance), and an uncertain, possibly moderate potential for prehistoric remains (of low or medium heritage asset significance).

22.8.3 The parapet of the existing river wall would be demolished, constituting a minor adverse effect. Construction works would entail deep excavations which would entirely remove the assets within the footprint of each area of excavation. If such assets were present, this would comprise a high magnitude of impact and would give rise to a minor adverse effect of palaeoenvironmental remains, a minor or moderate adverse effect for post-medieval and medieval remains, and any prehistoric remains (if present).

22.8.4 To mitigate the effect on the river wall, the structure would be recorded and photographed in line with accepted standards to form preservation by record. The desk-based study of the site suggests that no heritage assets of very high significance are anticipated that might merit a mitigation strategy of permanent preservation in situ. The adverse effects could be successfully mitigated by a suitable programme of archaeological investigation before and/or during construction, drawing on a range of techniques. This would include subsequent dissemination of the results and so achieve preservation by record.
22.8.5 Effects on the historic environment arising from the operation of the Thames Tunnel infrastructure at King Edward Memorial Park, on assets including the Wapping Wall Conservation Area and nearby listed structures, will be assessed and presented in the Environmental Statement. Effects could include effects on the historic setting of heritage assets in the surrounding area and effects on buried heritage assets in the foreshore from scouring due to changes in river flows due to new infrastructure in the channel. Any mitigation requirements for operational effects will also be presented.

Figure 22.6 Grade II listed Rotherhithe Tunnel ventilation shaft building

22.9 Land quality

22.9.1 A search of historical and environmental data indicates the presence of a wharf on site. Historically the area around the site has been used for the location of a number of industrial activities including further wharves, engineering works and an oil depot. There is the potential for these activities to have impacted upon the foreshore site, however given the time since most of these processes were active and processes associated with the river flow, these risks are considered to be low.

22.9.2 Previous ground investigations show no significant soil or groundwater contamination and only low levels of sediment contamination in comparison with approved Port Of London Authority guidelines. Ground investigations are underway to confirm the sediment quality. Desk based surveys have identified a high risk from unexploded ordnance.
22.9.3 Based on preliminary assessment findings there may be a slight adverse effect on construction workers due to the potential for exposure to contaminated soils or other materials if they are present, although any exposure risk would be short-term. There would be a negligible effect on the built environment as it is considered unlikely that contaminants contained in subsurface materials would affect buried structures. The preliminary assessment undertaken to date has identified no need for mitigation during the construction phase. The Environmental Statement will consider information from ground investigations and the potential for foreshore sediment contamination.

22.9.4 During operation there would be negligible effect on future users and the built environment. The assessment identified no need for mitigation during the operational phase.

22.10 Noise and vibration

22.10.1 The noise environment is dominated by road traffic noise. The nearest locations to the site which are sensitive to noise and vibration are residential dwellings at Free Trade Wharf to the north east and properties on Shadwell Pierhead, Glamis Road, Abbotshades Road and Glamis Place which are to the south, west, south east (across the River Thames) and north respectively.

22.10.2 Based on this preliminary assessment, significant noise and vibration effects arising from construction activities are predicted at residential properties at Free Trade Wharf (north and south). No significant effects as a result of the operation of the site are predicted.

22.10.3 During construction, the contractor would be required to follow best practice (as described in the Code of Construction Practice) at all times to reduce noise and vibration effects on the local community for example through suitable siting of equipment on site.

22.10.4 It is anticipated that additional mitigation would be required to address significant noise and vibration effects. This could include the use of localised screens and enclosures to reduce noise from particularly noisy, static operations.

22.10.5 The next stage of the assessment will profile the variation in construction noise levels across the programme of work with the aim of refining mitigation design and seeking to reduce the significant effects of construction noise and vibration. Further details of mitigation measures will be provided in the Environmental Statement including the significance of residual effects once mitigation has been taken into account.
22.11 **Socio-economics**

22.11.1 The proposed construction site includes an area of green open space, part of a hard-surfaced sports area, a works compound and an area of foreshore on the River Thames as well as a section of the Thames Path. Within the wider park are other areas used for sports including football, tennis and a bowling green as well as a children’s playground and bandstand. Residential dwellings and the Shadwell Basin Outdoor Activity Centre surround the site. The site and surrounding area is well used for a range of purposes including walking, cycling, active and passive recreation and river-borne activities.

22.11.2 During construction, there are considered to be moderate adverse effects arising from the loss of facilities within King Edward Memorial Park and amenity impacts on its users and from amenity impacts on residents and users of Shadwell Basin Outdoor Activity Centre. There are considered to be minor adverse effects arising from amenity impacts on users of the Thames Path and negligible effects from the diversion of the Thames Path. Once operational, there would be a moderate beneficial effect resulting from the gain in publicly accessible space associated with the extension to the pavement comprising the Thames Path.

22.11.3 In completing the assessment, there is scope for further construction phase mitigation measures to be incorporated in the design with the aim of seeking to reduce significant adverse amenity effects which have been identified in this preliminary assessment.

22.11.4 For the operational phase, there are not expected to be any socio-economic effects at King Edward Memorial Park which require mitigation.

22.12 **Townscape and visual**

22.12.1 The site is located in Wapping Wall Conservation Area, immediately east of the Rotherhithe Tunnel. The majority of the park is in a good condition although there are opportunities for enhancement along the route of the existing Thames path, which is narrow and overshadowed at the western end. The site is located within an important stretch of the River Thames which is valued at a regional level.

22.12.2 Based on the preliminary assessment findings, the presence of cranes, hoardings and site traffic, and the intensity of construction activity are likely to have major adverse townscape effects on the character of the site and the River Thames – East London Reach and Wapping Wall character areas. There would be moderate adverse effects on the Rotherhithe Street Residential area. There would be minor adverse effects on three other areas. Once operational preliminary assessment findings indicate there would be minor to moderate beneficial townscape effects on the site, the River Thames - East London Reach and Rotherhithe Street Residential. There would be negligible to minor beneficial effects on King’s Stairs Garden and Southwark Park, due to new public realm and well-designed above ground structures. The level of significance is dependent on the final design and will be refined for the Environmental Statement.
22.12.3 In terms of visual amenity during construction, preliminary assessment findings indicate there are likely to be major adverse effects on views from the Thames path, the eastern side of King Edward Memorial Park and the Old Salt Quay public house, due to the visibility of the cofferdam, cranes, hoardings and site traffic. There are also likely to be moderate adverse effects on viewpoints from Sovereign Crescent, Trafalgar Court and the tennis courts within King Edward Memorial Park. There would be minor adverse or negligible effects elsewhere in the assessment area. Once operational, preliminary assessment findings indicate that there would be minor to moderate beneficial visual effects on viewpoints including from Sovereign Crescent, Trafalgar Court and King Edward Memorial Park due to the filtered visibility of new structures and public realm. There would be negligible to minor beneficial effects on viewpoints at Limehouse Basin and King’s Stairs Garden. The level of significance is dependent on the final design and will be refined for the Environmental Statement.

22.12.4 Measures to be employed during the construction phase are being incorporated into the proposals, for example, through protection of trees to British standards. In terms of operation, a process of iterative design and assessment has been employed to reduce adverse effects and maximise beneficial effects. It is likely that there would be no significant adverse effects during operation and therefore no mitigation is proposed.

22.13 Transport

22.13.1 The site has moderate public transport accessibility being located within close proximity of a number of local bus services and the Shadwell DLR Station. The site is on the east side of Glamis Road and construction vehicle access is proposed via the A1203 and new access road.

22.13.2 During construction, the number of heavy goods vehicle movements would be comparatively low. However, the nature of the construction site layout at this location would result in temporary highway layout changes including junction modifications and the temporary removal of traffic calming features along Glamis Road which is considered likely to result in a moderate adverse effect on road network operation and delay. Effects on pedestrian and cyclist amenity and safety are expected to be moderate adverse due to the loss of footways, local diversions and delays to journey time. During the operational phase there would be very occasional vehicle trips to and from the site for maintenance activities but these would have a negligible effect on the surrounding transport networks.

22.13.3 The project is being designed to limit the effects on the transport networks as far as possible. At this location, mitigation measures during the construction phase are likely to be required and would involve traffic signal optimisation to improve pedestrian crossing time and junction capacity, and undertaking a road safety audit. Mitigation is not required for the operational phase.
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22.14 Water resources - ground water

22.14.1 The proposed shaft would pass through both the upper and lower aquifers. Associated interception infrastructure would penetrate the upper aquifer. Both the upper and lower aquifers are sensitive environmental receptors. The upper aquifer is defined as being of medium value and the lower aquifer is defined as being of high value.

22.14.2 Construction effects on the upper aquifer would include physical obstruction to flow and creation of a pathway for pollution. Embedded design measures are anticipated to ensure that potential effects associated with obstruction of flow are negligible. The application of a risk based approach to remediation of identified contaminated groundwater would ensure that potential pollution effects are also negligible. Dewatering of the lower aquifer during construction would impact groundwater availability and could induce groundwater movement. This effect is subject to further assessment and is yet to be quantified but has the potential to result in significant adverse effects.

22.14.3 Operational effects on the upper aquifer resulting from obstruction of ground water flow and seepage to and from the shaft on the upper aquifer would be negligible. Operational effects on the lower aquifer would be minor adverse.

22.14.4 Monitoring of groundwater levels and water quality would continue during construction.

22.15 Water resources – surface water

22.15.1 The site is located in the River Thames foreshore within a zone of the river defined by the Environment Agency as the Thames Middle waterbody, as classified under the Thames River Basin Management Plan. This is currently classified as being at moderate potential status, with a status objective of good potential by 2027. The Lavender Pond Local Nature Reserve is located within 2 km of the site and is water-dependent.

22.15.2 There is the potential for effects on surface water resources from the proposed construction works through surface water runoff and exposure of the drainage system to contaminants. After taking into account the measures incorporated into the design and Code of Construction Practice, such effects are expected to be manageable and not significant. No mitigation would therefore be required.

22.15.3 There is also potential for the loss in river bed from the construction to change the river flows, which could lead to scour at the flood defences. The effects would be largely temporary during construction as some natural foreshore restoration would occur after temporary construction structures are removed. Some additional mitigation may be required for the effects of the permanent works within the foreshore and this will be identified in the Environmental Statement.

22.15.4 Once operational, the scheme would reduce the number of discharges from the North East Storm Relief Sewer combined sewer overflow (Figure 22.7), from the current level of 31 spills a year on average to a predicted level of four spills per year once the tunnel is in place.
22.15.5 This reduction would have a beneficial effect on water quality. The number of risk days for river users being exposed to pathogens would be reduced by up to 108 days. In addition, the tonnage of sewage derived litter can be expected to be reduced by approximately 200 tonnes to 20 tonnes per year.

**Figure 22.7 North East Storm Relief Sewer combined sewer overflow outlet**

22.16 **Flood Risk**

22.16.1 The majority of the site is within the tidal River Thames. The presence of structures within the foreshore could impact flow within the River Thames and the works required to construct the tunnel in the vicinity of the site could affect the local flood defences; further studies are being completed to assess these potential impacts and will be reported in the Environmental Statement.

22.16.2 Flood defences would be constructed during both the construction and operational phases to provide a level of protection equal to the existing defences located along the promenade, and ground levels on the site would also be above the design flood level. The effects of changes in scour and deposition would be reduced to an appropriate level through good practice design of the temporary and permanent structures.

22.17 **Further information**

22.17.1 Further information regarding preliminary assessment findings for King Edward Memorial Park can be found in Volume 23 of the Preliminary Environmental Information Report.