11 King George’s Park

11.1 Introduction

11.1.1 This section of the non-technical summary presents the preliminary environmental assessment for the Thames Tunnel project at King George’s Park.

11.1.2 At this site it is proposed that the existing Frogmore Storm Relief–Buckhold Road Sewer would be linked to the proposed Thames Tunnel via a shaft and a connection tunnel (the proposed Frogmore connection tunnel). Currently the existing combined sewer overflow discharges approximately 19 times a year. The total volume of this discharge is 85,600m³ each year.

11.1.3 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.

11.1.4 The environmental topics which have been assessed for this site are listed in the ‘Assessment’ section (11.4). Preliminary assessment findings are then presented topic by topic.

11.2 Site context

11.2.1 The site is shown as site number 6 on Figure 28.1.

11.2.2 The site is located within the London Borough of Wandsworth (Figure 11.1).

Figure 11.1 King George’s Park site location
11.2.3 The site is located at the northern end of King George’s Park, adjacent to the park entrance from Buckhold Road. Approximately 0.2ha is required for the temporary construction works. This is indicated by the red line shown on Figure 11.2. The area of land required for the permanent works would be substantially smaller than that required for construction.

11.2.4 The site is bounded by residential and commercial properties to the north, east and west, and by the main area of the park to the south. The site is accessible from various pedestrian park entrances, but there is currently no public vehicular access to the park. The park is crossed by a number of footpaths, although there are no statutory public rights of way.

Figure 11.2 Aerial photograph of King George’s Park*

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

11.3 Proposed development

11.3.1 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 Wandle and then the River Thames, flows would be diverted into the proposed Thames Tunnel. For a typical year, this would reduce flows from the combined sewer overflow to an average of approximately 1,500m$^3$/year.

11.3.2 In order for this interception to be achieved, construction works at this site would take approximately two and a half years. A temporary construction access would be created off Neville Gill Close, this would require lowering of the existing curb and removal of the iron railing fence.

11.3.3 Trees located within the footprint of the site would be removed and those bordering the site would be pruned back, and the topsoil would be stored for reinstatement when works are complete. During construction, trees adjacent to the site would be protected.
11.3.4 Through an interception chamber, flows from the existing Frogmore Storm Relief – Buckhold Road combined sewer overflow would be diverted down a shaft with an internal diameter of approximately 9m and approximately 20m deep. The shaft would be constructed on the line of the proposed Frogmore Connection Tunnel, which would run approximately 1.1km from King George’s Park to Carnwath Road, via Dormay Street, and would be 2.6 metres in diameter. At Carnwath Road it would join up with the main tunnel.

11.3.5 Most of the construction works would take place from 8am to 6pm, Monday to Friday. Limited works may be required beyond these hours.

11.3.6 In order to manage and mitigation the effects on the environment during construction, a Code of Construction Practice has been drafted. This sets out measures to be adhered to during the process of construction works. Figure 11.3 shows an indicative plan of the construction works.

Figure 11.3 Indicative plan of construction works for King George’s Park

11.3.7 Once the works at this site have been built, a number of permanent works would remain (Figure 11.4). There would be an area of hardstanding around the infrastructure to enable access into the shaft, tunnel and other ancillary structures for inspection and maintenance purposes. This would usually be publicly accessible except during maintenance when it would be fenced off. Access for planned maintenance would be required every three to six months. Once every ten years more substantial maintenance work would be required.
11.3.8 There would be a new gated access for maintenance vehicles of Neville Gill Close.

11.3.9 The shaft would be finished level with the surrounding hardstanding which would be approximately 1 metre above existing ground level, because the existing sewer is shallow at this location so requires infrastructure to be raised above it. This level would also ensure the infrastructure is protected from the risk of flooding and enables direct vehicle access from Neville Gill Close which is elevated above the park level. There would be covers on top of the shaft to allow access and inspection. The other below ground structures would also have covers to enable access and inspection.

11.3.10 Above ground structures would include a ventilation column approximately 6m high to let air out of the interception chamber during times of flows. There would also be a separate ventilation column approximately four metres high linked to the shaft. Most of the time, air would be drawn into the shaft and tunnel via the 4 metre ventilation column and through louvres (housed in a separate above ground ventilation structure approximately 2.5 metres high), to ensure that the air within the main tunnel is continuously circulated. From time to time when the tunnel is filling up, air may be expelled via below ground filters and out through the ventilation system. There would also be a separate kiosk, approximately 2.5 metres high, to house electrical and control equipment.

Figure 11.4 King George’s Park indicative plan of built development
11.4 **Assessment**

11.4.1 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

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

11.4.3 As part of the assessment process, consideration has been given to known major developments that may change future environmental conditions. At King George’s Park consideration has been given to the Business Village, a mixed use development in Broomhill Road and the Cockpen House development of several buildings with residential and commercial space.

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

11.5 **Air quality and odour**

11.5.1 The King George’s Park site is located within the London Borough of Wandsworth Air Quality Management Area. Local monitoring data indicates that there are currently exceedences of air quality standards in the vicinity of the site. The nearest people who may be sensitive to the development are occupiers of nearby residential dwellings (on Buckhold Road) and commercial and office premises including Southside shopping centre and the new Business Village, as well as users of a nearby day centre, nursery, clinic, West Hill Centre (adult college) and Army Cadet Force building, and visitors to the children’s zoo in the park.

11.5.2 Based on this preliminary assessment, it is considered that the overall effect on local air quality from construction road traffic and construction plant is likely to be minor adverse at the residential properties, day centre, nursery, clinic, adult college and Army Cadet Force building and negligible at the commercial/office premises and park/zoo. In terms of construction dust, this is likely to have a minor adverse effect on the Army Cadet Force building, clinic, nursery and day centre and a negligible effect elsewhere,
taking account of the dust control measures in the Code of Construction Practice.

11.5.3 Preliminary assessment findings indicate that the effect of odour from air released from the ventilation column, which may happen from time to time when the tunnel is filling, is likely to be negligible.

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

11.6 Ecology – aquatic

11.6.1 The sewage outfall that would be intercepted currently discharges into a section of the River Wandle which is covered beneath the Southside shopping centre. The non-tidal River Wandle is designated as a Site of Borough Importance. The downstream Wandle is part of the River Thames and Tidal Tributaries Site of Metropolitan Importance.

11.6.2 There would be no ‘in-river’ works associated with this site. No further consideration of the impacts associated with construction has therefore been undertaken for aquatic ecology. Effects on the ornamental lake are considered in the terrestrial ecology assessment.

11.6.3 During operation, reduction in nutrient levels entering the river would have a moderate beneficial effect on habitats. The reduction in fish mortality that would result from improved oxygenation of the water is also considered a moderate beneficial effect. There would also be a moderate beneficial effect through increased distribution of rare and/or pollution sensitive fish species. All effects on invertebrates would be minor beneficial by year six. Effects on mammals would be negligible.

11.6.4 No mitigation is required at this site because no adverse effects are anticipated.

11.7 Ecology – terrestrial

11.7.1 The site is within King George’s Park Site of Importance for Nature Conservation. The site comprises hardstanding, amenity grassland, scattered trees and introduced shrub. These habitats continue into the wider park and include a large ornamental lake. The site is of value to common nesting birds, common amphibians, hedgehogs and invertebrates. It is also of potential value to roosting and foraging bats. Surveys for the latter species are ongoing and will be reported in the Environmental Statement.

11.7.2 Based on preliminary assessment findings, the majority of effects on terrestrial ecology would be of site level adverse significance. The loss of trees would have a local adverse effect. Disturbance to breeding birds is likely to be negligible. The effects on bats will be assessed and reported in the Environmental Statement.

11.7.3 It is anticipated that operational activity would be limited to occasional maintenance works, which are considered unlikely to have significant effects on terrestrial ecology.
11.7.4 In addition to measures in the Code of Construction Practice, which includes protection of trees, measures to address adverse effects during construction may include reinstatement and replacement of trees and planting. Further measures for bats will be developed subject to survey results as required and will be assessed and reported in the Environmental Statement.

11.8 Historic environment

11.8.1 The site is located within King George’s Park, which was established in the 1920s, and is of medium heritage asset significance. The site contains no nationally designated heritage assets. Down Lodge, a Grade II listed building, constructed in the mid to late 18th century, lies around 160m to the southwest.

11.8.2 The site lies within an Archaeological Priority Area and the main potential in terms of buried heritage is for palaeoenvironmental remains (eg organic remains such as pollens or plant fossils) of low or medium heritage asset significance, and post-medieval drainage ditches of low or negligible heritage asset significance. The potential for earlier (prehistoric, Roman and medieval) remains is considered to be low, as the site lay outside the known areas of settlement in these periods (Figure 11.5).

11.8.3 Construction works would entail removal of the railings at the northern end of the park which would give rise to a minor adverse effect. Deep excavations would entirely remove any buried heritage assets within the footprint of each excavation. If any buried assets were present, this would comprise a high magnitude of impact and lead to a minor or moderate adverse effect on palaeoenvironmental remains, and a minor adverse effect on post-medieval ditch remains.

11.8.4 To mitigate the effect on the park railings, a basic visual record of the railings and park would be made prior to the start of construction. The desk-based study of the site suggests that no buried 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.

11.8.5 Effects from the operation of the Thames Tunnel infrastructure on the historic setting of heritage assets in the surrounding area will be assessed and presented in the Environmental Statement. Any mitigation requirements will also be presented.
Land quality

11.9.1 A search of historical and environmental data indicates that the site has not been subject to significant previous contaminative uses. Historical mapping indicates that the site has remained undeveloped since the late 19th century. No potential contaminative sources were identified at or in the immediate vicinity of the site during a walkover survey. Although some minor commercial and light industrial buildings are located on the opposite side of Buckhold Road. Previous ground investigations have recorded no significant soil contamination. Low levels of groundwater contamination levels have been recorded. Desk based surveys have identified a medium to high risk from unexploded ordnance.

11.9.2 Based on preliminary assessment findings, there could be a slight adverse effect on construction workers due to the potential for exposure to contaminated soils or other materials, although any exposure risk would be short-term limited to the construction period. There would be a negligible effect built structures, such as existing sewerage infrastructure at the site, as it is considered unlikely that contaminants contained in subsurface materials would affect buried structures.

11.9.3 During operation there would be a negligible effect on future users and the built environment.

11.9.4 Based on the information reviewed to date no mitigation is anticipated during construction or operation.
11.10 Noise and vibration

11.10.1 A noise survey has been carried out around the site (Figure 11.6). The site is dominated by road traffic noise. The nearest locations to the site which are sensitive to noise and vibration are residential dwellings at Albon House.

11.10.2 Based on this preliminary assessment, significant noise effects arising from construction activities are not predicted. Significant vibration effects arising from construction are however predicted at residential properties at Parkview Court. No significant effects as a result of the operation of the site are predicted.

11.10.3 During construction activities, 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 upon the local community for example through suitable siting of equipment on site.

11.10.4 In order to address the significant effect from vibration, further measures may be required which could include careful selection of equipment and programming of particular activities to minimise potential disturbance.

11.10.5 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.

Figure 11.6 Recording background noise along Buckhold Road, outside King George’s Park
11.11 **Socio-economics**

11.11.1 The site comprises an area of green open space, forming part of a larger park. Within the park to the south of the site are a Children’s Centre and playground, and ornamental lake. Residential dwellings and other uses, including the Penfold Day Centre, Southside shopping centre and business units surround the rest of the site (Figure 11.7). The open space is moderately well used for informal recreation.

**Figure 11.7 Penfold Centre**

11.11.2 During construction, there would be moderate adverse effects on the amenity of users of the Children’s Centre and the amenity of users of King George’s Park open space. There would be minor adverse effects on the amenity of nearby residents and on users of King George’s Park open space as a result of temporary loss of use of an area of open space. The amenity impacts on users of the Penfold Day Centre would be negligible. Once operational, there would be a negligible effect resulting from the loss of open space associated with the permanent operational structures.

11.11.3 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.

11.11.4 For the operational phase no socio-economic effects requiring mitigation are predicted at this stage of the assessment.
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11.12 **Townscape and visual**

11.12.1 The site is located in the northern tip of King George’s Park, adjacent to Buckhold Road and Neville Gill Close. It comprises open grassland and mature trees. The condition of the townscape is generally good.

11.12.2 Based on preliminary assessment findings, during construction the clearance of vegetation, presence of site hoardings and intensity of construction activity would have major adverse effects on the character of the site and the King George’s Park character area. There would be moderate adverse effects on King George’s Sports Ground and Wandsworth Town Residential Area due to vegetation clearance and the presence of cranes, site hoardings and the intensity of construction activity. Once operational, preliminary assessment findings indicate that there would be minor to moderate beneficial townscape effects on the site and King George’s Park due to the creation of a new high quality public realm. The level of significance is dependent on the design and will be refined for the Environmental Statement.

**Figure 11.8 View north from the lakeside footpath close to the tennis courts**

11.12.3 In terms of visual amenity, during construction there would be major adverse visual effects on five viewpoints, including Buckhold Road, and views from within King George’s Park. There would be moderate adverse effects on views from Fosters Walk, Wandsworth High Street and Neville Gill Close due to the visibility of tree clearance, cranes and construction activity. There would be minor adverse visual effects on six viewpoints including viewpoints on Buckhold Road, Merton Road and Broomhill Road due to the visibility of tree clearance and cranes. Once operational, there would be minor to moderate beneficial visual effects on three viewpoints including the Chinese bridge, lakeside footpath close to the tennis courts.
and lakeside footpath close to the play area due to the creation of a new high quality public realm. There would be negligible to minor beneficial effects on views from Neville Gill Close due to visibility of the new high quality public realm and minor adverse visual effects on the viewpoint on Buckhold Road due to the loss of trees within the park. The level of significance is dependent on the design and will be refined for the Environmental Statement.

11.12.4 Mitigation measures during the construction phase are being incorporated into the proposals, for example, protection of trees. In terms of operation, a process of iterative design and assessment is being employed to reduce adverse effects which will continue until the scheme design is finalised. This will be reported in the Environmental Statement.

11.13 Transport

11.13.1 The King George’s Park site has good public transport accessibility being located within close proximity of bus stops serving Putney, Clapham Junction, Vauxhall and Wimbledon. The site is on the west side of Neville Gill Close and construction vehicle access is proposed via Wandsworth High Street (A3), Buckhold Road (A218) and Neville Gill Close.

11.13.2 During construction, the number of heavy goods vehicle movements would be comparatively low. Construction traffic and the site layout are considered likely to result in a minor adverse effect on road network operation and delay. Effects on pedestrian and cyclist amenity and safety are expected to be minor adverse and negligible, respectively. A negligible effect is expected on public transport and river passenger services. During the operational phase there would be very occasional vehicle trips to and from the site for maintenance activities and these would have a negligible effect on the surrounding transport networks.

11.13.3 The project is being designed to limit the effects on transport networks as far as possible. At this location, mitigation measures during the construction phase are likely to include provision of safe crossing points for pedestrians across the site access. Mitigation is not required for the operational phase.

11.14 Water resources - ground water

11.14.1 The proposed shaft would pass through the upper aquifer, which is of medium value, and into the underlying London Clay (which is not an aquifer). The shaft does not penetrate the lower chalk aquifer beneath. Associated interception infrastructure would be located in the upper aquifer.

11.14.2 Construction and operational effects on the upper aquifer would be limited to physical obstruction to groundwater flow and this is anticipated to be negligible.

11.14.3 No soil or groundwater contamination has been identified on site to date but should any be encountered, the risks would be assessed and appropriate remediation undertaken. The effect on groundwater quality is predicted to be negligible.
11.14.4 Monitoring of groundwater levels and quality would be undertaken during construction.

11.15 **Water resources – surface water**

11.15.1 The site is located 200 metres to the east of the River Wandle and one kilometre south of the River Thames. In addition to these two watercourses, there is a lake located within King George’s Park; this is assumed to be an artificial lake, which is manually filled and not linked to the Wandle or its tributaries (Figure 11.9).

11.15.2 The section of the River Thames closest to the site, and a stretch downstream which could also be affected, are classified as being of ‘moderate’ quality status, with a status objective of ‘good’ by 2027. The River Wandle is classed as being of ‘poor’ status, with an overall status objective of ‘good’ by 2027. There are a number of nationally and locally designated water-dependent conservation sites within 2 kilometres of the site.

11.15.3 Construction effects would be managed via the Code of Construction Practice. With the Code in place effects on surface water resources from surface water runoff and potential contamination of the drainage system are not expected to be significant. No mitigation would therefore be required.

11.15.4 Once operational, the scheme would reduce the number of discharges from the Frogmore Storm Relief – Buckhold Road combined sewer overflow to a predicted level of one spill per year. 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 80 days per year. In addition, the tonnage of sewage derived litter could be expected to be reduced from approximately 22 tonnes to less than one tonne per year.

*Figure 11.9 View of lake in King George’s Park*
11.16 Flood risk

11.16.1 The main source of flood risk to the site is from the tidal River Thames and the River Wandle. The site is located within the ‘high probability’ flood zone, although it is protected from tidal flooding by defences which run along the banks of the Thames.

11.16.2 During extreme fluvial flood events, the River Wandle could burst its banks and flood the park area. The development could therefore potentially reduce the volume of flood storage within the Park. As far as possible the design is being configured to ensure there would be no increase in flood risk throughout the surrounding area due to the development. Further studies are underway to assess potential effects on flooding.

11.16.3 The hard standing areas surrounding the shaft could potentially increase surface water runoff from the site, and appropriate mitigation measures will be developed to manage surface water in line with current policy requirements.

11.17 Further information

11.17.1 Further information regarding preliminary assessment findings for King George’s Park can be found in Volume 12 of the Preliminary Environmental Information Report.