Please note:

Further details are provided in the Final Report on Site Selection Process (doc ref: 7.05) that can be found on the Thames Tideway Tunnel section of the Planning Inspectorate’s web site.
Site suitability report C10XB

Cremorne Wharf Depot
Thames Tunnel
Site suitability report C10XB

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List of abbreviations

AOD above Ordnance Datum
BAP biodiversity action plan
BT British Telecom
CPO compulsory purchase order
CSO combined sewer overflow
DLR Docklands Light Railway
EA Environment Agency
GLA Greater London Authority
HGV heavy goods vehicle
LNR local nature reserve
LPA local planning authority
LU London Underground
m metre/metres
MOL Metropolitan Open Land
ONS Office of National Statistics
ORN Olympic Route Network
PLA Port of London Authority
POS public open space
PTAL public transport accessibility level
SAM scheduled ancient monument
SINC site of importance for nature conservation
SNCI site(s) of nature conservation importance
SSR site suitability report
SSSI site(s) of special scientific interest
SUDS sustainable urban drainage systems
TfL Transport for London
TD tunnel datum
TLRN  Transport for London Road Network
TPA   Thames Policy Area
UDP   unitary development plan
UXO   unexploded ordnance
1 Introduction

1.1 Purpose and structure of the report

1.1.1 The Site selection methodology paper (May 2009 and revised August 2011)\textsuperscript{a} outlines the process to be used to create the preferred list of main tunnel sites, and this process also applies to CSO sites. Paragraph 2.3.31 lists the type of general considerations that will be addressed in each site suitability report. Whether a consideration is relevant to the assessment of a site will depend on available information and professional judgement.

1.1.2 This report was prepared through the assessment of information from the perspective of a number of technical disciplines: engineering, planning, environment, property and community. The reports have been prepared on the basis of the information listed in Appendix 1 and this level of information is considered to be appropriate to this stage of assessment.

1.1.3 The Site selection background technical paper provides information on the requirements for different types of sites, their sizes and typical activities/facilities within the sites.

1.1.4 Each site suitability report considers a particular site on its own merits. In addition, an Engineering options report was produced, which relates to main tunnel and connection tunnel options. Information from both of these reports will feed into the technical assessment of how well the site may fit in with tunnel design options, ensuring combinations of sites spread across the length of the tunnel route provide a reasonable spatial distribution of sites (that will best assist with the construction of the tunnel, operation and maintenance). The outcomes are reported in the Phase two scheme development report.

1.2 Background

1.2.1 The process for selecting sites is set out in the Site selection methodology paper. All sites have previously passed through the following parts of Stage 1:

- Part 1A – Creation of the long list of potential main tunnel (and CSO) sites
- Part 1B – Creation of a short list of potential main tunnel (and CSO) sites
  - Table 2.2: Long list of main tunnel (and CSO) sites – an assessment against set considerations and values
  - Table 2.3: Draft short list of main tunnel (and CSO) sites – assessment against a list of more detailed considerations
  - Workshops to consider each site to arrive at a short list of sites.

\textsuperscript{a} The amendments made in August 2011 do not change the site selection methodology process. The amendments only related to the introduction of a second phase of consultation (paragraphs 2.3.13-2.4.15) and minor factual updates.
1.2.2 The final part of Stage 1 includes this report. The following is an overall summary of all elements that apply to all the sites on the final short list:

- Part 1C – Creation of the preferred list of main tunnel (and CSO) sites – site data, site visits, site suitability reports, engineering options report and optioneering workshops that are reported in the Phase two scheme development report.

1.2.3 The Site selection methodology paper also contains a provision for a back-check process in paragraph 2.5.6 that states:

“If any sites for any of the main tunnel sites or intermediate sites (or CSO site) are eliminated for any reason, if there are significant changes of circumstances in relation to existing sites or combinations of sites, if new or replacement sites are required or found or if the engineering design develops in unexpected ways then a targeted repeat of stages 1-3 will need to be undertaken in order to fill in any site gaps.”

1.3 Consultation

1.3.1 Thames Water’s approach to engagement and consultation for the Thames Tunnel project is outlined in the Statement of Community Consultation and the accompanying Community Consultation Strategy. Thames Water has engaged regularly with all potentially affected London local authorities, other stakeholders and interested parties on sites and the project.

1.3.2 Phase one consultation has been completed for all the preferred and shortlisted sites along with the three main tunnel route options. The analysis of the consultation responses is set out in the Report on phase one consultation and Interim engagement report. Any relevant site comments were considered at the post phase one consultation optioneering workshops. The outcomes of these workshops are reported in the Phase two scheme development report. After the workshops, engagement on sites has continued with key stakeholders, and the engineering design for sites has also continued in parallel. In autumn 2011, phase two consultation will provide another opportunity for people to comment on sites.

2 Site information

2.1 Site and surroundings

2.1.1 This site is one of the back-check shortlisted sites for Lots Road Pumping Station CSO. This section provides an overview of all the site information that will be used by one or more disciplines to assess the site in sections 3 to 9 of this report.

2.1.2 Site C10XB is located at Cremorne Wharf off Lots Road in the Royal Borough of Kensington and Chelsea (RBKC). A site location plan is attached as Appendix 2.

2.1.3 Site C10XB comprises a safeguarded wharf and safeguarded waste management site. The site is bound to the southeast by the River Thames, on the north by Thames Water’s Lots Road Pumping Station,
which in turn fronts onto Lots Road, to the west by Lots Road Power Station and to the east by Chelsea Wharf. Chelsea Creek is located approximately 55 metres to the south of the site.

2.1.4 The wider area is a mix of former industrial riverside with Victorian terraced housing inland.

2.1.5 The adjacent former Lots Road Power Station is subject to a residential/office/commercial mix redevelopment scheme by Hutchison Whampoa (Circadian) and has planning permission.

2.1.6 The Chelsea Wharf site to the east comprises existing offices, workshops and a newer, five-storey residential apartment block. Beyond Chelsea Wharf is public open space, Cremorne Gardens. All the mapped designations, where data was available, are shown on the planning and environment plans in Appendix 3.

2.1.7 Photographs of the site and surroundings, together with an aerial photograph of the site, are attached as Appendix 4.

2.1.8 There is direct road access to the site from Lots Road (either side of the Thames Water Pumping Station). There is no rail network local to the site. There are existing protected wharf/jetty facilities at the site, originally serving the waste transfer station but now understood not to be in use other than for storage. A preliminary transport plan for the site is attached as Appendix 5.

2.1.9 Third-party assets and significant utilities are listed below and are shown on the services and geology plan in Appendix 6:

- Five-storey office/residential building on the outside northern part of the site (Chelsea Wharf)
- Lots Road Power Station (disused) to the outside south-western part of the site
- A river jetty over the CSO outfall
- A campshed to the southwest of the jetty which forms a functional part of the safeguarded wharf.
- Counters Creek Sewer, 2.896m diameter, through the outside north-western edge of the site (CSO connection is to this sewer).

2.1.10 The locations of other third-party assets, such as BT and fibre optic communication cables, are to be confirmed by further studies and utility searches and may not be shown on the services and geology plan.

2.1.11 Information on the geology specific to this site can be found within the services and geology plan which is in Appendix 6. This plan shows that the shaft would be founded in London Clay.

2.2 Type of site

2.2.1 The site C10XB is being considered as a CSO site to intercept the Lots Road Pumping Station CSO (CS10X).
3 Proposed use of site – construction phase

3.1.1 The proposed construction phase layouts for the CSO site are located in Appendix 7 – Construction phase layout, and are based on a preliminary assessment.

3.1.2 The construction phase layout drawings are illustrative and show:
- the layout as a CSO site
- potential access point.

3.1.3 These drawings provide initial preliminary schematic layouts that have not been optimised. If the site proceeds to the next stage as a preferred site, construction phase layouts would be optimised to minimise impacts.

3.1.4 Photographs of typical activities associated with the CSO site construction phase are provided in Appendix 7. Potential above-ground construction features include:
- approximately 3m high hoarding around the site boundary
- welfare facilities, temporary structures, approximately 3m high
- grout plant, approximately 3m to 5m high, including silos
- mobile crane, approximately 30m high (maximum and not for full construction duration).

3.1.5 Preliminary data associated with the construction phase are provided in Table 3.1.

<table>
<thead>
<tr>
<th>Activity</th>
<th>CSO site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of construction period</td>
<td>2 - 4 years</td>
</tr>
<tr>
<td>Likely working hours, ie, (night/day/weekend)</td>
<td>12 hrs from 7am to 7pm</td>
</tr>
<tr>
<td>Working days</td>
<td>Mon to Sat</td>
</tr>
<tr>
<td>Primary means of transporting excavated material away from site</td>
<td>Road</td>
</tr>
<tr>
<td>Primary means of transporting materials to site</td>
<td>Road</td>
</tr>
</tbody>
</table>

4 Proposed use of site – operational phase

4.1 Introduction

4.1.1 The indicative operational phase layout for the CSO site is located in Appendix 8 – Operational phase layout, and is based on a preliminary assessment.

4.1.2 The generic elevations of structures shown on the operational phase layout are located in Appendix 8 and provide an illustration of typical examples of the permanent structures which are applicable to CSO sites.
4.1.3 The underground infrastructure at this site would likely comprise an interception chamber, double flap valve chamber and a drop shaft with access openings.

4.1.4 The above-ground infrastructure at this site would likely comprise a ventilation column and electrical control kiosk that would likely be located within the adjacent pumping station.

4.1.5 The top structures are envisaged to be finished at a minimum level of 104.5m tunnel datum (TD) (4.5mAOD), and since the ground level mean level at this site is 105.5mTD (5.5mAOD), the top structures would be flush with the current ground level. The top structure is to provide access and egress into the main shaft and flap valve chamber.

4.1.6 A hardstanding would be provided to the top structures. The site would not be fenced.

4.1.7 Preliminary data associated with the operational phase are provided in Table 4.1.

Table 4.1 Operational phase data

| Level of inspections and maintenance and likely working hours, ie, (night/day/weekend) – frequency of visits | One daytime visit every six months for electrical/instrument inspection. An additional one-week maintenance period for tunnel/shaft inspection required per ten years that could be night/day/weekend working. |
| No. of traffic movements | One van visit every six months. An additional one-week period of two to ten movements per day (estimated several vans and two cranes) every ten years. |

4.2 Restoration and after-use

4.2.1 The portion of the site not occupied by the permanent works would be restored to its original condition on completion of the construction works. If any buildings were demolished, these would not be reinstated unless required.

5 Engineering assessment

5.1 Access

5.1.1 This section should be read in conjunction with Section 7.2.

Road

5.1.2 Road access would be directly off Lots Road, either side of Thames Water’s Lots Road Pumping Station. Operational access would need to be maintained for Thames Water at all times. It would be necessary to remove at least the eastern part of the waste storage structure to allow all construction plant safe access into the site.
5.1.3 There would be no rail network local to this site. However, rail access is not considered to be a significant factor for CSO sites.

5.1.4 River access and jetty/wharf facilities are not a requirement for CSO sites. However, as the site is on a ‘safeguarded’ wharf with 40m river frontage and a 24m-long jetty, there may be feasible opportunities to use barge transport.

5.2 **Construction works considerations**

5.2.1 The construction of the interception chambers and drops shafts would require the removal of at least the eastern section of the existing waste transfer building and the weighbridge. The building is a steel frame with steel roofing set on piled foundations so it may be possible to dismantle it in sections and store for reinstatement on completion of the works. For the most efficient use of the site for the construction works, it may be necessary to remove the whole building for the duration of the works.

5.2.2 Data available on third-party assets and significant utilities show that the main items of concern in this area are the warehouse and five-story building adjacent to the site, the Counters Creek Sewer Outfall and the existing jetty. The existing jetty is part of the protected wharf and may need to be removed during construction and then reinstated. Construction methods would be adopted, as appropriate, to mitigate potential settlement of these assets.

5.2.3 The RBKC waste transfer operation would need to be relocated as well as the depot stores, including the storage of 400 tonnes of road salt.

5.2.4 It is likely that the proposed works can be constructed within the overall construction programme.

5.2.5 The interception chamber and connection culvert to the drop shaft would both be within the site and therefore require no additional consideration.

5.3 **Permanent works considerations**

5.3.1 The top structures to the drop shaft and flap valve chamber would be flush with finished ground level.

5.3.2 Thames Water’s operations would require crane access to the interception chamber and the drop shaft access covers, and Thames Water would need to consult with RBKC to agree the access arrangements in relation to RBKC’s future operational use of the site.

5.4 **Health and safety**

5.4.1 Vehicular access to and from the site will via Lots Road and, given the potential number of construction vehicles, there would be a significant risk of conflict with local traffic and potentially any construction traffic associated with the Lots Road Power Station redevelopment next door.
5.4.2 There are no other unusual health and safety issues with this site.

6 Planning assessment

6.1 Introduction

6.1.1 The planning assessment builds on the advantages and disadvantages reported in Table 2.3 and covers the following areas:

- Planning applications and permissions
- Planning context
- Planning comments.

6.2 Planning applications and permissions

6.2.1 An initial desktop search of the Royal Borough of Kensington and Chelsea online planning applications database did not identify any planning applications submitted within the last five years applicable to the site.

6.2.2 The site adjacent to the southwest, Lots Road Power Station, is subject to a full planning permission granted in 2006 on appeal, reference APP/K5600/A/04/1146268, having been refused by the LPA, reference PP/02/01324. It comprises the conversion of the power station building and new multi-storey buildings with basements on surrounding land to provide a mix of residential, retail, office, business and restaurant uses. One of these is to be a 30-storey residential, incorporating commercial and residential uses. The site will be landscaped to the river’s edge and include habitat creation, landscaping and three pedestrian bridges at Chelsea Creek. One of the multi-storey blocks will be adjacent to the site boundary, and there will be Thames Path provision along the river’s edge to meet the site boundary.

6.2.3 The permission was subject to an S106 that is understood to include extensive highways and other transport improvements in the local area. The developer, Hutchison Whampoa, has written in response to the phase one consultation and has also stated that it will be commencing on site in 2011. Its works will take some years to complete, and traffic generated during its construction and operation should be factored into any proposals for construction at C10XB.

6.3 Planning context

6.3.1 The current planning policy context for the site is provided from the Core Strategy for the Royal Borough of Kensington and Chelsea with a focus on North Kensington Development Plan Document (DPD), adopted 8 December 2010, and the saved policies from the Royal Borough of Kensington and Chelsea Unitary Development Plan, adopted 2002. Those that remain have been saved by a direction in 2007 and have not been cancelled upon the adoption of the Core Strategy DPD. Several planning designations and policies from the development plan are applicable to the site and are detailed below.
Regional policy

6.3.2 The London Plan (Policy 4C.9) and draft replacement London Plan (Policy 7.26) supports the protection of safeguarded wharves for waterborne freight transport. The adopted London Plan encourages appropriate temporary uses of vacant safeguarded wharves, which should not preclude the wharf being reused for cargo-handling uses. The draft replacement London Plan states that development close to navigable waterways should maximise water transport for bulk materials, particularly during demolition and construction phases.

6.3.3 The London Plan (policies 4a.23 to 25) requires: “If, for any reason, an existing waste management site is lost to non-waste use, an additional compensatory site provision will be required that normally meets the maximum throughput that the site could have achieved”.

Adopted Core Strategy

6.3.4 Policy CP18, Lots Road/World's End – this site is entirely within this area. The policy aims to preserve and enhance the character of the area through better local shopping facilities, social and community uses, small cultural and creative uses and improvements to connectivity and integration.

6.3.5 Policy CL2, New Buildings, Extensions and Modifications to Existing Buildings – the site will involve some or all of these works. The policy seeks the highest architectural and urban design quality for such works. Opportunities should be taken to improve the quality and character of buildings and the area, and the way they function. They will require architectural design to be functionally robust, attractive, locally distinctive, sustainable, inclusive, secure, and of a style appropriate to the context, use and townscape. They will offer flexibility in terms of the redevelopment of ‘eyesores’.

6.3.6 Policy CL3, Historic Environment, is likely to apply. The Thames Conservation Area boundary follows the river frontage, then goes inland near the site (through Chelsea Wharf); while to the other side of the site, the (non-listed) Lots Road Power Station and the listed Pumping Station may be considered to possess townscape value. The council will seek development to preserve and take opportunities to enhance the character or appearance of such areas.

6.3.7 Policy CL4, Historic Assets, is likely to apply as the works are within the setting of the adjacent listed pumping station. The site is not in an archaeological priority area and was comprehensively rebuilt in the 1990s. The policy requires that development preserves or enhances the special architectural or historic interest of listed buildings and their settings, and the conservation and protection of sites of archaeological interest.

6.3.8 Policy CL5, Amenity, is likely to apply as the site is near residential properties. The council will require new buildings to achieve high standards of amenity, both in terms of daylight and sunlight, and reasonable visual privacy. It will resist development that leads to harmful
increases to sense of enclosure, traffic volume, parking, noise, odours or vibration, or local microclimatic effects.

6.3.9 **Policy CT2, Improving alternatives to car use**, is concerned with the operational traffic impacts of development and improving accessibility across the range of non-car modes. In particular, it requires transport assessments and travel plans for new development, and requires new development adjacent to the River Thames to take full advantage of and improve opportunities for public transport and freight on the water, access to the water for recreation and walking and cycling alongside it.

6.3.10 **Policy CE2, Flooding**, seeks to implement the relevant provisions of national policy such as the sequential and exceptions test approaches, and seeks to address the issue of local sewer flooding. It incorporates the borough’s specific policy on the Thames Tunnel project, requiring the works to preserve the relevant conservation areas, listed buildings and their settings, and parks and gardens of special historic interest, not impact upon amenity, and not compromise the safeguarded Cremorne Wharf.

6.3.11 **Policy CE3, Waste**, requires the council to meet the waste apportionment figure and manage waste in accordance with the waste hierarchy, as set out in the *London Plan*. It sets out how this will be delivered through a specific waste development plan document, and notes that it will safeguard existing waste management sites along with Cremorne Wharf, maximising its use for waste management, water transport and cargo-handling purposes.

**Saved UDP**

6.3.12 **Policy CD1, Areas of Metropolitan Importance** – this site is entirely within the Thames Policy Area, although is likely to be set back from the river’s edge. This policy aims to protect and enhance views and vistas along the riverside, including river views of Chelsea Embankment, the setting of Chelsea Old Church and views from the Thames bridges.

6.3.13 **Policy CD26** seeks to encourage the improvement of land which is environmentally poor and buildings in poor condition by investment and refurbishment or new development.

6.3.14 **Policy TR44** states that the council will normally resist development which would result in the net loss of on-street residents’ parking. This is likely to occur during construction although not in permanent form.

**6.4 Planning comments**

6.4.1 There are a number of planning designations and policies that are applicable to the site. These designations and policies have been identified and described in Section 6.3 and, of these, those relating to the safeguarding of the waste and wharf facilities, transport and residential amenity are of most relevance to the proposed development.

6.4.2 It is considered that the siting within the existing waste management site, and the modest size and appearance of the permanent above-ground works, will prevent unacceptable impacts on river views, conservation area
and townscape character, and listed buildings. It is likely, therefore, that no conflicts with Core Strategy policies CP18, CL2, CL3, CL4, CE2 and saved UDP Policy CD1 will arise. It may be possible to demonstrate that the proposal supports saved UDP Policy CD26 – The improvement of poor quality land.

6.4.3 In relation to flooding, the site is likely to be in accordance with Core Strategy Policy CE2.

6.4.4 In relation to amenity, there are a number of residential properties within close proximity of the site, including future accommodation at the Lots Road Power Station development. The site is fairly well contained and it should be feasible to provide the necessary mitigation against potential construction noise and dust impacts from the site, to accord with Core Strategy policies CL5 and CE2.

6.4.5 It may be noted that a strong precedent exists for heavy goods vehicle access to this site. The current waste facility was granted planning permission in 1992 (ref TP/92/0929) which set a limit of 150 movements of HGVs on weekdays, excluding bank holidays, between 7am and 5pm. Car movements (but not HGVs) are permitted on Saturdays between 7am and noon. A limit of 85,000 tons of waste per year also applies. In 2000, the operator SITA for the Western Riverside Waste Authority made an application to alter these limits (ref PP/00/00110) but was withdrawn following neighbour objections. Waste related vehicle movements would not occur in tandem because the majority of the site will be used for construction works, so these may be treated as upper limitations for construction traffic for this site.

6.4.6 In relation to transport, there may be potential for cumulative impacts due to the adjacent Lots Road Power Station development. Collaboration to manage construction phase traffic impacts and consider mitigation, for example, in relation to the phasing of highways, should mitigate this. Temporary loss of residents parking may result during construction, although no permanent loss should result, so a partial conflict with saved UDP Policy TR44 could arise. It is unclear whether improved public access to the riverside in line with Core Strategy Policy CT1 can be realised while maintaining the safeguarded wharf function.

6.4.7 In relation to the safeguarded waste use and safeguarded wharf facilities, our consultation feedback at phase one from the GLA stated that TW should ensure that there are suitable alternative operating arrangements for the waste transfer station. RBKC took the view that if the Mayor of London could be persuaded, it would consider the use of the waste transfer station as a construction site, subject to an alternative facility/compensation being provided. In subsequent discussions, the GLA has stated it was its understanding that the site is only used to a limited extent for waste, notably for parking vehicles. If these uses can be reprovided elsewhere then there is not likely to be any difficulty, but we will take our lead from the RBKC. Therefore, much will depend on the detailed configuration of the site and the ability to relocate RBKC services to another site.
6.4.8 The works here should not cause a permanent impact, providing that undue limitations on vehicle loadings, drainage, etc, do not result. It may be feasible to make some use of the wharf for construction materials, in line with Core Strategy policies CT1 and CE3, without significant alteration works.

7 Environmental appraisal

7.1 Introduction
7.1.1 The following sections summarise specialist assessments which are provided in Appendix 9 – Environmental appraisal tables.

7.2 Transport
7.2.1 The site is suitable as a CSO site, utilising existing access and egress points currently used for the recycling centre on Lots Road. Articulated vehicles were noted to have difficulty turning right out of the site. The permanent site access is also taken through the recycling centre access. Potential road and rail access routes are suitable for HGVs, with few notable constraints. Several on-street parking bays along Lots Road would require removal to enable adequate visibility from the construction site egress and to ensure the permanent access is not obstructed. Alternative parking bays are available nearby.

7.2.2 Rail use is unlikely to be required as CSO sites produce small quantities of excavated material. River access is not essential for a CSO site as excavated material is to be transported away by road to a main shaft site.

7.2.3 There is low potential for the workforce to utilise public transport to access the site. There is limited parking available on site for the workforce and on-street parking within close proximity of the site is unsuitable as it is restricted to a maximum stay of four hours.

7.3 Archaeology
7.3.1 Based on current information, this site is less suitable as two archaeological receptors of medium value are recorded within the site. With the currently available information, it is possible that archaeological receptors of high or medium value may be present within this site. Waterlogged material may reasonably be anticipated with the construction of the sewer outfall. Archaeological risk in this location should not be discounted, because a foreshore survey and excavation north of the site in an identical setting discovered an early medieval fish trap and the remains of a Neolithic forest.

7.4 Built heritage and townscape
7.4.1 From a built heritage perspective, the site is considered less suitable due to the potential for the construction and operation of the development to cause a direct impact on the Thames Conservation Area, and to cause an indirect impact on a further two conservation areas (the Sands End Conservation Area and the Battersea Park Conservation Area) and the
listed pumping station, which lies adjacent to the site. Mitigation in the form of a high-quality and sensitive scheme design, together with possible screening, would be required to reduce adverse impacts. The impact is reduced by the existing industrial character of the site.

7.4.2 From a townscape perspective, the site is considered suitable as a CSO site. Although there is the potential for adverse impacts on the character of the river frontage, existing views are industrial in nature and the impact could be minimised with appropriate mitigation. This could include high-quality design and/or screening, and adequate new planting to protect visual amenity.

7.5 **Water resources – hydrogeology and surface water**

7.5.1 In terms of hydrogeology, this site is considered to be less suitable because the CSO drop shaft is to be constructed in Lambeth Group and London Clay contact, which may be in hydraulic continuity with the principal Chalk aquifer. The site also lies within the total capture zone of one licensed abstraction. The Chalk piezometric head is likely to be approximately 8m above the base of construction and should be taken into account in the engineering design. Dewatering may be necessary. The superficial deposits are river terrace deposits, which are classified as a secondary aquifer at the shaft site. There is likely to be a limited impact on flow in the shallow aquifer due to sheet piling.

7.5.2 In terms of surface water resources, this site is considered to be suitable as a CSO site, with the implementation of mitigation measures to prevent pollution to the River Thames.

7.6 **Ecology**

7.6.1 This site is considered suitable as a CSO due to the absence of need for any new ‘in river’ works during construction or operation and the lack of terrestrial ecology opportunities on the site.

7.7 **Flood risk**

7.7.1 This site is suitable for use as a CSO site because sewage transmission infrastructure is considered to be water compatible and hence suitable in any flood zone, according to Table D.2 of PPS25. Mitigation can be provided to manage residual risk to the site and space is available on site for surface water attenuation.

7.8 **Air quality**

7.8.1 This site is considered to be less suitable for use as a CSO site. There are residential properties in close proximity to the site, therefore there is potential for fugitive emissions of dust during construction to have a perceptible impact at these properties. These impacts can be minimised with standard dust control measures. There is potential for HGV movements on the local road network to cause localised air quality impacts in areas of already poor air quality. This can be somewhat mitigated by minimising the movement of HGVs during peak hours.
7.9 **Noise**

7.9.1 The site is less suitable as a CSO site due to the proximity of the site to Station House and Chelsea Wharf to the north of the site, which contains a large number of sensitive properties (residential and offices). Any shielding afforded by the site perimeter barriers would be largely ineffectual due to the height of these receptors. In addition, the number of vehicles associated with the construction phase and the proposed access route along Lots Road is likely to cause an adverse noise impact as HGVs access and egress the site.

7.10 **Land quality**

7.10.1 The site is less suitable as a CSO site based on the medium potential for contamination of the site to have occurred, specifically from the rubber works, oil tank storage, recycling centre and wharf operations on site and the various industrial activities in the vicinity of the site.

7.10.2 This potentially poses a risk to construction workers and adjacent human receptors through direct contact and inhalation exposure pathways. Additionally, the potential exists for contaminants to be drawn to the deeper aquifer if deep drilling/construction is undertaken on the site, and for migration to surface water receptors to occur through groundwater.

8 **Socio-economic and community assessment**

8.1 **Introduction**

8.1.1 The socio-economic and community assessment builds on the advantages and disadvantages reported in Table 2.3 and covers the following areas:

- Socio-economic profile
- Socio-economic and community issues and impacts.

8.2 **Socio-economic profile**

8.2.1 The site is within the Cremorne ward of the Royal Borough of Kensington and Chelsea. Statistics from the Office of National Statistics (ONS) 2001 Census data show the following indicators for the ward, in comparison to the rest of the borough, London and England as a whole:

- Higher than national and London average for unemployment
- The area has a mixed population, with a range of ages and ethnic backgrounds.

8.2.2 In addition, site visits suggest that Cremorne Gardens appear to be mostly used by local residents. The gardens were not busy when the site was visited in the morning and afternoon, and the park users were mostly British and elderly.

8.3 **Issues and impacts**

8.3.1 The proposed location of the engineering works to intercept the CSO is on the site of a vacant waste transfer/recycling centre, which is currently
being used by the local authority for storage of various materials. From a community perspective, the greatest impact from the use of the site appears likely to be on the residential properties in the vicinity.

8.3.2 Use of the site would require the local authority to find an alternative location to store the rock salt, cleaning equipment and theatre props currently stored on site, but this is unlikely to affect the local community in any way. There is a property adjacent the site to the northwest, which appears to contain four residential flats. There is potential that these properties may experience some disruption during the construction period. There are also a number of offices and workshops located adjacent to the northeast which could affect the local economy. Beyond the building housing these offices and workshops is a newer, five-storey block of residential properties, Chelsea Wharf, which is also likely to face some disruption. While the lower section of the residential block will be partially screened from any works by the offices and workshops, the higher floors may overlook any works.

8.3.3 There are further residential properties on the side of Lots Road opposite the proposed worksite. Those most likely to be affected are the properties located opposite the proposed access points to the site. Other properties in the vicinity appear partially screened from the works by the existing pumping station, but appear likely to still be affected by construction traffic. Traffic levels for the proposed construction activities are, however, below the level currently permitted for the waste transfer/recycling centre.

8.3.4 On the opposite side of Chelsea Wharf from the proposed location of the engineering works is Cremorne Gardens. However, this is likely to be screened from the works by the residential development so appears unlikely to be affected.

8.3.5 The site visits identified only low level background noise and overall, the site and surrounding area was identified as a generally quiet environment. However, it is worth noting that the vacant site to the south of the waste recycling centre has planning permission for a large, mixed-use development, so it appears likely that there will be some local disruption during the construction phase of this development.

8.3.6 Proposals for the ongoing operation of the site following construction appear unlikely to impact on the local community.

9 Property assessment

9.1 Introduction

9.1.1 This report builds on the advantages and disadvantages in Table 2.3 and the assessment provides more up-to-date information.

9.1.2 This site comprises an unoccupied waste management facility and part storage facility used by the Royal Borough of Kensington and Chelsea. The site is owned by the Royal Borough of Kensington and Chelsea.
9.2 Crown land and special land comments

9.2.1 The site is owned by the Royal Borough of Kensington and Chelsea. While it may be technically possible to acquire this property using compulsory purchase powers, an attempt to do this without the co-operation of the borough will create risk.

9.2.2 Discussions with the borough have indicated that it will be willing to maintain open dialogue with Thames Water to ensure surrounding land uses are protected, in particular nearby gardens. Accordingly, it may be possible to use the site for the works and discussions should continue with the owners to establish if an acquisition can be agreed.

9.3 Land to be acquired

9.3.1 The compensation assessment assumes that the majority of the worksite would be acquired temporarily, via the acquisition of new rights for the period of the works stated in the engineering section above.

9.3.2 Two smaller areas within the worksite would need to be acquired permanently for operational purposes. These areas are located in the north and south part of the worksite. Subsoil for a connection tunnel, which extends through the centre of the site, is also required.

9.3.3 A right of way over the council-owned land to enable access to the operational land will also need to be acquired.

9.4 Property valuation comments

9.4.1 Compensation for the acquisition of new rights is normally based on the diminution in value to the land caused by the acquisition. Compensation for the permanent acquisition of land is normally based on market value, but can be based on equivalent reinstatement for the acquisition of unusual types of property.

9.4.2 If compensation is assessed on a diminution in value basis for new rights (temporary occupation during works, access rights during works, access rights for operational purposes) and on a market value basis for the permanent acquisition, the costs are likely to be relatively low and therefore acceptable.

9.4.3 The London Plan seeks to protect existing waste facilities and the Local Development Framework identifies Cremorne Wharf as a safeguarded waste management site. Accordingly, the compensation estimate includes the cost of replacing the existing buildings following the Thames Tunnel project work phase.

9.4.4 The London Plan requires that if a waste site is lost to a non-waste use, this will need to be replaced. Therefore, while the site is currently unused for waste related purposes, there is some risk that a replacement site may need to be provided. A site suitable for waste uses within the borough will be very difficult to find, if at all.

9.4.5 While the site is a protected wharf and protected waste management site, there is some risk that, in the future, the site may become suitable for redevelopment in line with surrounding development, namely residential or
mixed-use development. This would result in the acquisition costs being significantly higher.

9.4.6 The site does not abut Lots Road. It is understood that the site has the benefit of a right of way over the adjacent Thames Water land.

9.5 Disturbance compensation comments
9.5.1 The compensation estimate assumes that the recycling centre remains unoccupied and the acquisition will result in the relocation of the storage uses during the works phase.
9.5.2 If the recycling centre becomes occupied, disturbance compensation costs are likely to be much higher, although remain acceptable.

9.6 Discretionary purchase costs comments
9.6.1 Works on the site will be limited to 12-hour working, Monday to Saturday. Therefore, it is unlikely that there will be any significant discretionary purchase costs.
9.6.2 However, the worksite will abut the existing Chelsea Wharf development, which may give rise to some discretionary purchase cost.

9.7 Offsite statutory compensation comments
9.7.1 There should be limited potential for offsite statutory compensation under S.10 of the Compulsory Purchase Act 1965, as there is unlikely to be any physical interference with public or private property rights.
9.7.2 There should also be limited potential for claims under the Land Compensation Act 1973 Part 1, as the completed works are unlikely to result in diminution in value to property.

9.8 Site acquisition cost assessment
9.8.1 If the safeguarded wharf status remains and planning policy continues to require that the site be retained for waste purposes, a temporary acquisition may be possible provided Thames Water replaces the existing buildings following the works. If this is possible then acquisition costs will be acceptable.
9.8.2 There is a risk that should the waste facility remain vacant and the wharf use remain dormant, the future for the site may be for higher value uses resulting in significantly higher acquisition costs. However, this is contrary to exiting policy and is unlikely in the near future, albeit possible in the more distant future.

10 Site conclusions by discipline
10.1 Introduction
10.1.1 The conclusions presented in this section are drawn from each discipline’s assessment, and are designed to inform the workshop where a final conclusion on whether the site moves forward as one of the preferred sites or not.
10.2 Engineering
10.2.1 This site is suitable as a CSO site, because the waste transfer station site has enough area available and is reasonably unrestricted in shape. It would likely be in close proximity to the main tunnel, expected to be below the River Thames.

10.3 Planning
10.3.1 On balance, the use of the site appears suitable for use as a CSO site. There are a number of planning designations and policies that are applicable to the site. The keys ones relate to the safeguarding of the waste and wharf facilities; transport and residential amenity are of most relevance to the proposed development. Residential amenity could be affected due to the proximity of some existing and future properties, but the site is fairly well enclosed and mitigation should be feasible. Effects on townscape character and heritage assets should be minimal, owing to the contained location and small above-ground structures. Transport impacts during construction would require mitigation, including collaboration with the developers of the adjacent Lots Road Power Station site. There is substantial precedent for HGV access to the site, while barge access may also be feasible.

10.3.2 The GLA has stated it was its understanding that the site is only used to a limited extent for waste, notably for parking vehicles. If these uses can be reprovided elsewhere, there is not likely to be any difficulty, but further discussions are needed with RBKC and much will depend on the detailed configuration of the site and the ability to relocate RBKC services to another site. The works here should not cause a permanent impact providing that undue limitations on vehicle loadings, drainage, etc, do not result. It may be feasible to make some use of the wharf for construction materials, in line with Core Strategy policies CT1 and CE3, without significant alteration works.

10.4 Environment
10.4.1 This site is considered to be less suitable for use as a CSO site.
10.4.2 Based on current information, the site is suitable for a CSO site from the perspective of transport, townscape, ecology, water resources (surface water) and flood risk.
10.4.3 The site is considered less suitable for a CSO site from the perspective of archaeology, built heritage, water resources (hydrogeology), air quality, noise and land quality.
10.4.4 Overall, the site is considered less suitable for use as a CSO site and further investigation will be required as to whether archaeology, built heritage, water resources (hydrogeology), air quality, noise and land quality impacts could all be adequately mitigated. Likely mitigation considerations will include the following:

- Archaeology – further investigations to determine the likely presence of archaeological receptors of high or medium value, and to identify appropriate mitigation.
- Built heritage – high quality and sensitive scheme design with possible screening to minimise impacts on built heritage receptors.
- Water resources (hydrogeology) – further investigation to determine whether or not the CSO drop shaft could be constructed within the Lambeth Group and London Clay contact which may be in hydraulic continuity with the principal Chalk aquifer, given that the site is within the total capture zone of one licensed abstraction.
- Air quality – measures to ensure dust is adequately mitigated for the closest receptors.
- Noise – standard noise barriers may not be effective, and other techniques may be required to reduce construction noise to acceptable levels.
- Land quality – any required remediation of contamination (at this moderate risk site) and/or measures to ensure no mobilisation of contaminants retained in situ.

10.5 Socio-economic and community

10.5.1 The use of the site appears suitable for use as a CSO site. From a community impacts perspective, a number of offices and workshops appear likely to be affected, which could impact on the local economy. Also, a small number of residential properties adjacent to the site may be affected, so they are likely to need some mitigation. There are also further residential properties located to the northeast of the site and along Lots Road, but these appear likely to be partially screened from any construction works by existing buildings and at a sufficient distance.

10.6 Property

10.6.1 The advantages of the site are as follows.

Advantages:
- The site is partly vacant and therefore disturbance costs are likely to be acceptable.
- Acquisition costs are likely to be acceptable due to the safeguarded wharf and waste facility classification of the site.
- A compulsory purchase of the site is technically possible.
Disadvantages:

- There are acquisition risks if the local authority opposes its use as a CSO site.
- Acquisition costs may increase significantly if the existing barriers to redevelopment are lifted.

10.6.2 Overall, from a property perspective, the site has been assessed as **suitable** for a CSO site.
Appendices
Appendix 1 – Sources of information

**Engineering**
- Traffic Management and Access Roads/Rail – URS Scott Wilson
- Access River – BMT Isis
- Services (Utilities) and Third Party Assets – Thames Tunnel and utility companies
- Geology – British Geological Society and Thames Tunnel
- Construction and Operational Layout Template – Thames Tunnel
- Site selection background technical paper – Thames Tunnel

**Planning**
- Royal Borough of Kensington and Chelsea online and Town Hall planning applications archives
- Core Strategy DPD adopted December 2010 policies, and saved 2007 policies in the *Kensington and Chelsea Unitary Development Plan*, adopted in 2002

**Environment**

**Transport**
- Map of Transport for London Road Network (TLRN) – www.tfl.gov.uk
- Bus Route Maps: North-east, north-west, south-west, south-east – www.tfl.gov.uk
- Crossrail Plans – www.crossrail.co.uk/crossrail-bill-documents
- PTAL scores – Obtained from Table 2.3 information
- Thames Path map – www.walklondon.org.uk
- Capital Ring – www.walklondon.org.uk
- Cycle Routes – www.sustrans.org.uk and Local Cycling Guides 1-14
- Design Manual for Roads and Bridge TD 42/95, Highways Agency

**Archaeology**
- Historic Environment data from Greater London Archaeology Advisory Service (GLAAS)
- National Monuments Record – for some additional information regarding registered historic parks and gardens
- London Archaeological Archive and Research Centre (LAARC)
- Local authority websites
• Bing maps

**Built heritage and townscape**
• Local authority lists of Locally Listed Buildings
• National Monuments Record – for some additional information regarding registered historic parks and gardens
• Unitary development plan and DPDs
• Local authority websites
• Bing maps

**Water resources – hydrogeology and surface water**
• Local authority details of unlicensed abstractors
• Environment Agency abstraction licence details
• Environment Agency groundwater levels and contour maps (2009-11)
• Environment Agency water quality (surface water and groundwater)
• Environment Agency Groundwater Source Protection Zones
• Environment Agency Flood Map – www.environment-agency.gov.uk
• Envirocheck
• British Geological Survey (BGS) logs
• BGS 1:50,000 Geological Sheets – Solid and Drift Editions (England and Wales)
• BGS Geology of London – Special Memoir for 1:50,000 Geological sheets 256 (North London), 257 (Romford), 270 (South London) and 271 (Dartford) (England and Wales)
• Crossrail (2005) – Assessment of Water Impacts Technical Report: Appendix C – Baseline Data. Figure C.4: Extent of Saline Intrusion based on 177 mg/l *5mmol/l Isochlor

**Ecology**
• Thames Estuary Partnership (2002) Tidal Thames Habitat Action Plan
• London Biodiversity Action Plan – www.lbp.org.uk
• Multi-Agency Geographic Information for the Countryside (MAGIC) – www.magic.gov.uk - statutory designated sites
• London Wildweb – wildweb.london.gov.uk - non-statutory site of importance for nature conservation
• National Biodiversity Network – http://searchnbn.net - distribution of protected species
• Google Maps – aerial views of habitat features
• BAP habitats – www.natureonthemap.org.uk
• Priority habitats and species on national and local scales – www.ukbap.org.uk

**Flood risk**
• Environment Agency Flood Map – www.environment-agency.gov.uk
• Environment Agency National Flood and Coastal Defence Database
• Envirocheck

**Air quality**
• Local authority websites
• London Air Quality Network – www.londonair.org.uk
• Defra UK-AIR, air quality information resource – www.airquality.co.uk
• Defra Air Quality Management Areas – http://aqma.defra.gov.uk
• Defra Local Air Quality Management – http://laqm.defra.gov.uk

**Noise**
• Envirocheck – Identification of receptors
• Promap – Calculation of distances between site and receptors
• Multimap – Aerial photography – www.multimap.co.uk
• Defra noise maps – Identification of existing noise levels

**Land quality**
• Google Maps/Earth
• Site walkover information
• Envirocheck Data Sheets provided as a GIS Database
• British Geological Survey (BGS) logs

**Socio-economic and community**
• Statistics from the Office of National Statistics 2001 Census data
Property

- Multimap
- Valuation Office Agency (VOA) website
- Land Registry information provided by Mouchel
Appendix 2 – Site location plan
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
Appendix 3 – Planning and environment plans
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
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Appendix 4 – Photographs of the site and surroundings
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
Looking southwest towards the site entrance from Ashburnham Road.

Entrance to the site from Lots Road.
Egress from the site from the west of Lots Road Pumping Station.

Lots Road Pumping Station.
View looking towards Cremorne Wharf with Lots Road Power Station to the left hand side of the image.
Appendix 5 – Transport plan
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
Appendix 6 – Services and geology plan
Appendix 7 – Construction phase layout
Appendix 8 – Operational phase layout
1. Access opening to interception chamber is indicative only.
2. Access opening to interception chamber is indicative only.
3. Dimensions given are indicative only.
4. Existing interception chamber to be confirmed.
5. Access opening to interception chamber is indicative only.
6. Permanent access to old site to be in accordance with access to recycling centre.

Dimensions shown are indicative only.

Access opening to interception chamber is indicative only.

Permanent access to old site to be in accordance with access to recycling centre.
VENTILATION COLUMN (CSO)

ELECTRICAL CONTROL Kiosk (CSO)

Diagrammatic Representation of top structure above CSO Shaft

Note:
1. Structure to be protected by removable handrails in the temporary case.
2. Position of covers are variable within 10m from the edge of the structure, and the location is based on site specific requirement.
3. Cladding of ventilation building to suit location and aesthetics.
4. All top structures to have:
   - Access stairs/ladder
   - Temporary or permanent hand railing
5. All dimensions in millimetres unless otherwise stated.
### Appendix 9 – Environmental appraisal tables

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to road network</td>
<td>Site would be accessed from Lots Road, utilising an existing access and egress for the recycling centre in front of the Thames Water Pumping Station. A one-way system through the site would be used by construction vehicles. Articulated vehicles were noted to have difficulty turning right out of the recycling centre. Permanent site access would be taken through the recycling centre. Lots Road is subject to a 30mph speed limit, is street lit and features single yellow lines on both sides between on-street parking bays. It has a carriageway width of 9.8m at the site access which is reduced to an effective width of 7.8m due to on street parking. At the construction site egress, Lots Road has a carriageway width of 7.8m. Visibility splays achievable from the construction egress point are 90m to the east and 20m to the west restricted by on-street parking. Several on-street parking bays require removal to enable adequate visibility to be achieved from the egress to the west and assist HGVs manoeuvring. Visibility appears to be adequate from the permanent access, although several parking bays would require removal</td>
<td>Conclusion: Road access to site likely to be suitable for HGVs, although articulated vehicles were noted to have difficulty turning right out of the recycling centre (construction site egress) onto Lots Road. Permanent access also taken through recycling centre access. Several on-street parking bays along Lots Road would require removal to enable adequate visibility from the construction egress and ensure the permanent access is not obstructed. Route to TLRN (A3220) runs through a residential area. The recycling centre may need to be suspended to enable construction access.</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Transport</td>
<td>to enable access. Access to the A3220 (TLRN strategic highway network) is approximately 200m to the northeast using Lots Road. The route runs through a residential area. A preliminary transport access plan is attached as Appendix 5.</td>
<td></td>
</tr>
<tr>
<td>Access to river</td>
<td>River access not essential for CSO site as excavated material to be transported away by road to main site.</td>
<td>River access not essential as excavated material would be transported away by road to main site.</td>
</tr>
<tr>
<td>Access to rail</td>
<td>Use of rail is unlikely to be required due to the small quantities of excavated material produced by a CSO site. Access to existing railway sidings at Clapham Junction from the TLRN (A3220) onto Kings Road, then Wandsworth Bridge Road, over Wandsworth Bridge onto the gyratory between the A217 and A3205 for the A214. The route then leads on to East Hill, following on to St John’s Hill before turning onto Plough Road for the Clapham Junction, Traincare Depot railway sidings. The route runs through a residential area and several high street areas in addition to passing under a rail bridge and over a rail and water bridge, although neither have any visible restrictions. Distance of 4.5km to rail access point from site.</td>
<td>Use of rail is unlikely to be required due to the small quantities of excavated material produced by a CSO site. Route to possible rail link at Clapham Junction runs through a residential area, several high street areas, under a rail bridge and over a water and rail bridge, with no visible restrictions. Clapham Junction railway sidings at the Traincare Depot accessible using Plough Road.</td>
</tr>
</tbody>
</table>
## Transport

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parking</strong></td>
<td>Some parking could be provided on site for workforce. On-street parking within the vicinity of the site along Lots Road is unsuitable as maximum stay is 4hrs (Mon-Fri 08:30-18:30; Sat 08:30-18:30) at £2.40/hr. Several on-street parking bays along Lots Road would require removal. Alternative bays available along Lots Road.</td>
<td>Some parking available on site. On-street parking along Lots Road unsuitable for workforce as maximum stay is 4hrs. Several on-street parking bays along Lots Road would require removal, however alternative bays available nearby.</td>
</tr>
<tr>
<td><strong>Public transport accessibility</strong></td>
<td>PTAL 1-2 (low), as identified within Table 2.3.</td>
<td>Low possibility of workforce using public transport to access site.</td>
</tr>
<tr>
<td><strong>Traffic management</strong></td>
<td>The site would utilise existing access and egress points onto Lots Road for construction and permanent access/egress. Several on-street parking bays along Lots Road would require removal.</td>
<td>Removal of several on-street parking bays along Lots Road required.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>The site is suitable as a CSO site, utilising existing access and egress points currently used for the recycling centre on Lots Road. Articulated vehicles were noted to have difficulty turning right out of the site. The permanent site access is also taken through the recycling centre access. Potential road and rail access routes are suitable for HGVs, with few notable constraints. Several on-street parking bays along Lots Road would require removal to enable adequate visibility from the construction site egress and to ensure the permanent access is not obstructed. Alternative parking bays are available nearby. Rail use is unlikely to be required as CSO sites produce small quantities of excavated material. River access is not essential for a CSO site as excavated material is to be transported away by road to a main shaft site. There is low potential for the workforce to utilise public transport to access the site. There is limited parking available on site for the workforce and on-street parking within close proximity of the site is unsuitable as it is restricted to a maximum stay of 4hrs.</td>
<td></td>
</tr>
</tbody>
</table>
### Archaeology

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designations, including archaeological priority areas</td>
<td>The site is located within the Kensington Archaeological Priority Area.</td>
</tr>
<tr>
<td>Summary of historical uses</td>
<td>The site occupies an area of Thames foreshore where the 19th century historic maps indicate a number of wharves existed from the late 19th century.</td>
</tr>
<tr>
<td>Potential receptors of very high or high value with the potential to be directly affected</td>
<td>No high value archaeological receptors are recorded within the site boundary. This does not preclude the possibility of unrecorded archaeological receptors of high value being present within the site. The site is located within the Kensington Archaeological Priority Area.</td>
</tr>
<tr>
<td>Potential receptors of medium value with the potential to be directly affected</td>
<td>A timber structure, possibly a post medieval jetty, is recorded within the site. Post medieval river flood defences are also recorded within the site, extending to the east and west. Both of these receptors are likely to be considered of medium value. It is also possible that further unrecorded archaeological receptors of medium value are present within the site.</td>
</tr>
<tr>
<td>Other receptors with the potential to be directly affected</td>
<td>The dewatering of adjacent waterlogged deposits is unlikely to be an issue, considering the location of the site within the Thames.</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------</td>
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</tr>
<tr>
<td>Extent of existing disturbance (if known)</td>
<td>The construction of the Victorian wharves and the existing industrial unit is likely to have adversely impacted any archaeological receptors which may be present in a localised area.</td>
</tr>
</tbody>
</table>
| Potential issues | Detailed design proposals and an outline method statement would be required to enable initial assessment of development impacts, and to inform mitigation proposals. With the currently available information, it is not possible to highlight specific potential issues. | Mitigation methods could include:  
- desk-based assessment  
- production of deposits model  
- archaeological monitoring of geotechnical investigations  
- archaeological evaluation  
- archaeological watching brief  
- archaeological excavation. |
| Summary | Based on current information, this site is less suitable as two archaeological receptors of medium value are recorded within the site. With the currently available information, it is possible that archaeological receptors of high or medium value may be present within this site. Waterlogged material may reasonably be anticipated with the construction of the sewer outfall. Archaeological risk in this location should not be discounted, because a foreshore survey and excavation north of the site in an identical setting discovered an early medieval fish trap and the remains of a Neolithic forest. |
## Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
</table>
| **Designations** including conservation areas, including trees | **Listed buildings**  
LCC Pumping Station 27, grade II: 1m.  
**Locally listed buildings**  
The London Borough of Kensington and Chelsea does not maintain a local list.  
There are no locally listed buildings located within 250m of the site within the London Borough of Hammersmith and Fulham.  
**Conservation areas**  
Thames Conservation Area: 0m  
Sands End Conservation Area: 95m  
Battersea Square Conservation Area: 140m  
**Registered historic parks and gardens**  
There are no registered historic parks and gardens within 250m of the site.  
**Locally listed parks and gardens**  
There are no locally listed parks and gardens with 250m of the site. | In the case of conservation areas and listed buildings, a high-quality scheme design and adequate screening for the development may be required, as discussed below.  
A detailed desk-based assessment in conjunction with archaeology work would be required to further inform the likely impact of the development and to determine more detailed mitigation proposals.  
On the basis of currently available information (April 2011), mitigation would not be applicable in the case of locally listed buildings, registered historic parks and gardens, and locally listed parks and gardens. |
<p>| <strong>Potential receptors of medium to very high importance with the potential to be directly affected</strong> | There is potential for one conservation area (the Thames Conservation Area) to be directly impacted. | Mitigation in the form of a high-quality and sensitive scheme design and/or screening is likely to be required to ensure that the development preserves or enhances the character or appearance of the Thames Conservation Area. |</p>
<table>
<thead>
<tr>
<th>Site considerations</th>
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<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other receptors of lesser importance with the potential to be <em>directly</em> affected</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Potential receptors of medium to very high importance with the potential to be <em>indirectly</em> affected</td>
<td>There is potential for two conservation areas (the Sands End Conservation Area and the Battersea Square Conservation Area) to be indirectly affected by the construction and operation of the development. This is a particularly important consideration as the borough of Kensington and Chelsea seeks to protect views along the riverside and to the opposite bank of the River Thames in addition to their policies regarding conservation areas. There is also potential for the Grade II listed LCC Pumping Station to be indirectly affected due to its proximity to the site.</td>
<td>C10XB shares a visual relationship with the Sands End Conservation Area (located to the west of the site) and the Battersea Square Conservation Area (located to the south of the site on the opposite [southern] bank of the River Thames). Because of the intervisibility between the site and these two designated areas, the development has potential to impact on the setting of and views to and from both conservation areas. Mitigation in the form of a high-quality scheme design and/or screening would be required to reduce any adverse impacts. The pumping station lies adjacent to the site’s northern boundary; therefore, there is potential for its setting to be impacted by the scheme. A high-quality design would need to be considered to reduce any adverse impacts. It is also recommended that hoarding is erected during construction to minimise the potential for accidental damage to the structure.</td>
</tr>
<tr>
<td>Other receptors of lesser importance with the potential to be <em>indirectly</em> affected</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
## Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Sensitive landscape character areas likely to be affected, including trees and TPOs</td>
<td>The site lies in the Thames Policy Area, part of the wider Thames Conservation Area. Sensitive site on the northern foreshore of the River Thames. Used as a recycling centre adjacent to Lots Road Pumping Station. Access to the site is between buildings. River Thames is to the east, vacant site is to the south, mix of high-rise and low-rise residential buildings to the north and west. Residential properties along the south bank of the River Thames. The site has an existing pier. The landscape character of the site is waterside industrial. The presence and operation of machinery, materials stores and buildings would be in keeping with the existing landscape character of the site but will have an impact on the character of the river frontage. In addition, there will be temporary, adverse indirect impacts on neighbouring areas in regard to movement of construction traffic through adjacent residential streets. Permanent elements will be in keeping with the existing industrial character of the site but could, without careful design, have an adverse impact on the character of the River Thames and its foreshore. The pumping station and buildings to the north will limit indirect impacts on residential areas to the north and west.</td>
<td>Introduction of landscape scheme to include appropriate surface treatments and planting to enhance the character of the river frontage. This site is suitable because of its existing industrial character. Although the presence and operation of machinery, materials stores and buildings on site could impact the character of the river frontage, the impact could be minimised with appropriate mitigation.</td>
</tr>
</tbody>
</table>
## Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
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<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential views likely to be affected</td>
<td>Part of Thames Policy Area where views along the River Thames are protected. Open views from the river and from the adjacent vacant plot. Views from surrounding residential properties to the north and west are interrupted by intervening buildings. Views possible from residential properties on the opposite bank of the Thames to the east. During construction, there will be views of cranes above the pumping station from surrounding residences. In addition, the construction traffic will be visible accessing the site through the gap between buildings. The construction activities will also be visible from the river and from properties on the opposite bank. Permanent elements will be visible from the river.</td>
<td>During construction, the use of hoardings and appropriate lighting would help minimise visual impact from the river. Design of the permanent structures to be given careful consideration. Planting along river frontage to screen permanent plant. This site is suitable as the existing views are industrial in nature. Adequate new planting will be important to protect and enhance visual amenity.</td>
</tr>
<tr>
<td>Particular considerations on sites where new permanent structures are required</td>
<td>Permanent structures at C10XB have the potential to have a direct impact on the Thames Conservation Area, as well as an indirect impact on the Sands End Conservation Area and the Battersea Square Conservation Area during construction and operation. There will also be impacts on the adjacent listed pumping station. The appearance of any above-ground structures would need to be carefully considered in the scheme design.</td>
<td>Any permanent structures would need to be of a high-quality design and/or screened in order that any impacts on conservation areas and listed building are mitigated.</td>
</tr>
</tbody>
</table>
## Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential issues</td>
<td>Construction and operation of the development could result in a direct impact on the character of the Thames Conservation Area. There is also the potential for indirect impacts on a further two conservation areas and a listed building.</td>
<td>The scheme design would need to be of a sufficiently high quality and may need to incorporate some screening in order that the potential impact of the development on numerous built heritage receptors is minimised.</td>
</tr>
</tbody>
</table>

### Summary

From a built heritage perspective, the site is considered less suitable due to the potential for the construction and operation of the development to cause a direct impact on the Thames Conservation Area, and to cause an indirect impact on a further two conservation areas (the Sands End Conservation Area and the Battersea Park Conservation Area) and the listed pumping station which lies adjacent to the site. Mitigation in the form of a high-quality and sensitive scheme design, together with possible screening, would be required to reduce adverse impacts. The impact is reduced by the existing industrial character of the site.

From a townscape perspective, the site is considered suitable as a CSO site. Although there is the potential for adverse impacts on the character of the river frontage, existing views are industrial in nature and the impact could be minimised with appropriate mitigation. This could include high-quality design and/or screening, and adequate new planting to protect visual amenity.
### Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
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</tr>
</thead>
</table>
| Hydrogeological conditions (groundwater and surface water) From BGS Geological Model, giving average ground condition profile. Local near surface conditions may vary, particularly within the river. | **Geology (thickness)**  
- Superficial geology and made ground (9m)  
- London Clay (37m)  
- Lambeth Group (20m)  
- Thanet Sand (11m) | The drop shaft would be constructed to an invert level of approximately 45mbgl, therefore the shaft would be founded in the London Clay and Lambeth Group contact. Piezometric head in Chalk is approximately 8m above the base of the construction. |
| Hydrogeology |  
- Piezometric level in Chalk aquifer: ~ -32mAOD (~37mbgl) from EA Jan 08 water level contouring | |
| Groundwater monitoring location |  
- EA hydrometry sites:  
TQ27-284A – approximately 2.54km northeast of the site (water levels to May 2005)  
TQ27-159 – approximately 2.62km southwest of the site (water levels to March 2009) | |
| Watercourses |  
- Adjacent to the River Thames | |
| SPZs and groundwater users | **SPZ**  
- Not located in a source protection zone.  
**EA licensed groundwater abstractions and details**  
- No public water supply  
- Six licensed abstraction borehole within 2km radius | A simple volumetric approach has been used to calculate the total capture zone of the abstraction borehole. A conservative mean annual recharge of 100mm/year was used to calculate a radius for licensed abstraction boreholes as follows:  
1. 137m  
2. 127m  
3. 200m  
4. 425m |
|  | Licence numbers:  
1. 28/39/39/0071 (1 | |
## Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
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</tr>
</thead>
<tbody>
<tr>
<td>borehole)</td>
<td></td>
<td>5. 296m</td>
</tr>
<tr>
<td>2. 28/39/39/0080 (1 borehole)</td>
<td></td>
<td>The shaft is located within the catchment area of abstraction borehole (28/39/39/0157). But this abstraction is from the Chalk aquifer.</td>
</tr>
<tr>
<td>3. 28/39/39/0211 (1 borehole)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. 28/39/39/0157 (1 borehole)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. 28/39/42/0060 (2 boreholes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 1.84km southwest of the site (other side of the River Thames)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. 1.22km northeast of the site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. 1.88km north of the site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. 111m west of the site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. 1.45km east of the site (other side of the River Thames)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Hanson Quarry Prod Europe Ltd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cannons Health and fitness limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The Natural History Museum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Cirdian Limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Wandsworth borough council</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstracted aquifer unit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Chalk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Information pending</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Information pending</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Chalk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Information pending</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Water resources – hydrogeology and surface water

<table>
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<tr>
<th>Site considerations</th>
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</thead>
<tbody>
<tr>
<td>Abstraction purposes:</td>
<td>Abstraction purposes:</td>
<td></td>
</tr>
<tr>
<td>1. Industrial, commercial and public service (mineral products – general use)</td>
<td>1. Industrial, commercial and public service (mineral products – general use)</td>
<td></td>
</tr>
<tr>
<td>2. Industrial, commercial and public service (drinking, cooking, sanitary, washing)</td>
<td>2. Industrial, commercial and public service (drinking, cooking, sanitary, washing)</td>
<td></td>
</tr>
<tr>
<td>3. Industrial, commercial and public service (drinking, cooking, sanitary, washing)</td>
<td>3. Industrial, commercial and public service (drinking, cooking, sanitary, washing)</td>
<td></td>
</tr>
<tr>
<td>4. Production of energy (electricity – boiler feed)</td>
<td>4. Production of energy (electricity – boiler feed)</td>
<td></td>
</tr>
<tr>
<td>5. Industrial, commercial and public service (municipal grounds – spray irrigation and make up or top up water)</td>
<td>5. Industrial, commercial and public service (municipal grounds – spray irrigation and make up or top up water)</td>
<td></td>
</tr>
</tbody>
</table>

Abstraction quantity (annual):

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Quantity (annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>23,515m³</td>
</tr>
<tr>
<td>2.</td>
<td>20,313m³</td>
</tr>
<tr>
<td>3.</td>
<td>50,505m³</td>
</tr>
<tr>
<td>4.</td>
<td>227,300m³</td>
</tr>
<tr>
<td>5.</td>
<td>110,000m³</td>
</tr>
</tbody>
</table>

Local authorities (LA) unlicensed groundwater abstractions and details

- One abstraction borehole within 1km radius inside Wandsworth council boundary

Owner:
Ransome's Dock Restaurant

Abstracted aquifer unit:
Likely Chalk

Abstraction quantity (annual):
No information
## Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
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<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borehole locations and depths</td>
<td>There are 14 historical records of water wells: Eleven deep wells and three shallow wells within 1km radius. Depth range: 121.9m – 152.7m Depth range: 8.2m – 14.6m</td>
<td>Work needs to be undertaken in consideration of Pollution Prevention Guidelines – PPG1, PPG5 and PPS23.</td>
</tr>
<tr>
<td>Potential impacts on surface water features</td>
<td>There is an indirect pathway to the River Thames via drainage.</td>
<td>See below (likely types of mitigation measures that would be required)</td>
</tr>
<tr>
<td>Potential impacts on groundwater (resources and quality)</td>
<td>Impact on groundwater at depth is likely since the shaft is to be constructed in the London Clay and Lambeth Group contact which may be in hydraulic continuity with the Chalk principal aquifer and need to be dewatered. At shallow depth, the shaft is located in river terrace deposits, which is classified as a secondary aquifer. Limited impact on shallow aquifer if water is excluded from the excavation by sheet piling.</td>
<td>See below (likely types of mitigation measures that would be required)</td>
</tr>
<tr>
<td>Likely types of mitigation measures that would be required</td>
<td>No mitigation required if groundwater is not impacted.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Potential issues</td>
<td>The shaft is to be excavated in Lambeth Group and London Clay contact, which may be in hydraulic continuity with the principal chalk aquifer and dewatering may be needed. Limited impact on flow in shallow aquifer.</td>
<td>Confined head in Chalk to be considered as part of geotechnical design. Impact on and mitigation for shallow aquifer will depend on construction design.</td>
</tr>
</tbody>
</table>
### Water resources – hydrogeology and surface water

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<tr>
<th>Site considerations</th>
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</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
<td>In terms of hydrogeology, this site is considered to be less suitable because the CSO drop shaft is to be constructed in Lambeth Group and London Clay contact, which may be in hydraulic continuity with the principal Chalk aquifer. The site also lies within the total capture zone of one licensed abstraction. The Chalk piezometric head is likely to be approximately 8m above the base of construction and should be taken into account in the engineering design. Dewatering may be necessary. The superficial deposits are river terrace deposits, which are classified as a secondary aquifer at the shaft site. There is likely to be limited impact on flow the in shallow aquifer due to sheet piling. In terms of surface water resources, this site is considered to be suitable as a CSO site, with the implementation of mitigation measures to prevent pollution to the River Thames.</td>
<td></td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Statutory designations</td>
<td>Battersea Park Nature Areas LNR is 2km from site</td>
<td>None required</td>
</tr>
<tr>
<td>Non-statutory designated wildlife sites</td>
<td>Site is adjacent to River Thames and Tidal Tributaries SMI</td>
<td>It is assumed that the pier is the existing feature and no ‘in river’ works would therefore be required.</td>
</tr>
<tr>
<td>BAP priority habitats</td>
<td>Foreshore consists of BAP habitat ‘mudflats’. The Thames Tideway is a London BAP habitat.</td>
<td>It is assumed that the pier is the existing feature and no ‘in river’ works would therefore be required.</td>
</tr>
<tr>
<td>Protected or otherwise notable species within the study area</td>
<td>Warehousing on site does not appear suitable for bats.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>It is assumed that the pier is the existing feature and no ‘in river’ works would therefore be required.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Summary</td>
<td>This site is considered suitable for use as a CSO site due to the absence of need for any new ‘in river’ works during construction or operation and the lack of terrestrial ecology opportunities on site.</td>
<td></td>
</tr>
</tbody>
</table>

Ecology (terrestrial and aquatic)
### Flood risk assessment

<table>
<thead>
<tr>
<th>Site considerations</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Flood risk zone</strong></td>
<td>The site is located within defended Flood Zone 3a. Statutory defence levels are to the one in 1,000-year level, so flood risk to the site is residual from overtopping or breaching of the defence. Sewage transmission infrastructure is considered to be water compatible and hence suitable in any flood zone, according to Table D.2 of PPS25.</td>
<td>An FRA will be required to ensure that flood risk to the site can be managed and flood risk is not increased elsewhere. Mitigation may be required for residual risk to protect infrastructure in the event of breach of overtopping. Runoff will need to be managed via SUDS where possible, to ensure no increase in runoff volumes or rates as a result of construction.</td>
</tr>
<tr>
<td><strong>Assessment of conditions for SUDS</strong></td>
<td>Infiltration SUDS will be limited due to low permeability potential of the underlying geology. Space should be available for surface attenuation SUDS.</td>
<td>Surface attenuation is likely to be required for runoff.</td>
</tr>
<tr>
<td><strong>Potential issues</strong></td>
<td>No further issues identified</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>This site is suitable for use as a CSO site because sewage transmission infrastructure is considered to be water compatible and hence suitable in any flood zone, according to Table D.2 of PPS25. Mitigation can be provided to manage residual risk to the site and space is available on site for surface water attenuation.</td>
<td></td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>AQMA</td>
<td>The air quality objectives for NO₂ exceeded on major roads in vicinity of site.</td>
<td>There is a need for more site specific data.</td>
</tr>
<tr>
<td>Sensitive receptors</td>
<td>There are residential properties along Lots Road, Cremorne Road (A3220) and the A308. There are residential properties opposite the site access on Lots road. There are residential properties approximately 40m from the site on Lots Road, and one property (Station House) approximately 14m from the site boundary.</td>
<td>There are relevant air quality sensitive receptors present along the route the construction traffic is likely to take and close to the proposed construction works.</td>
</tr>
<tr>
<td>Existing traffic issues</td>
<td>The main traffic issue in this area is exhaust emissions from vehicles along the A308, A3220 and A3217 corridors.</td>
<td>Additional vehicle emissions have low potential to interfere with local air quality action plan policies.</td>
</tr>
<tr>
<td>Existing sources of significant air pollutants</td>
<td>See above</td>
<td>See above</td>
</tr>
<tr>
<td>Notable gaps in existing air quality monitoring</td>
<td>There is no data at likely access to A3220 or A308 and the nearest existing data indicates existing exceedance of AQLV.</td>
<td>Collect a minimum of six months’ diffusion tube data at site access to A3220 or A308 or other point of access to major road network.</td>
</tr>
<tr>
<td>Potential issue</td>
<td>The risk from additional exhaust emissions from construction HGVs is undefined at present. The risk from dust impacts at residential properties is moderate.</td>
<td>Minimise HGV movements on the local road network during the peak hour. Standard dust control measures would minimise the effect of fugitive dust on nearby sensitive receptors.</td>
</tr>
</tbody>
</table>
### Air quality

<table>
<thead>
<tr>
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<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
<td>This site is considered to be less suitable for use as a CSO site. There are residential properties in close proximity to the site, therefore there is potential for fugitive emissions of dust during construction to have a perceptible impact at these properties. These impacts can be minimised with standard dust control measures. There is potential for HGV movements on the local road network to cause localised air quality impacts in areas of already poor air quality. This can be somewhat mitigated by minimising the movement of HGVs during peak hours.</td>
<td></td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Noise band level (from Defra noise maps)</td>
<td>Information from Defra noise maps indicates daytime noise levels of less than 58 dB $L_{Aeq}$ and night-time noise levels of less than 50 dB $L_{Aeq}$ at residential properties located at Chelsea Wharf on Lots Road to the north of the site. The residential properties facing the site are likely to experience relatively low daytime and night-time noise levels due to distance from the A3220, located to the northeast. Noise levels from the Defra noise maps provide an indication of prevailing noise levels only, and would not be employed in any detailed assessments for chosen sites.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sensitive receptors</td>
<td>There are sensitive receptors in close proximity to the northern boundary of the site at Station House and Chelsea Wharf. Station House consists of a four-storey residential building; Chelsea Wharf consists of six-storey high office accommodation. Further residential properties are located along the length of Lots Road to the northwest of the site. Sensitive receptors at Station House are located approximately 14m from the temporary working area and approximately 22m from the shaft area. Chelsea Wharf is located on the boundary of the site, with the proposed shaft location at a distance of approximately 5m. The site access route is proposed to be onto Lots Road and therefore it is likely that there would be an adverse noise impact from HGV traffic.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Existing traffic issues</td>
<td>Local road traffic, including the road traffic on the A3220 to the northeast, would contribute to the local noise climate in the area.</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
## Noise

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing sources of significant noise emissions</td>
<td>Local road traffic, including the road traffic on the A3220 to the north east would contribute to the local noise climate in the area.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Potential issues</td>
<td><strong>Construction:</strong>&lt;br&gt;The construction period is estimated at 0.5 to 2 years and working hours would be 12 hours per day (7am to 7pm) Monday to Saturday. This has the potential to result in adverse noise impacts to the sensitive receptors surrounding the site, and in particular those located at Station House and Chelsea Wharf to the north of the site. A relatively high number of daily HGV movements are anticipated. This number of vehicle movements has the potential to result in adverse noise impacts on nearby sensitive receptors and, in particular, on residential properties located on Lots Road. The immediate site area is relatively large and, while the shaft location may be fixed, ancillary plant should be sited as far as is practicable from surrounding sensitive receptors. Situating plant in the south-eastern areas of the site would maximise the distance between them and the nearest sensitive receptors, and minimise potential disturbance. Proposed 3m site boundary fencing would provide useful noise mitigation to some plant and construction activities. However, it would not provide any attenuation to higher floor levels. Vibration resulting from general construction works is not anticipated to result in an adverse impact. The nearest receptors to the proposed shaft location are at a distance of approximately 5m, and it is unlikely that vibration levels would result in</td>
<td>Adherence to the good site practices provided in BS5228. Siting of noisy equipment and construction activities as far as is practicable from sensitive receptors. Provision of site boundary noise fences.</td>
</tr>
</tbody>
</table>
### Noise

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>minor cosmetic damage during shaft sinking but may give rise to annoyance. Vibration from tunnelling should be considered on a case-by-case basis at particular sensitive locations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operation:</strong></td>
<td>With appropriate attenuation (if necessary), there is no reason why noise from the ventilation column and top chamber should not result in adverse noise impacts to nearby sensitive receptors.</td>
<td></td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>The site is less suitable as a CSO site due to the proximity of the site to Station House and Chelsea Wharf to the north of the site which contains a large number of sensitive properties (residential and offices). Any shielding afforded by the site perimeter barriers would be largely ineffectual due to the height of these receptors. In addition, the number of vehicles associated with the construction phase and the proposed access route along Lots Road is likely to cause an adverse noise impact as HGVs access and egress the site.</td>
<td></td>
</tr>
<tr>
<td>Land quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Site location</strong></td>
<td><strong>Grid reference:</strong> 526534, 177105</td>
<td></td>
</tr>
<tr>
<td><strong>Current site use</strong></td>
<td>The site is currently occupied by a recycling facility operated by Sita Ltd.</td>
<td></td>
</tr>
<tr>
<td><strong>Topography</strong></td>
<td>No site visit undertaken by a land quality specialist at this stage</td>
<td></td>
</tr>
<tr>
<td><strong>Field evidence of contamination (ie, visual/olfactory)</strong></td>
<td>No site visit undertaken by a land quality specialist at this stage</td>
<td></td>
</tr>
</tbody>
</table>
| **Current surrounding land use (immediately adjacent to site)** | **North:** Pumping Station located adjacent northwest, Chelsea Wharf located northeast  
**East:** River  
**South:** Water screens, cleared land  
**West:** Residential housing |
| **Geological and hydrogeological information**    |
| **Geological strata**¹                           | **Geology (thickness)**  
- Superficial geology and made ground (9 m)  
- London Clay (37m)  
- Lambeth Group (20m)  
- Thanet Sand (11m) |
| **Underlying aquifer classes**                    |
| **Unproductive strata:** London Clay, river terrace deposits |
| **Secondary aquifer:** Lambeth Group, Thanet Sand |
| **Principal aquifer:** Chalk                      |
| **Groundwater vulnerability/Soil classification (High/Intermediate/Low/Not applicable)**² |
| **Source protection zone details**                |
| **Surface water receptor**                       |
| **Relevant information within a 250m radius of the site** |
| **Historical potentially contaminating activities (based on mapping data)** | **On site**  
- Cremorne Wharf, 1896-1987  
- Cremorne Works (rubber), (west), 1947-1972  
- Historical building plans list potential tanks – contents unknown (southern boundary), 1949  
- Historical building plans list oil storage (western... |
### Land quality

<table>
<thead>
<tr>
<th>Boundary</th>
<th>1949, 1952</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Historical building plans list asbestos, 1949-1970</td>
<td></td>
</tr>
<tr>
<td>- Electrical substation (northwest), 1949-1991</td>
<td></td>
</tr>
<tr>
<td>- Recycling centre, 1990-present</td>
<td></td>
</tr>
</tbody>
</table>

#### Off site

- Chelsea Wharf (adjacent northeast), 1947-1991
- Pumping station (adjacent northwest), 1947-present
- Historical building plans list potential fuel related tanks (adjacent northwest), 1949-1970
- Historical building plans list an electrical substation (10m north), 1949-1970
- Above-ground tank – contents unknown (40m south), 1947-1972
- Garage (45m northwest), 1909-1920
- Rubber factory (45m northwest), 1947-1972
- Engineering depot (45m northwest), 1991
- Electricity works (50m southwest), 1947-1991
- Durham Wharf (80m northeast), 1909-1991
- Above-ground tank (85m southwest), present
- Works (200m southwest), 1972-1977

#### Pollution incidents to controlled waters

<table>
<thead>
<tr>
<th>Incident</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Oils, unknown – minor incident (on site)</td>
<td></td>
</tr>
<tr>
<td>- Unknown sewage, minor incident (210m southwest)</td>
<td></td>
</tr>
<tr>
<td>- Oils - unknown, minor incident (210m southwest)</td>
<td></td>
</tr>
</tbody>
</table>

#### Landfill sites

None

#### Other waste sites

Two:
- RB of Kensington and Chelsea, Waste Transfer Site. Operation as far as is known, large input, no known restrictions on source of waste (on site), 1977
- Sita (GB) Ltd, Waste Transfer Site. Operation as far as is known, large input, no known restrictions on source of waste (on site) 1994

#### Registered radioactive substances

None

#### Fuel stations/depots

None

#### Contemporary trade directory entries

Fourteen:
- Recycling centre, inactive (on site)
- Printers two inactive and one active listings (17m
### Land quality

- Photographic processors, inactive (17m north)
- Electrical goods sales, manufacturers and wholesalers, active, (17m north)
- Vacuum cleaners, industrial and commercial – repairs and servicing, active, (17m north)
- Clothing and fabric manufacturers, inactive, (17m north)
- Telecommunications equipment and systems, inactive, (27m north)
- Furniture – repairing and restoration, active, (37m north)
- Pharmaceutical manufacturers and distributors, inactive, (50m northwest)
- Garage services, inactive, (116m northwest)
- Boat builders and repairers, active, (145m northeast)
- Greeting card publishers and wholesalers, active, (155m west)

### Site classification based on above information

<table>
<thead>
<tr>
<th>Potential site contaminants derived from surface sources (eg, contaminants in made ground)</th>
<th>Activity</th>
<th>Distance and direction to site</th>
<th>Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Some potential for made ground from potential filling operations during development</td>
<td>1) On site and directly adjacent to site</td>
<td>1) Metals, PAHs, TPH</td>
<td></td>
</tr>
<tr>
<td>2) Wharf (transport support and cargo-handling)</td>
<td>2) On site and directly adjacent to site</td>
<td>2) Metals, PAHs, TPH, asbestos</td>
<td></td>
</tr>
<tr>
<td>3) Works (rubber)</td>
<td>3) On site</td>
<td>3) Metals, PAHs, TPH</td>
<td></td>
</tr>
<tr>
<td>4) Oil storage</td>
<td>4) On site</td>
<td>4) Metals, PAHs, TPH</td>
<td></td>
</tr>
<tr>
<td>5) Potential tanks – contents unknown</td>
<td>5) On site</td>
<td>5) TPH, metals, PAHs, solvents</td>
<td></td>
</tr>
<tr>
<td>6) Electrical</td>
<td>6) On site</td>
<td>6) PCBs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7) On site</td>
<td>7) TPH, metals, PAHs, solvents</td>
<td></td>
</tr>
<tr>
<td>Land quality</td>
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<td>-------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>substation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) Recycling centre</td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential site contaminants derived from offsite sources and transported to site</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Wharf (Transport support and cargo handling)</td>
</tr>
<tr>
<td>2) Fuel related tanks</td>
</tr>
<tr>
<td>3) Electrical substation</td>
</tr>
<tr>
<td>4) Rubber factory</td>
</tr>
<tr>
<td>5) Engineering depot</td>
</tr>
<tr>
<td>6) Electricity works</td>
</tr>
<tr>
<td>1) Adjacent east</td>
</tr>
<tr>
<td>2) Adjacent northwest</td>
</tr>
<tr>
<td>3) 10m north</td>
</tr>
<tr>
<td>4) 45m northwest</td>
</tr>
<tr>
<td>5) 50m northwest</td>
</tr>
<tr>
<td>6) 50m southwest</td>
</tr>
<tr>
<td>1) Metals, PAHs, TPH, asbestos</td>
</tr>
<tr>
<td>2) Metals, PAHs, TPH</td>
</tr>
<tr>
<td>3) PCBs</td>
</tr>
<tr>
<td>4) Metals, PAHs, TPH</td>
</tr>
<tr>
<td>5) Metals, PAHs, TPH</td>
</tr>
<tr>
<td>6) Metals, PAHs, TPH, PCBs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contamination pathways to site (Conceptual Site Model)³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source 1: A1, A3, B4</td>
</tr>
<tr>
<td>Source 2: D6, E1, F7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contamination category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 2 – assessed as medium risk</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>The site is considered less suitable as a CSO site based on the medium potential for contamination of the site to have occurred, specifically from the rubber works, oil tank storage, recycling centre and wharf operations on site and the various industrial activities in the vicinity of the site. This potentially poses a risk to construction workers and adjacent human receptors through direct contact and inhalation exposure pathways. Additionally, the potential exists for contaminants to be drawn to the deeper aquifer if deep drilling/construction is undertaken on the site and for migration to surface water receptors to occur through groundwater transport.</td>
</tr>
<tr>
<td>Land quality</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
</tr>
<tr>
<td>1. From BGS Geological Model, giving average ground condition profile. Local near surface conditions may vary, particularly within the river.</td>
</tr>
<tr>
<td>2. Soil information for urban areas is based on fewer observations than elsewhere in the country. Therefore, a worst case vulnerability (H) is assumed until proven otherwise.</td>
</tr>
<tr>
<td>3. Refer to schematic Conceptual Site Model for explanation of site-specific source-pathway-receptors.</td>
</tr>
</tbody>
</table>
Contacts

For information about the Thames Tideway Tunnel

Call: 0800 0721 086 Lines are open 24 hours a day
Visit: www.thamestidewaytunnel.co.uk
Email: info@tidewaytunnels.co.uk

For our language interpretation service call 0800 0721 086

For information in Braille or large print call 0800 0721 086

For information about acceptance of our application and the examination process please contact the Planning Inspectorate.

Call: 0303 444 5000
Visit: http://infrastructure.planningportal.gov.uk