Section 48: Report on site selection process

Volume 5: Eastern site appendices R to W
Thames Tideway Tunnel
Section 48: Report on site selection process
Volume 5: Eastern site appendices R to W

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List of abbreviations

CSO combined sewer overflow
EU European Union
PS pumping station
SR storm relief
STW sewage treatment works
TBM tunnel boring machine
UK United Kingdom
Introduction to Volume 5: Eastern sites

1.1.1 This volume sets out the site selection process that was followed to identify the most suitable CSO and main tunnel sites in the eastern section of the main tunnel. Each appendix contains the following sections:
   a. Section 1 – Introduction
   b. Section 2 – Assessment prior to phase one consultation
   c. Section 3 – Assessment prior to phase two consultation
   d. Section 4 – Review prior to Section 48 publicity.

1.1.2 This volume includes the following appendices:
   a. Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)
   b. Appendix S – King Edward Memorial Park Foreshore
   c. Appendix T – Earl Pumping Station
   d. Appendix U – Deptford Church Street (formerly Borthwick Wharf Foreshore)
   e. Appendix V – Greenwich Pumping Station
   f. Appendix W – Abbey Mills Pumping Station
Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)

R.1 Introduction

R.1.1 This appendix sets out the site selection process that was followed in order to identify the most suitable site for constructing the eastern sections of the main tunnel prior to the following stages of the project: phase one consultation, phase two consultation and Section 48 publicity.

R.1.2 Table R.1 summarises the sites identified as the most suitable main tunnel site to construct the eastern sections of the main tunnel at each phase of the project.

Table R.1 Summary of the sites identified as most suitable and their proposed use to construct the eastern sections of the main tunnel at each phase of the project

<table>
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<tbody>
<tr>
<td><strong>Site:</strong> King’s Stairs Gardens</td>
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<tr>
<td><strong>Use:</strong> To receive the main tunnel from Tideway Walk to the west, receive the main tunnel from Abbey Mills Pumping Station to the east, and drive two CSO connection tunnels: one to Greenwich Pumping Station and the other to Druid Street.</td>
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<table>
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<th>Phase two consultation site and use:</th>
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<tr>
<td><strong>Site:</strong> Chambers Wharf</td>
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<tr>
<td><strong>Use:</strong> To receive the main tunnel from Kirtling Street to the west, drive the main tunnel eastwards to Abbey Mills Pumping Station, and receive the CSO connection tunnel from Greenwich Pumping Station.</td>
</tr>
<tr>
<td><em>(NB: Druid Street CSO site was replaced by modifications to the existing Shad Thames Pumping Station; therefore no connection tunnel was required.)</em></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 48 publicity site and use:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site:</strong> Chambers Wharf</td>
</tr>
<tr>
<td><strong>Use:</strong> To receive the main tunnel from Kirtling Street to the west, drive the main tunnel eastwards to Abbey Mills Pumping Station, and receive the CSO connection tunnel from Greenwich Pumping Station.</td>
</tr>
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</table>

R.1.3 This appendix is structured as follows:

a. Section R.1 provides details of the type of site needed and a brief summary of how the *Site selection methodology paper* (See Volume 2) was applied at each stage of the project.

b. Section R.2 provides the details of how we identified our preferred site for phase one consultation.
c. Section R.3 provides details of the back-check assessments and reasons why we changed our preferred site for phase two consultation.

d. Section R.4 and R5 provides details of the post phase two consultation scheme review and confirm the most suitable main tunnel site for the construction of the eastern sections of the main tunnel for Section 48 publicity.

**Type of site**

R.1.4 We needed to identify a series of suitable sites to allow us to build the main tunnel. The main tunnel would transfer the collected overflows to Abbey Mills Pumping Station where they would be transferred via the Lee Tunnel (under construction) to Beckton Sewage Treatment Works.

R.1.5 Larger sites are required where a TBM would be inserted into the ground (known as main tunnel drive sites). This type of site would need to handle all the materials excavated by the TBM as it constructs that section of the tunnel. Smaller sites are required to remove the TBM from the ground at the end of the tunnel drive (known as main tunnel reception/intermediate sites). A more detailed description of the different types of site required to construct and operate the project and the size requirements of these sites can be found in the *Site selection background technical paper*.

R.1.6 We determined whether a site would be a main tunnel drive or main tunnel reception/intermediate site (ie, the use of the site) by considering the tunnelling drive options (see Volume 1, Main report).

**Site selection process**

R.1.7 The *Site selection methodology paper* recognises the vital complementary relationship between the site selection process and engineering design developments. Accordingly, as the site selection process progressed it became increasingly important to compare sites against engineering requirements. A fundamental consideration was the need to identify enough sites in the right locations to enable the project to be built.

R.1.8 All of the potential sites were identified in accordance with our *Site selection methodology paper*, which involved a ‘sieving’ approach that commenced with identifying all potentially suitable areas of land (excluding concentrated residential sites and World Heritage Sites). The main tunnel sites went through increasingly detailed levels of assessment. All the assessments were informed by a multidisciplinary approach that took into account engineering, planning, environmental, community and property considerations and professional judgement. All the assessments carried out were based on the information available at the time and the related stage in the project's development.

R.1.9 Below is a brief summary of how the *Site selection methodology paper* was applied at each stage of the project with appropriate cross-references to sections in this appendix and to other volumes of this report.

R.1.10 Prior to phase one consultation we applied our multidisciplinary sieving approach to all the assessments outlined in the *Site selection methodology paper*, which is also briefly outlined below (see Section...
Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)

R.2.2). A summary of all the assessments and the preferred phase one consultation site and use are presented in Section R.2. In addition, a more detailed discussion of the tunnelling options for the main tunnel and comparisons for all routes and at this stage of the project can be found in Volume 1, Main report, Sections 4.9 to 4.12.

R.1.11 Following phase one consultation and prior to phase two consultation, we reviewed the sites and decided to carry out a back-check (as defined in the Site selection methodology paper) in order to review the preferred and shortlisted sites prior to phase two consultation. This back-check involved a repeat of each relevant stage of our site selection process to reconsider which sites would be most suitable to construct the main tunnel, including a re-examination of main tunnel drive options, in order to identify the preferred main tunnel site and use. We utilised the same multidisciplinary approach that we followed prior to phase one consultation. The results of the back-check are presented in Section R.3 and superseded all previous assessments undertaken prior to phase one consultation (reported in Section R.2), except where noted (see Section 3, R.3.29 to R.3.59). A more detailed discussion of the tunnelling options for the main tunnel and comparisons at this stage of the project can be found in Volume 1, Main report, Sections 6.3 to 6.6.

R.1.12 Following phase two consultation and prior to Section 48 publicity, the Site selection methodology paper required a review of the scheme. The review of main tunnel sites involved re-checking the choices of sites identified as most suitable for the construction of the main tunnel, drive options and site use on the proposed route, which are presented in Section R.4. This was done to confirm the proposed main tunnel sites for Section 48 publicity.

R.2 Phase one consultation preferred main tunnel site: Site selection process

Introduction

R.2.1 Section R.2 explains how the Site selection methodology paper was implemented in order to arrive at the preferred main tunnel site for the eastern sections of the tunnel route for phase one consultation.

R.2.2 Prior to phase one consultation, the site selection process comprised: identification of sites for inclusion on a long list; assessment of sites on the long list to create a draft short list of sites (Table 2.2); assessment of the draft shortlisted sites to create a final short list of sites (Table 2.3); preparation of detailed site suitability reports for each final shortlisted site; preparation of the Engineering options report (Spring 2010) detailing the tunnelling drive options; a multidisciplinary optioneering workshop to consider the detailed contents of the site suitability report for each shortlisted site and the Engineering options report and compare sites to identify the preferred main tunnel site and use (drive or reception/intermediate) for phase one consultation (see also Volume 1, Main report, Sections 4.9 to 4.12 for the pre-phase one consultation discussion on tunnelling drive options).
R.2.3 This stage took place from Spring 2009 to Summer 2010.

R.2.4 The assessments contained in Section R.2 were based on the information available at the time and the related stage in the project’s development. The assessments in this section therefore comprise a historic representation of the process and all of the assessments have been superseded (also see Section 3, R.3.28 to R.3.59).

Assessment of the long list sites

R.2.5 The long list of potential main tunnel sites for the eastern section of the tunnel route was created by conducting a desktop survey of the land in the London boroughs of Southwark and Tower Hamlets and the City of London.

R.2.6 In total, 116 sites were included on the long list as potential main tunnel sites. These sites were assessed having regard to the high-level considerations set out in Table 2.2 of the Site selection methodology paper (hereafter referred to as Table 2.2) including engineering (site size, site features, availability of jetty/wharf and access), planning and environment (heritage, landscape/townscape, open space and ecological), and community and property (neighbouring land uses, site use, Special Land/Crown land and acquisition costs) considerations.

R.2.7 Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the next stage of assessment. This did not necessarily mean that these sites were ultimately judged suitable as a main tunnel shaft site, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained were not retained on the draft short list for more detailed assessment. Full details of these assessments are provided in the Table 2.2 assessment tables and the accompanying plans.

R.2.8 Of the 116 sites identified as suitable for main tunnel shafts for the construction of the central and eastern sections of the tunnel, 12 were assessed as potentially suitable and passed to the draft short list, and 104 sites were eliminated as unsuitable.

Assessment of draft short list sites

R.2.9 The 12 draft short list sites identified as potentially suitable in Table 2.2 were further assessed by the engineering, planning, environment, community and property disciplines, having regard to the considerations set out in Table 2.3 of the Site selection methodology paper (hereafter referred to as Table 2.3). This stage of the process built on the information gathered and assessments undertaken at long list stage but focussed on more detailed local considerations.

R.2.10 At this stage, we also consulted with each of the London local authorities along the preferred route and pan-London stakeholders, such as the Environment Agency and English Heritage, to seek their views on the suitability of the sites for the short list.
R.2.11 As with the Table 2.2 assessment, sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the short list to pass to the next stage of assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Sites judged to be more constrained were not retained on the short list for more detailed assessment. Full details are provided in the Table 2.3 assessment tables and the accompanying plans.

R.2.12 Of the 12 sites on the draft short list, initially only one (S020T: Shadwell Basin) was assessed as potentially suitable as either a main tunnel drive or reception/intermediate site. However, a number of engineering factors were subsequently identified that made this site difficult to use and potentially undesirable. It was therefore necessary to revisit the draft short list to identify additional potential locations for main drive sites in the Tower Bridge area to accommodate the risk of the Shadwell Basin site not being suitable. As a result, two further sites, S54SK: King’s Stairs Gardens and S021T: King Edward Memorial Park, were additionally taken forward for assessment as main tunnel drive sites (on the basis that they represented the sites on the draft short list large enough for a main tunnel drive).

R.2.13 Therefore, three main tunnel sites and two main tunnel reception/intermediate sites passed to the final short list.

**Assessment of the final short list sites**

R.2.14 The six final shortlisted sites retained for more detailed assessment as potential main tunnel shaft sites were:

Sites identified as suitable for main tunnel drive or reception sites:
- a. S020T: Shadwell Basin
- b. S021T: King Edward Memorial Park
- c. S54SK: King’s Stairs Gardens.

Sites identified as suitable for main tunnel reception/intermediate sites only:
- a. S024T and S025T: Heckford Street
- b. S036T: Limehouse Basin.

R.2.15 A site suitability report (SSR) was prepared for each of the final shortlisted sites. These reports contained an assessment of the suitability of each site, having regard to engineering, planning, environment, community and property considerations. At this stage in the process, sites were assessed in isolation with no comparison to other sites or regard to tunnelling strategy. Sites were evaluated by each discipline, using technical knowledge and professional judgement as appropriate, and assessed as suitable, less suitable or not suitable from that discipline’s perspective.

R.2.16 A summary of the conclusions of each discipline’s assessment from the site suitability reports is provided below.
**S020T: Shadwell Basin**

R.2.17 Site S020T is located in Wapping in the London Borough of Tower Hamlets. The site is irregular in shape and accessible from Newlands Quay, Couldnards Quay, and Wapping Wall. The surrounding area is predominantly residential, and all buildings are oriented to overlook the basin.

R.2.18 **Engineering:** This site was considered less suitable as a main tunnel drive site because of its distance from the river, the significant preparatory works needed to construct the shaft and the considerable difficulties of moving barges to and within the site. The site was also considered less suitable as a main tunnel reception/intermediate site for similar reasons.

R.2.19 **Planning:** This site was considered not suitable as either a main tunnel drive or reception/intermediate site. A series of planning designations apply to the site and it was unlikely that mitigation measures would balance out the potential cumulative adverse impacts of the proposed construction works on this site.

R.2.20 **Environment:** Overall, the site was considered less suitable as either a main tunnel drive or reception/intermediate site, and further investigation would be required as to whether transport, built heritage and townscape, ecology, flood risk, surface water, noise, air quality and land quality impacts could all be adequately mitigated.

R.2.21 **Socio-economic and community:** Use of this site was considered less suitable as either a main tunnel drive or reception/intermediate site from a community impacts perspective as it was likely to have a significant detrimental impact on the large number of residents living in the surrounding residential properties, and likely to lead to the loss or displacement of the Shadwell Basin Outdoor Activity Centre, which could be quite difficult to relocate or otherwise mitigate.

R.2.22 **Property:** The site was considered suitable as both a main tunnel drive and reception/intermediate site, although subject to acquisition risk, which would be proportionately greater in respect of a main shaft site.

**S021T: King Edward Memorial Park**

R.2.23 Site S021T is an area of public open space located in Wapping in the London Borough of Tower Hamlets. The park is irregular in shape and has numerous entrances, accessed primarily from The Highway (A1203) and Glamis Road.

R.2.24 **Engineering:** This site was considered suitable as either as a main tunnel drive or reception/intermediate site. It is sufficiently large to readily accommodate the required construction facilities, has good road access and good potential for jetty/wharfage facilities.

R.2.25 **Planning:** The site was considered not suitable for a main tunnel drive site. The site is a vibrant and well-maintained public park, which hosts a wide variety of sport and leisure activities. Its use as a main shaft site would result in the temporary loss of a significant area of the park and the remaining areas of open space might not be useable, given the level of construction activity proposed and the potential associated impacts of
Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)

noise, dust and traffic movements. Replacement open space would likely be required by the council and this could be problematic in this location, due to an existing deficiency and the scale that would be associated with the main shaft.

R.2.26 This site was considered **less suitable** for a main tunnel reception site as it would result in the temporary loss of around a third of the public open space, and would impact on the continued integrity and enjoyment of the remaining areas of the park.

R.2.27 **Environment:** Overall, the site could be **suitable** as either a main tunnel drive or reception/intermediate site, although mitigation would be required.

R.2.28 Based on current information, all site options were **suitable** from the perspectives of transport, archaeology, water resources, flood risk, and land quality. All site options were considered **less suitable** from the perspectives of built heritage and townscape, noise and air quality.

R.2.29 **Socio-economic and community:** This site was considered **not suitable** as a main tunnel drive site. It was likely that there would be significant impacts on the park and users of the sports and leisure facilities. Mitigation was likely to involve finding acceptable alternative facilities easily accessible to the local community. For the same reasons, the site was considered **less suitable** as a reception/intermediate site.

R.2.30 **Property:** The site was considered **suitable** as either a main tunnel drive or reception/intermediate site, although the potential acquisition risk would be proportionately greater for the larger main shaft site.

**S54SK: King’s Stairs Gardens**

R.2.31 Site S54SK is located within King’s Stairs Gardens, a public park in the London Borough of Southwark.

R.2.32 **Engineering:** This site was considered **suitable** as either a main tunnel drive or reception/intermediate site because it is large enough to fit all the site facilities, no demolition other than the playground would be required, and wharfage/jetty facilities could be provided.

R.2.33 **Planning:** This site was considered **suitable** for a main tunnel drive or reception/intermediate site, subject to appropriate mitigation measures. A number of designations in the **Unitary Development Plan apply** to the site and it might be possible to mitigate potential impacts with appropriate measures, but this would require further consideration. Potential impacts on residential amenity should be considered further and, in particular, the potential to relocate construction works within the site to increase the separation distance between the works and the facades of adjacent dwellings. There would be a loss of amenity space. Notwithstanding the metropolitan park deficiency area, which affects the borough as a whole, the immediate area is well served by parks and open spaces, especially Southwark Park.

R.2.34 **Environment:** Overall, the site was considered **suitable** as a main tunnel drive or reception/intermediate site, although mitigation would be required. Based on the information available at the time, the site was considered **suitable** from the perspectives of transport, archaeology, built heritage,
water resources, flood risk and land quality. The site was considered less suitable from the perspectives of townscape, ecology, air quality and noise.

R.2.35 **Socio-economic and community:** This site was considered not suitable as a main tunnel drive site from a community impacts point of view, as it was likely that using the majority of King’s Stairs Gardens would have a severe impact on the local community. It was considered less suitable as a main tunnel reception/intermediate site, despite the fact that only approximately half the site would be used. There could be a number of significant impacts on the local community, including impacts on the playground onsite, dense residential properties adjacent to the site to both the east and west, as well as two churches adjacent to the site.

R.2.36 **Property:** The site was considered less suitable as a main tunnel drive site and suitable as a main tunnel reception/intermediate site.

**S024T and S025T: Heckford Street**

R.2.37 Sites S024T and S025T are both accessed from Heckford Street, which adjoins The Highway (A1203) in the London Borough of Tower Hamlets. The sites are roughly rectangular in shape and are currently occupied by commercial buildings, warehouses and offices that are one to two storeys high, with associated parking areas.

R.2.38 **Engineering:** This site was considered less suitable as a split main tunnel reception/intermediate site because the impact on third-party assets could be significant. The warehouses within both sites (S024T and S025T) would need to be demolished in order to construct the shaft. The site is a minimum of 100m away from the river and multi-storey residential buildings and the Rotherhithe Tunnel lie between the site and the river. There is no direct route for the 10m-wide overflow culvert to the river to avoid going under a building and the culvert could clash with the Rotherhithe Tunnel. This would present significant issues.

R.2.39 **Planning:** The sites were considered suitable as a split main tunnel reception/intermediate shaft site. There were few planning designations that applied to the site and it was considered that, with appropriate mitigation measures, it was unlikely that these designations would be unacceptably impacted on. However, implementation of the future mixed-use redevelopment of the Highway Business Park could present a constraint to the use of the site for the project, and the status of the development proposals would require on-going monitoring.

R.2.40 **Environment:** Overall, the site was considered suitable as a split main tunnel reception/intermediate site, although mitigation would be required. Based on the information available at the time, the site was considered suitable from the perspectives of transport, archaeology, built heritage, townscape, water resources, ecology, and flood risk, and less suitable from the perspectives of air quality, noise and land quality.

R.2.41 **Socio-economic and community:** This site was considered less suitable for a main tunnel reception/intermediate site from a community impacts perspective, due to the combined number of potential impacts likely to occur. Foremost among these was the likely loss of several
commercial units onsite, which would require businesses to relocate. This could impact on the livelihoods of owners, operators and employees. Mitigation could involve discussions regarding relocation and/or compensation.

**R.2.42 Property:** The site was considered suitable as a main tunnel reception site.

**S036T: Limehouse Basin**

**R.2.43** Site S036T is located north of Narrow Street in the London Borough of Tower Hamlets. Limehouse Basin hosts a well-used marina with three large pontoons. The basin is accessed from the south via the River Thames, via a swing bridge and lock. The basin is surrounded on all sides by modern, high-rise blocks of flats ranging from three to 12 storeys in height, with habitable rooms and balconies overlooking the basin. In addition, the Cruising Association Members Club is located to the east and a boat keepers’ office to the south of the site. The DLR line runs along the northern boundary of the site behind apartments in Basin Approach.

**R.2.44 Engineering:** This site was considered not suitable for a main tunnel reception/intermediate site because of the requirements for extensive enabling and reinstatement works prior to and following construction. The site does not have good vehicular access and a neighbouring building might need to be demolished to create sufficient access to the site. There are residential buildings and other third-party assets in close proximity to the site. The overflow culvert would need to run a significant distance under existing structures as a siphon (which is not desirable) or through demolished buildings to reach the river.

**R.2.45 Planning:** This site was considered not suitable as a main tunnel reception/intermediate site. A series of planning designations applies to the site and it was unlikely that any mitigation measures would balance out the cumulative adverse effects of the proposed construction works on this site.

**R.2.46 Environment:** Overall, the site was considered to be less suitable as a main tunnel reception/intermediate site. The site was considered suitable from the perspectives of transport, archaeology and hydrogeology, and less suitable from the perspectives of built heritage, townscape, surface water, ecology, flood risk, air quality, noise, and land quality.

**R.2.47 Socio-economic and community:** This site was considered less suitable as a main tunnel reception/intermediate site, as it appeared likely that it would have significant impacts on the use of the basin as a marina and the surrounding dense residential development, which would be difficult to mitigate. Also, following the use of the site, the need to maintain permanent access and place a concrete structure in the marina would decrease the area of the basin and would likely reduce the number of pontoons available.

**R.2.48 Property:** The site was considered less suitable as a main tunnel reception/shaft site. Disadvantages included the potential classification of the site as special land, which would require a ministerial procedure to acquire; temporary and permanent disturbance to marina operations; the
potential for high discretionary purchase costs; and the possibility that residential flats might have to be acquired and demolished for the overflow culvert.

**Phase one consultation preferred site**

R.2.49 Consideration of the main tunnel sites up to short list stage principally focussed on each individual site separate to the assessment of tunnel drive and alignment options (ie, how the tunnel would be constructed and the route it would take). However, due to the nature of the scheme, it was necessary to select a package of main tunnel sites, having regard to how they would work in combination and in relation to the tunnel alignment and CSO connections.

R.2.50 The *Engineering options report* (Spring 2010) describes the process of identifying the tunnelling options, taking engineering requirements into account. The main points are summarised below.

R.2.51 The engineering team considered possible drive options – the possible of ways in which the tunnel could be constructed by ‘driving’ between combinations of shortlisted main tunnel sites –having particular regard to changes in ground conditions and the requirement for different types of tunnelling machines, construction risks and timescales.

R.2.52 To manage the total number of combinations of tunnel drive and reception/intermediate site options that make up a ‘drive option’, the available shortlisted main tunnel sites were grouped together in zones. The zones were based on the geographical locations of the sites along the line of the River Thames and numbered and named for convenient referencing, as illustrated in Figure R.1 below.

![Figure R.1 Location of site zones](image)

R.2.53 Our preferred route for the main tunnel runs from west London to Abbey Mills Pumping Station and involves Zones S1 to S7 and Zone S11. Zones S8 to S10 were only required for the previously considered River Thames and Rotherhithe routes, which did not become our preferred option and are not considered further in this appendix.
R.2.54 Multidisciplinary workshops were held to identify the most suitable main
tunnel shortlisted site within each zone, taking into account the
conclusions reached in the SSRs, as described above.

R.2.55 An important consideration in relation to Zones S6 and S7 is that
downstream of Tower Bridge, the geology through which the tunnel would
be constructed changes and it would be desirable to change the type of
TBM used to construct the tunnel. This is further explained in the Site
selection background technical paper (see Volume 2, general appendices).
As a result, we identified a possible need for a main tunnel site in the area downstream of Tower Bridge.

R.2.56 A series of comparisons were then made as to how best to use the
potential sites identified across all the zones to construct the main tunnel.

R.2.57 As detailed in paragraph R.2.12, a number of engineering factors were
identified that made the use of site S020T: Shadwell Basin difficult and
potentially undesirable as a main tunnel drive site. This meant that in
Zones S6 and S7 we had to make a choice between the use of S54SK:
King’s Stairs Gardens or S021T: King Edward Memorial Park as a main
tunnel site. The following factors were taken into account and King’s
Stairs Gardens was identified as the preferred site:

a. Use of King Edward Memorial Park would extend the length of the
main tunnel drive and increase the challenges associated with
tunnelling in chalk.

b. In planning policy terms, a distinction could be made between the two
sites in relation to the availability of alternative public open space in
the vicinity. King Edward Memorial Park is located in an area that has
been defined as a public open space deficiency area. Therefore,
identifying locations in which to provide suitable replacement facilities
in order to mitigate the temporary loss of a portion of King Edward
Memorial Park would be difficult, if not impossible. In comparison,
Southwark Park is located immediately to the south of King’s Stairs
Gardens and is considered a useable local alternative.

c. Although use of King Edward Memorial Park would avoid the creation
of a separate CSO site to intercept the North East Storm Relief Sewer
that runs beneath the park, cost and programme issues associated
with the longer tunnel drive to this site outweighed the potential
benefit.

d. King Edward Memorial Park is within a conservation area. At this
stage of the site selection process, no conservation areas would be
affected by the use of King’s Stairs Gardens. It also appeared that
there would be less opportunity to mitigate townscape impacts at King
Edward Memorial Park.

e. In environmental terms, the use of either site had the potential to give
rise to noise disturbance and air quality impacts and would require
extensive mitigation measures.

f. For both sites, use of special parliamentary procedures might be
needed to secure them.
R.2.58 On balance, S54SK: King’s Stairs Gardens was considered more acceptable and was identified as the preferred site in Zones S6 to S7 as a main tunnel reception site. This site would also be used to drive connection tunnels to connect the four south-eastern CSOs (Druid Street, Earl Pumping Station, Deptford Storm Relief, and Greenwich Pumping Station).

R.2.59 Via the same process, we also identified site S79WH with S80WH: Tideway Walk as a preferred main drive shaft site in Zone S5 (see Volume 4, Central appendices, Appendix L) and S84NM: Abbey Mills Pumping Station as the preferred location for a main tunnel drive site in Zone S11 (see Appendix W). These tunnels would be driven towards King’s Stairs Gardens, where the TBMs would be received. In addition, a more detailed discussion of the tunnelling options for the main tunnel and comparisons for all routes and at this stage of the project can be found in Volume 1, Main report, Sections 4.9 to 4.12).

R.3 Phase two consultation preferred main tunnel site: scheme development and site selection

Introduction

R.3.1 Section R.3 explains how the Site selection methodology paper was implemented in order to arrive at the preferred main tunnel sites for the eastern sections of the tunnel route for phase two consultation.

R.3.2 Following phase one consultation and prior to phase two consultation, the site selection process comprised: a review of comments from phase one consultation; consideration of any ongoing scheme design and/or any new information received; completion of a back-check exercise to review the sites listed in Section R.2 along with any potential new sites or a combination of sites applying the assessment process outlined in R.2.2, including preparation of a new Engineering options report (Summer 2011) with revised tunnelling drive options; a multidisciplinary optioneering workshop to consider the detailed contents of the site suitability report for each shortlisted site and the Engineering options report and compare shortlisted sites to identify the preferred main tunnel site and use (drive or reception/intermediate) for phase two consultation (see also Volume 1, Main report, Sections 6.3 to 6.6 for the pre-phase two consultation discussion on tunnelling drive options).

R.3.3 This stage took place from Winter 2010 to Autumn 2011.

R.3.4 The assessments contained in Section R.3 were based on the information available at the time and the related stage in the project’s development.

Phase one consultation responses

R.3.5 As part of the site selection methodology, all feedback received during phase one consultation was reviewed and taken into account in the development of our scheme for phase two consultation.

R.3.6 The main issues and concerns raised during phase one consultation in relation to the King’s Stairs Gardens site are summarised below:
Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)

a. loss of green space and valued local amenity in a densely populated and deprived part of London
b. impact on residential amenity and property values
c. the impact on the wildlife, vegetation and mature trees
d. impact on footpaths, including the Thames Path
e. impact on existing heritage features
f. design of our permanent proposals.

R.3.7 The main comments received in support included:
a. agreement that this is the best choice of site
b. Southwark Park can compensate for the temporary loss of green space at King’s Stairs Gardens
c. after-use designs are acceptable.

R.3.8 More details on the consultation responses relating to this site and our response to the comments received are provided in the Report on phase one consultation.

R.3.9 During phase one, an important change of circumstances emerged in relation to a brownfield site known as Chambers Wharf, located to the west of King’s Stairs Gardens. Prior to the launch of our phase one consultation, we were aware that a developer had secured planning approval for housing on the Chambers Wharf site and appeared to have started work on this permission (demolition and site clearance had commenced). Since then, the site had been put up for sale and we purchased the site, in conjunction with property developers St James Group Limited (part of Berkley Group), as a possible alternative to King’s Stairs Gardens.

R.3.10 Post phase one consultation, the London Borough of Southwark designated King’s Stairs Gardens a conservation area, although this did not change the planning discipline’s assessment of the site’s suitability.

Back-check process

R.3.11 In response to the change in circumstances of the Chambers Wharf site, feedback we received during phase one consultation, a number of engineering design developments and the availability of new technical information, we undertook a back-check to review our selection of S54SK: King’s Stairs Gardens as our preferred site.

R.3.12 This back-check involved a targeted repeat of each relevant stage of our site selection process (as defined in the Site selection methodology paper) to reconsider which site would be the most suitable main tunnel drive shaft site in Zones S6 to S7.

R.3.13 The main factors that triggered this back-check process were:
a. potential availability of Chambers Wharf, which had previously been considered unavailable, as the redevelopment of the site had started and the site was being cleared
b. Various consultees’ comments that challenged the use of King’s Stairs Gardens as a main tunnel site due to the potential impact on the surrounding environment and community.

**Engineering assumptions**

R.3.14 As part of the back-check process, the engineering assumptions that had been used during the initial phase of site selection were reviewed to determine whether any of the design developments or new technical information altered the original assumptions.

R.3.15 The outcome of this review was that we reduced the size of construction sites from 18,000m$^2$ to 15,000m$^2$ for main tunnel drive sites for the western sections of the tunnel, which would be constructed predominantly in London Clay. This change did not, however, affect the sites in Zones S6 to S7, which would predominantly be constructed in chalk.

R.3.16 The following section outlines the results of each stage of the back-check process.

**Assessment of the back-check long list**

R.3.17 The original long list sites for main tunnel sites in Zones S6 to S7 contained 116 sites. The sites were reviewed alongside any newly identified sites to determine the ‘scope’ of the back-check exercise (i.e., which sites would be subject to reappraisal as a result of the relevant change of site circumstances or new information that had emerged). The result of this scoping exercise found that we needed to assess the following 19 sites:

a. S50SK: St James Church, St James’ Road
b. S54SK: King’s Stairs Gardens
c. S55SK: Southwark Park, Jamaica Road
d. S76SK: Chambers Wharf
e. S003T with S004T: Car Park, Vaughan Way/East Smithfield
f. S009T: John Orwell Sports Centre, Tench Street
g. S010T: Wapping Gardens, Tench Street
h. S011T: Waterside Gardens, Wapping High Street
i. S012T: Tobacco Dock, Wapping Lane/Pennington Street
j. S013T with S014T: Princes Court Business Estate, Wapping Lane
k. S015T: Industrial building, Wapping Lane
l. S016T: Open space, rear of Garnet Street
m. S020T: Shadwell Basin
n. S021T: King Edward Memorial Park
o. S024T and S025T: Heckford Street
All the other sites on the original long list were scoped out as there had been no changes in circumstances to necessitate a reappraisal. The potential group of sites listed above was put on the back-check long list. It should be noted that at this stage, we also considered alternative sites suggested by consultees.

The back-check long list sites were then assessed against the engineering, planning, environment, community and property considerations set out in Table 2.2 of the *Site selection methodology paper*.

Table R.2 below summarises the outcome of the back-check assessment of the back-check long list of sites. Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the next phase of assessment. This did not necessarily mean that these sites were ultimately judged suitable, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained did not pass to the back-check draft short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table below.

We then determined how we would assess the size of the sites that were retained under the Table 2.2 assessment. For some sites, this included examining neighbouring sites to determine whether they could be used together.

**Table R.2 Long list to draft short list for main tunnel sites in Zones S6 to S7 (Table 2.2 assessment)**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
</table>
| S50SK   | St James Church, St James’ Road        | **Recommendation**: Not to short list.  
**Rationale**: A church on the site would likely preclude the use of this site. |
| S54SK   | King’s Stairs Gardens                  | **Recommendation**: To draft short list as a main tunnel site and main tunnel reception/intermediate site. |
| S55SK   | Southwark Park, Jamaica Road           | **Recommendation**: To draft short list as a main tunnel reception/intermediate site.            |
| S76SK   | Chambers Wharf                         | **Recommendation**: To draft short list as a main tunnel site, a main tunnel reception/intermediate site and a main tunnel reception/intermediate site with a CSO connection tunnel drive. |
| S003T   | Car Park, Vaughan Way/East Smithfield  | **Recommendation**: To draft short list as a split main tunnel reception/intermediate site with S004T. |
| S004T   | Car Park, Vaughan Way/East             | **Recommendation**: To draft short list as a split main tunnel reception/|

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R.3.18

R.3.19

R.3.20

R.3.21
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Smithfield</td>
<td>intermediate site with S003T.</td>
</tr>
<tr>
<td>S009T</td>
<td>John Orwell Sports Centre,</td>
<td><strong>Recommendation:</strong> To draft short list as a main tunnel and main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td></td>
<td>Tench Street</td>
<td></td>
</tr>
<tr>
<td>S010T</td>
<td>Wapping Gardens, Tench Street</td>
<td><strong>Recommendation:</strong> To draft short list as a main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td>S011T</td>
<td>Waterside Gardens, Wapping</td>
<td><strong>Recommendation:</strong> To draft short list as a main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td></td>
<td>High Street</td>
<td></td>
</tr>
<tr>
<td>S012T</td>
<td>Tobacco Dock, Wapping</td>
<td><strong>Recommendation:</strong> Not to short list.</td>
</tr>
<tr>
<td></td>
<td>Lane/Pennington Street</td>
<td><strong>Rationale:</strong> The site includes a Grade I listed building that cannot be demolished. Furthermore, this building has been newly converted to shopping complex.</td>
</tr>
<tr>
<td>S013T</td>
<td>Princes Court Business Estate,</td>
<td><strong>Recommendation:</strong> Not to short list.</td>
</tr>
<tr>
<td></td>
<td>Wapping Lane</td>
<td><strong>Rationale:</strong> The site would be too small without S014T. However, there are employment and linkages to S014T; therefore it was likely that there would be an impact on the local economy.</td>
</tr>
<tr>
<td>S014T</td>
<td>Princes Court Business Estate,</td>
<td><strong>Recommendation:</strong> Not to short list.</td>
</tr>
<tr>
<td></td>
<td>Wapping Lane</td>
<td><strong>Rationale:</strong> This site includes a residential block, which could possibly be excluded, but without this area the site would be too small. Also, the site appeared to be interrelated to S013T and it seemed unlikely that parts of the site could be used without disrupting the operations of the business park.</td>
</tr>
<tr>
<td>S015T</td>
<td>Industrial building, Wapping</td>
<td><strong>Recommendation:</strong> Not to short list.</td>
</tr>
<tr>
<td></td>
<td>Lane</td>
<td><strong>Rationale:</strong> The site is currently being redeveloped as residential property.</td>
</tr>
<tr>
<td>S016T</td>
<td>Open space, rear of Garnet</td>
<td><strong>Recommendation:</strong> To draft short list as a main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td></td>
<td>Street</td>
<td></td>
</tr>
<tr>
<td>S020T</td>
<td>Shadwell Basin</td>
<td><strong>Recommendation:</strong> To draft short list as a main tunnel and main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td>S021T</td>
<td>King Edward Memorial Park</td>
<td><strong>Recommendation:</strong> To draft short list as a main tunnel and main tunnel</td>
</tr>
</tbody>
</table>
### Table R.3 Draft short list to final short list for main tunnel sites in Zones S6 to S7 (Table 2.3 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>S54SK</td>
<td>King’s Stairs Gardens</td>
<td><strong>Recommendation:</strong> Retain on short list as a main tunnel drive site and main tunnel reception/intermediate site.</td>
</tr>
</tbody>
</table>
| S55SK   | Southwark Park, Jamaica Road            | **Recommendation:** Not to short list. **Rationale:**  
  - Engineering – Tunnelling and hydraulic considerations make this site less favourable. No direct access to the river. |
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>S76SK</td>
<td>Chambers Wharf</td>
<td><strong>Recommendation:</strong> Retain on short list as a main tunnel drive site, a main tunnel reception/intermediate site and a main tunnel reception/intermediate site with a CSO connection tunnel drive.</td>
</tr>
</tbody>
</table>
| S003T with S004T | Car park of businesses, Vaughan Way/East Smithfield | **Recommendation:** Not to short list. **Rationale:**  
  - Engineering – Tunnelling and hydraulic considerations.  
  - Property – Impact on existing businesses and acquisition risks.  
  - Community – Impact on operation of existing businesses. |
| S009T   | John Orwell Sports Centre, Tench Street | **Recommendation:** Not to short list. **Rationale:**  
  - Community – Potential partial loss of sports and leisure facilities through use of this site is likely to impact on community cohesion, health and wellbeing, equalities considerations as well as a number of potentially sensitive receptors in the surrounding area.  
  - Planning/Environment – There are a number of constraints to the use of this site, mainly transport and amenity impacts. The adjacent site is also a designated Site of Nature Conservation Importance, Conservation Area and Public Open Space.  
  - Property – There is a risk of special land procedures and Rule 5 Equivalent Reinstatement. |
<p>| S010T   | Wapping Gardens, Tench | <strong>Recommendation:</strong> Not to short list. |</p>
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Street</td>
<td><strong>Rationale:</strong>&lt;br&gt;• Planning/Environment – There are significant constraints to the use of the site with the site designated Public Open Space, a site of Nature Conservation Importance and located within a Conservation Area. Furthermore, road access to site is difficult.&lt;br&gt;• Property – Risk of special land procedures and equivalent reinstatement.&lt;br&gt;• Community – Potential partial loss of public open space, sports and leisure facilities through use of this site is likely to impact on community cohesion, health and well-being, equalities considerations as well as a number of potentially sensitive receptors in the surrounding area.</td>
</tr>
<tr>
<td>S011T</td>
<td>Waterside Gardens, Wapping High Street</td>
<td><strong>Recommendation:</strong> Not to short list.&lt;br&gt;<strong>Rationale:</strong>&lt;br&gt;• Engineering – Site presents a number of engineering constraints including poor access over canal and under railway bridge.&lt;br&gt;• Community – Potential cumulative impact on sensitive receptors including nearby residential properties, community facilities, open space, playground and tennis courts. Use of the site could therefore affect community cohesion, the local economy, the health and wellbeing of the local community and could disproportionately impact on equalities groups.</td>
</tr>
<tr>
<td>S016T</td>
<td>Open space, real of Garnet Street</td>
<td><strong>Recommendation:</strong> Not to short list.&lt;br&gt;<strong>Rationale:</strong>&lt;br&gt;• Engineering – Access to the site is poor.&lt;br&gt;• Community – Temporary partial loss of the public open space could impact on community cohesion, health and wellbeing, as well as</td>
</tr>
</tbody>
</table>
### Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)

#### Section 48: Report on site selection process

**Volume 5: Eastern site appendices R to W**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>S020T</td>
<td>Shadwell Basin</td>
<td><strong>Recommendation:</strong> Retain on short list as a main tunnel drive site and a main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td>S021T</td>
<td>King Edward Memorial Park</td>
<td><strong>Recommendation:</strong> Retain on short list as a main tunnel drive site and a main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td>S024T and S025T</td>
<td>Heckford Street</td>
<td><strong>Recommendation:</strong> Retain on short list as a main tunnel reception/intermediate site.</td>
</tr>
<tr>
<td>S036T</td>
<td>Limehouse Basin</td>
<td><strong>Recommendation:</strong> Retain on short list as a main tunnel reception/intermediate site.</td>
</tr>
</tbody>
</table>

**NB.** The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

R.3.26 Of the 14 sites on the back-check draft short list, six were assessed as potentially suitable and passed to the final short list, and eight sites did not.

**Assessment of the back-check final short list sites**

R.3.27 Following the back-check, the six final shortlisted sites identified for assessment at the next stage were:

Sites identified as suitable for main tunnel drive or reception/intermediate sites:

a. S54SK: King’s Stairs Gardens  
b. S76SK: Chambers Wharf  
c. S020T: Shadwell Basin  
d. S021T: King Edward Memorial Park.

Sites identified as suitable for main tunnel reception/intermediate sites only:

a. S024T and S025: Heckford Street  
b. S036T: Limehouse Basin.

R.3.28 For some of the sites listed above, the construction layouts considered at phase one were still applicable for consideration at phase two. The site suitability reports produced for these sites were therefore re-evaluated to consider whether any new information would have a bearing on any of the disciplines’ recommendations and superseded previous assessments in Section 2, except where the assessments remained unchanged (see below for relevant cross-references to Section 2 site suitability report summaries). For the sites for which we proposed new configurations and new sites, we conducted a new assessment.
**S020T: Shadwell Basin**

R.3.29 This site suitability report was reviewed by all disciplines and this resulted in slight changes as specified below, but they did not materially alter the overall thrust of recommendations for both site options (also see R.2.17 – R.2.22).

R.3.30 The presence of an overflow culvert was a significant issue in the original assessment. However, this was no longer required. The engineering recommendation remained *less suitable* for a main tunnel drive site but changed from *less suitable* to *suitable* for a reception/intermediate site because the culvert was not required and the distance of the site from river was not really significant.

R.3.31 Some UDP planning policies had been superseded by the *London Borough of Tower Hamlets Core Strategy*. However, there were no significant changes that would alter the *not suitable* assessment for both options.

R.3.32 There was no change to the property assessment for the reception/site as *suitable*. However, the assessment for the single main tunnel drive site changed from *suitable* to *less suitable* on the grounds of special land acquisition risks and the potentially high discretionary purchase costs.

R.3.33 The environment and socio-economic and community recommendations both remained unchanged as *less suitable*.

**S021T: King Edward Memorial Park**

R.3.34 This site suitability report was reviewed by all disciplines and some changes were made, and some recommendations were even less suitable than the stated options (also see R.2.23 to R.2.30).

R.3.35 The UK Power networks (nee EDF) cable tunnel is no longer a constraint at this site. However, this did not change the engineering assessment as *suitable* for all options.

R.3.36 Some UDP policies had been superseded by the *London Borough of Tower Hamlets Core Strategy* and some Interim Planning Guidance policies also became relevant. Two additional minor planning applications, specifically for the Rotherhithe Vent Shaft, were of relevance. None of these changes in circumstances changed the assessment as *not suitable* for main tunnel option, but for consistency both reception/intermediate options became *less suitable*.

R.3.37 Environment recommendations as *less suitable* for the main tunnel and reception/intermediate with a CSO interception and jetties options and *suitable* for a reception/intermediate with a CSO interception remained unchanged.

R.3.38 Socio-economic and community recommendations remained *not suitable* for main tunnel, but for consistency both reception/intermediate options became *less suitable*.

R.3.39 There was no change to the property assessment as *suitable* for both reception site options. However, the assessment of the single main tunnel drive site was changed from *suitable* to *less suitable* on the grounds of...
special land acquisition risks and the potentially high discretionary purchase costs.

**S024T and S025T: Heckford Street**

R.3.40 This site suitability report was reviewed and updated by all disciplines, which is summarised below.

R.3.41 Sites S024T and S025T are both accessed from Heckford Street, which adjoins The Highway (A1203) in the London Borough of Tower Hamlets. The sites are roughly rectangular in shape and currently occupied by commercial buildings, warehouses and offices that are one to two storeys high, with associated parking areas.

R.3.42 **Engineering:** This site was considered less suitable as a main tunnel reception/intermediate site because the impact on third-party assets could be significant. The warehouses within both sites (S024T and S025T) would need to be demolished in order to construct the shaft. The site is a minimum of 100m away from the river and multi-storey residential buildings and the Rotherhithe Tunnel lie between the site and the river.

R.3.43 **Planning:** The sites were considered less suitable as a main tunnel reception/intermediate site. A number of planning designations and policies apply both on and adjacent to the Heckford Street sites. Those relating to protection of employment uses as well as heritage and residential amenity considerations were of most relevance to the proposed development. The Heckford Street sites are in existing employment use and fall within a local industrial location and a designation to enhance and protect existing uses. The loss of employment facilities without suitable justification and replacement elsewhere in this area would be contrary to planning policy.

R.3.44 The current status of the residential redevelopment proposals is uncertain at this stage but we understood that pre-application discussions between the applicant and the council had commenced, and a planning application could be expected in the near future. If this were the case, use of the site for the project could delay the redevelopment and adjust the footprint of the site, which is available for redevelopment.

R.3.45 **Environment:** Overall, the site was considered suitable as a main tunnel reception/intermediate site, although mitigation would be required. Based on the information available at the time, the site was considered suitable from the perspectives of transport, archaeology, built heritage, townscape, water resources, ecology and flood risk, and less suitable from the perspectives of air quality, noise and land quality.

R.3.46 **Socio-economic and community:** This site was considered less suitable for a main tunnel reception/intermediate site from a community impacts perspective, due to the combined number of potential impacts likely to occur. Foremost among these was the likely loss of several commercial units on site which would require businesses to relocate. This could impact on the livelihoods of owners, operators and employees. Mitigation could involve discussions regarding relocation and/or compensation.
R.3.47 **Property:** The site was considered **suitable** as a main tunnel reception/intermediate site. The acquisition costs were likely to be significant but acceptable and the site did not include Crown land or special land. However, if planning permission for mainly residential development of both parts of the site were granted, the assessment would change to **less suitable**. If permission were granted and implemented prior to acquisition, the assessment would change to **not suitable**.

**S036T: Limehouse Basin**

R.3.48 This site suitability report was reviewed by all disciplines, but none of the recommendations for main tunnel reception/intermediate site option were materially altered.

R.3.49 Some UDP policies had been superseded by the *London Borough of Tower Hamlets Core Strategy* and some Interim Planning Guidance policies also became relevant. An EIA screening opinion for additional moorings for water taxis had been issued, and a planning application to change the use of leisure moorings to residential moorings had been approved. However, there were no significant changes that altered the assessment or conclusion.

R.3.50 All other discipline recommendations remained unchanged (see R.2.43 to R.2.48).

**S54SK: King’s Stairs Gardens**

R.3.51 This site suitability report was reviewed and updated by all disciplines as summarised below. The site was reassessed as:

a. a main tunnel site
b. a main tunnel reception/intermediate site – north side of site
c. a main tunnel reception/intermediate site – south side of site
d. a main tunnel reception/intermediate site with CSO connection tunnel.

R.3.52 **Engineering:** This site was assessed as **suitable** as a main tunnel drive site because it is large enough to fit all the site facilities, no demolition other than the playground would be required, and wharfage/jetty facilities could be provided. For these reasons, this site was also **suitable** as a main tunnel reception/intermediate site (north side of site) and a reception site with a CSO connection tunnel.

R.3.53 However, under the reception/intermediate option, the layout south of the site was considered **less suitable** due to potential issues associated with the alignment of the main tunnel.

R.3.54 **Planning:** Use of King’s Stairs Gardens as a main tunnel drive or reception/intermediate site under all scenarios was considered **less suitable**. A number of planning designations in the adopted *Core Strategy applied* to the site, including its designation as Metropolitan Open Land and as a conservation area. The site is also surrounded by sensitive receptors, including residential dwellings, a church, a convent and the Bosco Centre, which includes a nursery and college.
R.3.55 The use of King’s Stairs Gardens would result in a loss of amenity space. However, the immediate area is well served by parks and open spaces, especially Southwark Park.

R.3.56 **Environment:** Overall, the site was considered **suitable** as a main tunnel reception/intermediate site (for both options or with a CSO connection tunnel) or a main tunnel drive site. Based on current information, the site was **suitable** from the perspectives of transport, archaeology, built heritage, water resources (hydrogeology and surface water) and flood risk, and noise (for all main tunnel reception/intermediate site options). The site was considered **less suitable** from the perspectives of townscape, ecology, air quality, and noise (for all site options). Although the site was **suitable** from the perspective of land quality for the other site layout options, it was considered **less suitable** under the south reception/intermediate site layout.

R.3.57 **Socio-economic and community:** This site was **not suitable** as a main tunnel drive site or a main tunnel reception/intermediate site with CSO connection tunnel site as the temporary loss of the majority of King’s Stairs Gardens was considered likely to have a severe impact on the local community. The temporary loss of the playground onsite and the potential impact on the dense residential properties adjacent to the site to the east and west, as well as the church, convent and Bosco Centre adjacent to the south of the site, compounded the potential community impact. Both these options would also involve substantial tunnelling works onsite and a large jetty in the river.

R.3.58 The site was **less suitable** as a main tunnel reception/intermediate site to the north and south, despite the fact that only approximately half of the gardens would be used due to the impacts on the receptors outlined previously. However, these options would not involve onsite tunnelling works or a jetty in the river.

R.3.59 **Property:** The site was considered to be **less suitable** as a main tunnel drive site. A special parliamentary procedure might be required as the foreshore was likely to be Crown land. Furthermore, acquisition costs could be significant, but possibly acceptable. However, the site was **suitable** as a main tunnel reception/intermediate site under all layout options. Acquisition costs were likely to be acceptable and the site is undeveloped. As with the main tunnel drive option, a special parliamentary procedure might be required.

**S76SK: Chambers Wharf**

R.3.60 Site S76SK is a redevelopment site in the London Borough of Southwark. Chambers Wharf comprises vacant sites either side of Chambers Street, and the northern part of the site fronts onto the River Thames.

R.3.61 The wider area is largely residential in character and flats to the east overlook the site. St Michael’s Roman Catholic Secondary School is located to the southwest of the site and further residential dwellings to the southeast.

R.3.62 The western edge of the site is formed primarily by the rear of Luna House and Axis Court. Luna House fronts the river with Axis Court located to its
Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)

Section 48: Report on site selection process
Volume 5: Eastern site appendices R to W

rear, which fronts East Lane. Properties to the rear of these buildings overlook this site. The eastern edge of the site is bounded by Loftie Street and the south by Chambers Street.

R.3.63 Additional land to the south of Chambers Street is required to use the site as a main shaft site. This land is located to the east of St Michael’s Roman Catholic School, adjacent to green space on the corner of Chambers Street and Bevington Street. The land would house temporary offices and welfare facilities including parking, and no permanent structures would be left on this part of the site.

R.3.64 The site was assessed as a main tunnel drive site and main tunnel reception/intermediate site.

R.3.65 Engineering: The site was also assessed as suitable as a main tunnel reception/intermediate site and a reception/intermediate site with a CSO connection as it is of sufficient size and limited demolition would be required. There is an existing wharf and jetty facilities could be provided. The site is also considered suitable as a main tunnel drive shaft site, although the site would need to be extended into the river by providing a temporary deck or cofferdam of sufficient size to include all the site facilities. This structure would also provide access to river transport.

R.3.66 Planning: The site was considered less suitable as a main tunnel drive site and a reception/intermediate site with CSO connection drive site. A number of planning designations apply to the site and it was considered that, with appropriate mitigation measures, it was unlikely that these designations would be unacceptably impacted on. However, the site—in particular the land to the south of Chambers Street—is in close proximity to St Michael’s Roman Catholic Secondary School, which was considered to be a particularly sensitive receptor both to the construction works and the associated road traffic movements. The principle of using the river to transport construction materials could be acceptable, but would need further investigation to avoid unacceptable impacts on navigation, hydrology and biodiversity in order to accord with London Plan policy relating to the Blue Ribbon Network.

R.3.67 The site was also considered less suitable for a reception/intermediate site without appropriate mitigation measures, although this site configuration would not require jetty facilities.

R.3.68 Environment: Overall, the site was considered suitable as a main tunnel drive or reception/intermediate shaft site or a reception/intermediate shaft site with CSO connection, although mitigation would be required.

R.3.69 Based on the information available at the time, the site was considered suitable for a main tunnel site, a reception/intermediate site or a reception/intermediate site with CSO connection tunnel from the perspectives of transport, archaeology, built heritage, townscape and water resources (hydrogeology).

R.3.70 The site was, however, considered less suitable as a main tunnel site, a reception/intermediate site or a reception/intermediate site with CSO connection tunnel from the perspectives of flood risk, ecology, air quality,
and noise and land quality. The site was also considered less suitable as a main tunnel site from the perspective of water resources.

**R.3.71 Socio-economic and community:** This site was considered less suitable as a main tunnel site due to the close proximity of a large number of residential properties either adjacent, overlooking or opposite the works area. In addition, works appeared likely to impact on properties in the vicinity and potentially St Michaels Roman Catholic Secondary School and Riverside Primary School.

**R.3.72** This site was also considered less suitable for a reception/intermediate site, both with and without a CSO connection tunnel. The reduced scope of work and area of land required suggested that it could be possible to manage some of the most disruptive construction works within the site to increase the separation distance between the works and the residential properties adjacent to the east and west. It should also be possible to mitigate potential impacts on other residential properties in the vicinity and prevent disruption to St Michael’s Roman Catholic Secondary School.

**R.3.73 Property:** The site was considered suitable as a main tunnel drive or reception/intermediate site, with or without a CSO connection tunnel. The site is not a developed site, and was recently cleared for redevelopment. Furthermore, the land is under Thames Water ownership. However, the foreshore was likely to be Crown land and the riverbed owned by the PLA. Also, the permanent structure would need to be located so as to minimise the impact on redeveloping the remaining site.

**Phase two consultation preferred site**

**R.3.74** Following the completion of the back-check process, we held a multidisciplinary workshop to identify the most suitable sites in main tunnel Zones S6 Shad and S7 Limehouse from the list of shortlisted sites (see Volume 1, Main report, Section 6, Table 6.1).

**R.3.75** This workshop took into account the findings of the site suitability reports, drive options; feedback received during phase one consultation and interim engagement. On the basis of the assessments described above and professional judgement, all disciplines identified S76SK: Chambers Wharf was as the preferred site for each type of use (ie main tunnel drive or reception/intermediate site) for Zone S6 Shad and SO21T: King Edward Memorial Park for Zone S7 Limehouse.

**R.3.76** These sites were then used to assess the main tunnel drive options (see Volume 1, Main report, Section 6, Table 6.2). It was then necessary to compare drive options that used King Edward Memorial Park to those that used Chambers Wharf (as described in paragraph R.3.81 below).

**R.3.77** Only one site was potentially needed in Zone S6, so we also compared the two shortlisted sites (see Figure R.2).
In summary, S76SK: Chambers Wharf was identified as the most suitable site for Zone S6 Shad for the following reasons:

a. It is an available and feasible brownfield site that has been earmarked for redevelopment, whereas King’s Stairs Gardens is a greenfield site.

b. Use of the site would potentially delay but otherwise not interfere with the future redevelopment plans for this cleared site.

c. It has better river access through the construction of the cofferdam. New wharfage/jetties would need to be constructed at King’s Stairs Gardens in order to remove excavated materials and deliver construction materials to site.

d. Use of Chambers Wharf would likely cause less disruption to the Thames Path as it is already diverted around the site.

e. Use of this site would have less impact on the natural and built environment than would likely be the case at King’s Stairs Gardens.

f. Planning policies are more favourable to the use of the Chambers Wharf than King’s Stairs Gardens.

g. Use of this site presents fewer programme risks and enabling works could be progressed more readily.

The workshop also recognised that at Chambers Wharf, like King’s Stairs Gardens, there are a number of residential properties in close proximity to the proposed works, and mitigation would be required to reduce the potential impacts of construction activities.

Having considered the various shortlisted sites in the main tunnel zones, we then considered the sites with regard to the tunnelling drive options.
Appendix R – Chambers Wharf (formerly King’s Stairs Gardens)

Tunnelling strategy

R.3.81 The decision taken by all disciplines at a multidisciplinary workshop to favour drive options that used Chambers Wharf over the alternative drive options that used King Edward Memorial Park is discussed in Volume 1, Main report, Section 6.6, Comparison 1. A discussion of the tunnelling options and drive option comparisons involving Chambers Wharf follows at Volume 1, Main report, Section 6.6, Comparison 3, Options A-C.

R.3.82 In summary, in our multidisciplinary workshop we selected S76SK: Chambers Wharf as the most suitable site main tunnel drive or reception/intermediate site for Zones S6 Shad and S7 Limehouse, but due to site size and programme, the site could only support a drive in one direction at a time. In Zone S11 Abbey Mills, we selected S84: Abbey Mills Pumping Station as the most suitable main tunnel drive or reception site (see Appendix W). We selected Greenwich Pumping Station as the most suitable site to drive or receive the Greenwich connection tunnel (see Appendix V).

R.3.83 Our workshop then discussed the tunnelling option comparisons using the most suitable sites listed in paragraph R.3.81 above. We considered the three drive options to construct the eastern sections of the main tunnel and the Greenwich connection tunnel, which is required to pick up the Earl Pumping Station and Greenwich Pumping Station CSO to connect them to the main tunnel. The options are summarised as follows:

a. **Option A1**: Drive the main tunnel from S84NM: Abbey Mills Pumping Station to S76SK: Chambers Wharf; receive the main tunnel from Kirtling Street and drive the connection tunnel from S76SK: Chambers Wharf to C33XV and CL005: Greenwich Pumping Station. **Option A2 was the same**, but reversed the drive of the connection tunnel to drive it from C33XV and CL005: Greenwich Pumping Station to S76SK: Chambers Wharf.

b. **Option B**: Drive the main tunnel from S84NM: Abbey Mills Pumping Station to S76SK: Chambers Wharf; drive the main tunnel from S76SK: Chambers Wharf to Kirtling Street and receive the connection tunnel at S76SK: Chambers Wharf from C33XV+ CL005: Greenwich Pumping Station.

c. **Option C**: Drive the main tunnel from S76SK: Chambers Wharf to S84NM: Abbey Mills Pumping Station; receive the main tunnel from Kirtling Street and drive the connection tunnel from C33XV+ CL005: Greenwich Pumping Station to S76SK: Chambers Wharf.

R.3.84 On balance, based on the assessment of the above drive options, we preferred Option C, ie, to drive the eastern section of the main tunnel from S76SK: Chambers Wharf to S84NM: Abbey Mills Pumping Station (see Volume 1, Main report, Section 6.6, Comparison 3, Options A-C). The key reasons for this decision are summarised below:

a. Further technical work and discussions with the Lee Tunnel project team, which is building a shaft at S84NM: Abbey Mills Pumping Station, showed that transporting materials to and from the site by the River Lee and Bow Creek was at worst not feasible and at best highly
undesirable where materials needed to be transported daily over a two- to three-year period. This level of barge movements would be required if this site were used as main tunnel drive site, given the volume of excavated material that would be produced by the 24 hour per day tunnelling.

b. At S76SK: Chambers Wharf, 1,500 tonne or potentially larger barges could be used on the River Thames to remove excavated material produced by a main tunnel drive site, whereas at S84NM: Abbey Mills Pumping Station there were more constraints in using Bow Creek to remove excavated material due to the fact that only small 350 tonne barges could be used during a short tidal window. Even smaller barges were used for the Lee Tunnel project. Having smaller capacity barges increases the number required, which would add considerable complexity and risk.

c. Using S76SK: Chambers Wharf as the main tunnel drive site would avoid the need to construct campsheds and wharf facilities in Channelsea River, which would avoid the potential health and safety risks associated with moving the contaminated materials in the river bed. It would also mean less impact on the foreshore ecology and water resources at Abbey Mills.

d. Driving the connection tunnel from Greenwich would mean that the main tunnel could be driven from Chambers Wharf, which would allow excavated materials from the larger main tunnel to be removed by river (see Volume 1, Main report, Section 6 6.6, Comparison 3 and Section 6.8 on the Greenwich connection tunnel).

R.3.85 Overall, it was agreed that **S76SK: Chambers Wharf should become the phase two preferred main tunnel drive site.** Figure R.3 overleaf illustrates the preferred sites and the tunnelling strategy for constructing the eastern section of the main tunnel.
Figure R.3 Preferred sites and tunnelling strategy for the eastern section of the main tunnel and the Greenwich connection tunnel

Confirmation of the preferred site for phase two consultation

R.3.86 A final preferred sites workshop was held in Summer 2011 to verify the choice of preferred sites and consider any outcomes of further engagement and scheme development. The conclusion was that that **S76SK: Chambers Wharf should become the phase two consultation preferred site to construct the eastern sections of the main tunnel** (S76SK: Chambers Wharf would be used to drive the main tunnel to S84NM: Abbey Mills Pumping Station and to receive the connection tunnel from C33XV and CL005: Greenwich Pumping Station and Phoenix Wharf).

R.3.87 Phase two consultation provided an opportunity for the public to comment on our revised preferred site and scheme for the project.

R.4 Post phase two consultation: Review of main tunnel sites and uses

Introduction to the review

R.4.1 Section R.4 explains how we implemented the requirement in the *Site selection methodology paper* to review the scheme following phase two consultation and prior to Section 48 publicity.

R.4.2 The scheme review at this stage of the site selection process comprised: a review of comments from phase two consultation; consideration of any
ongoing scheme design and/or new technical information; and multidisciplinary workshops and reviews to identify the proposed main tunnel site and use for Section 48 publicity.

R.4.3 This stage took place from Spring 2012 to Summer 2012.

**Summary of phase two consultation responses**

R.4.1 Details of the consultation feedback related to this site and our responses are provided in the *Report on phase two consultation*. We reviewed all phase two consultation comments and took them into account in the development of the proposed scheme. The main feedback relevant to site selection can be summarised as follows:

a. object to the use of this preferred site

b. the reasons for selecting this preferred site are flawed/questionable; should avoid sites in residential and/or densely populated areas and sites that are close to sensitive receptors, including schools (St Michael’s School and Riverside Primary School)

c. the site is too small and does not have sufficient capacity for the works and would need to be extended 50m into the River Thames in order to accommodate the proposals

d. question the need for a site here as there is no CSO

e. alternative site suggestions included King’s Stairs Gardens and Abbey Mills Pumping Station

f. alternative drive strategies were suggested for the eastern section of the main tunnel and the Greenwich connection tunnel

R.4.2 The main comments received in support of the site included:

a. support for the use of the preferred site since phase one consultation. The site is more suitable than the shortlisted King’s Stairs Gardens site

b. the physical characteristics of the site make it suitable: it is currently vacant and available for redevelopment; it is a brownfield site; it has good access to the road and the River Thames; no trees would be removed.

R.4.3 We recognise the concerns that have been raised, including potential impact upon residential properties and St Michael’s School and Riverside Primary School, and we will take this into account when developing the project further, including measures which can be put in place to minimise any significant potential impacts.

R.4.4 Due to suggested alternative drive options, we reviewed our tunnelling strategy and prepared a revised *Engineering options report* (Spring 2012), which concludes the suggested alternatives would not add any new drive options, so the potentially feasible main tunnel drive options remained the same as those in the *Engineering options report* (Summer 2011) prior to phase two consultation.

R.4.5 Having taken all comments received during phase two consultation into account, we still believe S76SK: Chambers Wharf is the most suitable site.
to drive the main tunnel east to Abbey Mills Pumping Station, receive the main tunnel from Kirtling Street and receive the connection tunnel from Greenwich Pumping Station.

Any changes in circumstances or new information

R.4.6 Planning permission was granted for a mixed use residential development on the Chambers Wharf site (application number: 07/AP/1262). The consented development also included a site to the south of Chambers Street that we did not propose to be part of our site.

R.4.7 Southwark had designated King’s Stairs Gardens as a local Site of Importance for Nature Conservation in the adopted Canada Water Area Action Plan. King’s Stairs Gardens was also dedicated as a Village Green under the Commons Act 2006.

R.4.8 Having considered this new information, we still believe S76SK: Chambers Wharf is the most suitable site to drive the main tunnel east to Abbey Mills Pumping Station, receive the main tunnel from Kirtling Street and receive the connection tunnel from Greenwich Pumping Station.

Summary of main tunnel drive options

R.4.9 We re-reviewed Chambers Wharf and King’s Stairs Gardens, we still believe S76SK: Chambers Wharf is the most suitable site in main tunnel Zone S6 Shad. As noted in paragraph R.4.4 above, the drive options did not change, but we still reviewed the drive options and the main tunnel comparisons in Section 3 above in paragraphs R.3.81 to R.3.85 remain valid (also see Volume 1, Main report, Section 6.6). Therefore S76SK: Chambers Wharf remains the most suitable site to drive the main tunnel east to Abbey Mills Pumping Station, receive the main tunnel from Kirtling Street and receive the connection tunnel from Greenwich Pumping Station.

Main rationale for the selection of the main tunnel drive site for Section 48 publicity

R.4.10 In summary, S76SK: Chambers Wharf was identified as the most suitable main tunnel drive site to construct the eastern sections of the main tunnel for the following reasons (in no particular order):

a. It is an available and feasible brownfield site that has already been earmarked for redevelopment and our works could be constructed so as not to affect the approved residential development.

b. The site would have direct river access through the construction of the cofferdam, which would allow use of barges to transport materials in order to reduce the number of vehicles required to service the site.

c. This site is closer to the change geology than the other shortlisted sites and would therefore reduce the tunnelling risks across different types of geology, especially from the Lambeth Group and Thanet Sand Formation to chalk.
d. The site would not cause disruption to the Thames Path because it is already diverted around the site, therefore no diversion works would be required.

e. There are few policy designations on the Chambers Wharf site unlike the other shortlisted sites.

f. There would be less impact on the River Thames Foreshore intertidal habitats at Chambers Wharf than similar habitats in the River Lee at Abbey Mills Pumping Station.

**R.5 Confirmation of the proposed main tunnel site for Section 48 publicity**

R.5.1 The post phase two consultation review described above in R.4 confirmed *S76SK: Chambers Wharf as the proposed site for Section 48 publicity to drive the main tunnel east to Abbey Mills Pumping Station, receive the main tunnel from Kirtling Street and receive the connection tunnel from Greenwich Pumping Station.*

R.5.2 Section 48 publicity provides an opportunity for the public to comment on the proposed sites and the project as a whole. Comments received in response to Section 48 publicity will be reviewed and taken into consideration prior to submission of the final application.
Appendix S – King Edward Memorial Park Foreshore

S.1 Introduction

S.1.1 This appendix sets out the site selection process that was followed to identify the most suitable site to intercept the North East Storm Relief CSO prior to the following stages of the project: phase one consultation, phase two consultation and Section 48 publicity.

S.1.2 Table S.1 summarises the sites identified as most suitable to intercept the North East Storm Relief CSO at each phase of the project.

<table>
<thead>
<tr>
<th>Table S.1 Summary of the sites identified as most suitable to intercept the North East Storm Relief CSO at each phase of the project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase one consultation site:</strong> King Edward Memorial Park Foreshore</td>
</tr>
<tr>
<td><strong>Phase two consultation site:</strong> King Edward Memorial Park Foreshore</td>
</tr>
<tr>
<td><strong>Section 48 publicity site:</strong> King Edward Memorial Park Foreshore</td>
</tr>
</tbody>
</table>

S.1.3 This appendix is structured as follows:

a. Section S.1 provides details of the type of site needed and a brief summary of how the Site selection methodology paper was applied at each stage of the project.

b. Section S.2 provides details of how we identified our preferred site for phase one consultation.

c. Section S.3 provides details of the back-check assessments and reasons why we changed our preferred site for phase two consultation.

d. Sections S.4 and S.5 provide details of the post phase two consultation scheme review and confirm the most suitable CSO site for Section 48 publicity.

Type of site

S.1.4 We need a site to intercept the local combined sewer overflow (CSO), known as the North East Storm Relief CSO, and connect it to the main tunnel.

Site selection process

S.1.5 All the potential sites were identified in accordance with our Site selection methodology paper, which involved a ‘sieving’ approach that commenced with identifying all potentially suitable areas of land (excluding concentrated residential sites and World Heritage Sites). CSO sites also needed to be as close to the existing sewer as practicable; therefore we followed a localised optioneering approach to identify suitable sites. The
sites went through increasingly detailed levels of assessment. All the assessments were informed by a multidisciplinary approach that took into account engineering, planning, environmental, community and property considerations and professional judgement.

S.1.6 Prior to phase one consultation we applied our multidisciplinary sieving approach to all the assessments outlined in the Site selection methodology paper, which is also briefly outlined below (see Section S.2.2).

S.1.7 Following phase one consultation, we reviewed the sites and decided to carry out a ‘back-check’ in order to review the preferred and shortlisted sites as well as new sites and uses prior to phase two consultation. This back-check involved a repeat of each relevant stage of our site selection process to reconsider which site would be the most suitable CSO site and how the CSO would be connected to the main tunnel. We followed the same multidisciplinary approach as prior to phase one consultation. The results of this back-check superseded all previous assessments undertaken prior to phase one consultation (set out in Section S.2).

S.1.8 Following phase two consultation, the Site selection methodology paper required a review of the scheme. The review of CSO sites involved re-checking the choices of sites identified as most suitable to intercept each CSO associated with the proposed route and proposed the CSO sites for Section 48 publicity.

S.2 Phase one consultation preferred CSO site: Site selection process

Introduction

S.2.1 Section S.2 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase one consultation.

S.2.2 Prior to phase one consultation, the site selection process comprised: identification of sites for inclusion on a long list; assessment of sites on the long list to create a draft short list of sites (Table 2.2); assessment of the draft shortlisted sites to create a final short list of sites (Table 2.3); preparation of detailed site suitability reports for each final shortlisted site and a multidisciplinary optioneering workshop to identify the preferred CSO site to intercept the North East Storm Relief CSO for phase one consultation.

S.2.3 This stage took place from Spring 2009 to Summer 2010.

S.2.4 The assessments described in Section S.2 were based on the information available at the time and the related stage in the project’s development. The assessments in this section therefore comprise a historic representation of the process and all of the assessments have been superseded.
Assessment of the long list sites

S.2.5 The long list of potential sites to intercept the North East Storm Relief CSO was created by conducting a desktop survey of the land in the vicinity of the existing sewer.

S.2.6 In total, 14 sites were included on the long list. These sites were assessed having regard to the high-level considerations set out in Table 2.2 of the Site selection methodology paper (hereafter referred to as Table 2.2) including engineering (site size, site features, availability of jetty/wharf and access), planning and environment (heritage, landscape/townscape, open space and ecological), and community and property (neighbouring land uses, site use, Special Land/Crown land and acquisition costs) considerations.

S.2.7 Table S.2 below provides a summary of the outcome of the Table 2.2 assessment in respect of the long list of sites considered for the interception of this CSO. Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the draft short list. This did not necessarily mean that these sites were ultimately judged suitable, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained were not retained on the draft short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table below.

Table S.2 Long list to draft short list for the interception of the North East Storm Relief CSO (Table 2.2 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C29XA</td>
<td>King Edward Memorial Park Foreshore</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C29XB</td>
<td>King Edward Memorial Park</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C29XC</td>
<td>Shadwell Sailing Club, Shadwell Pierhead</td>
<td><strong>Recommendation</strong>: Not to draft short list. <strong>Rationale</strong>: The site is too narrow and restrictive. The engineering connection to the sewer would be long and difficult.</td>
</tr>
<tr>
<td>C29XD</td>
<td>Peartree Lane and private gardens of residential flats</td>
<td><strong>Recommendation</strong>: Not to draft short list. <strong>Rationale</strong>: The site is too narrow and restrictive. The engineering connection to the sewer would be long and difficult.</td>
</tr>
<tr>
<td>C29XE</td>
<td>Allotments on Cable Street/Hardinghe Street</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
</tr>
<tr>
<td>--------</td>
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<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale:</strong> The engineering connection to the sewer would be long and difficult.</td>
</tr>
</tbody>
</table>
| C29XF  | St Paul's Church and grounds, The Highway | **Recommendation:** Not to draft short list.  
**Rationale:** The site is very restrictive and has poor access. The engineering connection to the sewer would be long and difficult. |
| C29XG  | Gordon House grounds and car park off Glamis Road | **Recommendation:** To draft short list. |
| C29XH  | Adventure playground and allotments off Glamis Road | **Recommendation:** To draft short list. |
| C29XJ  | Grounds/gardens of flats on Elf Row | **Recommendation:** Not to draft short list  
**Rationale:** The site is too narrow and restrictive. The engineering connection to the sewer would be long and difficult. |
| C29XK  | The Highway (road adjacent to King Edward Memorial Park) | **Recommendation:** Not to draft short list.  
**Rationale:** The site would have very restrictive working conditions as it is a main arterial route. |
| C29XM  | Car parking and games areas on Martineau Street. | **Recommendation:** Not to draft short list.  
**Rationale:** The site is too narrow and restrictive. |
| C29XN  | Oyster Row (residential street and on plot car park spaces/gardens) | **Recommendation:** Not to draft short list.  
**Rationale:** The site is too narrow and restrictive. |
| C29XP  | School playground | **Recommendation:** Not to draft short list.  
**Rationale:** The site is beyond the search distance from the river. |
| C29XQ  | Allotments and playground off Ronald Road and car park behind flats on Davonport Street | **Recommendation:** Not to draft short list.  
**Rationale:** The site is too narrow and restrictive. The engineering connection to the sewer would be long and difficult. |
S.2.8 Of the 14 sites identified, four were assessed as potentially suitable and passed to the draft short list, and ten were eliminated as unsuitable.

**Assessment of draft short list sites**

S.2.9 The four draft short list sites identified for further assessment at the next stage were:

- a. C29XA: King Edward Memorial Park Foreshore
- b. C29XB: King Edward Memorial Park
- c. C29XG: Gordon House grounds and car park off Glamis Road
- d. C29XH: Adventure playground and allotments off Glamis Road.

S.2.10 These sites were further assessed by the engineering, planning, environment, community and property disciplines, having regard to the considerations set out in Table 2.3 of the *Site selection methodology paper* (hereafter referred to as Table 2.3). This stage of the process built on the information gathered and assessment undertaken at long list stage but focussed on more detailed local considerations.

S.2.11 At this stage, we consulted with each of the London local authorities along the preferred route and pan-London stakeholders, such as the Environment Agency and English Heritage, to seek their views on the suitability of the sites for the short list.

S.2.12 Table S.3 below summarises the outcome of the Table 2.3 assessment of the draft short list of sites. Sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the short list to pass to the next stage of assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Sites that were judged to be more constrained were not retained on the short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised below.

**Table S.3 Draft short list to final short list for the interception of the North East Storm Relief CSO (Table 2.3 assessment)**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C29XA</td>
<td>King Edward Memorial Park Foreshore</td>
<td><strong>Recommendation:</strong> Retain on short list.</td>
</tr>
<tr>
<td>C29XB</td>
<td>King Edward Memorial Park</td>
<td><strong>Recommendation:</strong> Retain on short list.</td>
</tr>
<tr>
<td>C29XG</td>
<td>Gordon House grounds and car park off Glamis Road</td>
<td><strong>Recommendation:</strong> Not to final short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> Engineering – There were considerable constraints from neighbouring buildings</td>
<td></td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>C29XH</td>
<td>Adventure playground and allotments off Glamis Rd</td>
<td><strong>Recommendation:</strong> Not to final short list.  <strong>Rationale:</strong> Planning/Environment – Use of the site might impact on a number of designations and would result in the loss of a play area. There was also risk of the site becoming unavailable if residential planning permission were implemented. Property – The cost would rise significantly if the residential planning permission were implemented. Community – There would be a loss of a large proportion of the playground and allotments and an effect on residential/sensitive receptors around the site. This would likely impact on community cohesion, health and well-being, and equality groups.</td>
</tr>
</tbody>
</table>

NB. The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

S.2.13 Of the four sites on the draft short list, two were assessed as potentially suitable and passed to the final short list, and two sites did not.

**Assessment of the final short list sites**

S.2.14 The two sites identified for inclusion on the final short list and assessment at the next stage were:
a. C29XA: King Edward Memorial Park Foreshore
b. C29XB: King Edward Memorial Park.

S.2.15 A site suitability report was prepared for the two sites on the final short list. These reports contained an assessment of the suitability of each site, having regard to engineering, planning, environment, community and property considerations. At this stage in the process, sites were assessed in isolation with no comparison to other sites or regard to tunnelling strategy. Sites were evaluated by each discipline, using technical knowledge and professional judgement as appropriate, and assessed as suitable, less suitable or not suitable from that discipline’s perspective.

S.2.16 A summary of the conclusions of each discipline’s assessment from the site suitability reports is provided below:

**C29XA: King Edward Memorial Park Foreshore**

S.2.17 Site C29XA is situated on the foreshore of the River Thames in the London Borough of Tower Hamlets. The site is directly south and adjacent to King Edward Memorial Park.

S.2.18 The park is a well-maintained recreational area and the Thames Path runs through it. The closest residential properties are located in Free Trade Wharf, which is located to the northeast of the site.

**Engineering:** The site was assessed as suitable as a CSO site as it is relatively unrestricted in size and shape, close to the assumed main tunnel alignment and has good road access.

**Planning:** On balance, the site was assessed as less suitable as a site to intercept this CSO. A number of designations related to the site and there are residential dwellings in close proximity, which would require mitigation measures. Access to the site was also likely to be an issue.

**Environment:** Overall, the site was assessed as suitable as a CSO site. The site was considered likely to be suitable from the perspectives of transport, archaeology, built heritage and townscape, hydrogeology and land quality. However, it was considered less suitable from the perspectives of ecology, flood risk, surface water, noise and air quality. Various mitigation measures would be required.

**Socio-economic and community:** The site was assessed as less suitable as a CSO site due to the temporary disruption to the park and the Thames Path, as well as construction impacts on local residences. Views across the river would also be interrupted.

**Property:** Assessed the site as suitable as a CSO site as the acquisition costs were likely to be acceptable provided that we could co-operate with the Port of London Authority (PLA).

**C29XB: King Edward Memorial Park**

S.2.24 Site C29XB is situated within King Edward Memorial Park in the London Borough of Tower Hamlets. To the north of the site is the A1203 and there is housing beyond. To the south of the site is the River Thames, and to the east and west are residential developments.
S.2.25 The park is a well-maintained recreational area and the Thames Path runs through it.

S.2.26 **Engineering:** The site was assessed as *suitable* as a CSO interception site in either the east or the west of the park. It is relatively unrestricted in size and shape, close to the assumed main tunnel alignment and on a TfL Road Network (TLRN) road.

S.2.27 **Planning:** On balance, the site was considered *less suitable* for a CSO interception in either the east or the west of the park. Use of the site would result in a significant loss of open space in an open space deficiency area. The site would also impact on Wapping Hall Conservation Area, the setting of listed structures, and the amenity value of properties.

S.2.28 **Environment:** Overall, the site was assessed as *suitable* as a CSO interception site in either the east or the west of the park. The site was considered likely to be *suitable* from the perspectives of transport, archaeology, hydrogeology, surface water, ecology, flood risk and land quality. However, it was considered *less suitable* from the perspectives of built heritage and townscape, noise and air quality. Various mitigation measures would be required.

S.2.29 **Socio-economic and community:** The site was assessed as *less suitable* as a CSO interception site in either the east or the west of the park. There would be temporary disruption to the park and the Thames Path, as well as construction impacts on local residences. Views across the river would also be interrupted.

S.2.30 **Property:** The site was assessed as *suitable* as a CSO interception site in either the east or the west of the park as the acquisition costs were likely to be acceptable provided that we could co-operate with the landowner (London Borough of Tower Hamlets).

**Phase one consultation preferred site**

S.2.31 Following the completion of the site suitability reports, we held a multidisciplinary workshop to compare the suitability of each of the shortlisted sites based on the site suitability report assessments, and to make a recommendation as to which site should be identified as the preferred site.

S.2.32 Of the two shortlisted sites, **King Edward Memorial Park Foreshore (C29XA) was identified as the preferred site** for the reasons summarised below (in no particular order):

a. On balance, King Edward Memorial Park was considered less suitable to construct a deep shaft as it would require a larger site area than the foreshore, due to the likely impacts on the community from the loss of the majority of the park during the construction period and the resulting conflict with planning policy.

b. We considered that the disadvantages of construction in the foreshore, including the greater cost and increased environmental impact on the river, were outweighed by the loss of amenity to users of the park due to a large construction site area. Vehicular access to
either the foreshore or the park site would require new or improved access routes from either Glamis Road or The Highway. A foreshore site would be less likely to conflict with relevant planning policy.

S.3 Phase two consultation preferred CSO site: Scheme development and site selection

Introduction

S.3.1 Section S.3 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase two consultation.

S.3.2 Following phase one consultation, the site selection process comprised: review of comments from phase one consultation; consideration of any ongoing scheme design and/or any new information received; completion of a back-check exercise to review the sites listed in Section S.2 along with any potential new sites or combinations of sites applying the assessment process outlined in Section S.2.2; consideration of the intermediate sites; comparison of the options to connect the CSO site to the main tunnel; and a multidisciplinary optioneering workshop to identify the preferred CSO site to intercept the North East Storm Relief CSO and connect it to the main tunnel for phase two consultation.

S.3.3 This stage took place from Winter 2010 to Autumn 2011.

S.3.4 The assessments described in Section S.3 were based on the information available at the time and the related stage in the project’s development.

Phase one consultation responses

S.3.5 As part of the site selection methodology, all feedback received during phase one consultation was reviewed and taken into account in the development of our scheme for phase two consultation.

S.3.6 The main issues and concerns raised during phase one consultation in relation to the King Edward Memorial Park Foreshore site are summarised below (in no particular order):

a. question the need for development within a park or the foreshore of the River Thames
b. impacts on the River Thames from construction in foreshore (loss of storage volume and foreshore habitats, changes in currents and scour, navigational and safety concerns)
c. loss of a valuable, multifunctional green space (to provide the access road)
d. impact on residential amenity
e. impact of closure of the Thames Path
f. design of the permanent proposals for the site.

S.3.7 The main comments received in support of the preferred site included:
a. understand the reasons for selecting this site, including that the choice of site is dictated by the location of the North East Storm Relief CSO

b. site is acceptable if the impacts on the Shadwell Outdoor Activity Centre (SOAC) and other river users are minimised

c. site would affect fewer people and reduce disturbance (than the park alternative)

d. site is acceptable if land-take within the park is minimised and suitable access is identified.

S.3.8 More details on the consultation responses relating to this site and our response to the comments received are provided in the Report on phase one consultation.

**Back-check process**

S.3.9 Following phase one consultation, concerns were raised regarding the encroachment into the foreshore of the River Thames at this location and the impact on river flow and navigation. We investigated opportunities to minimise these impacts, balanced with the desire to minimise the temporary loss of open space within the park.

S.3.10 As a result of these factors, and having regard to feedback received during phase one consultation, including that from the Environment Agency, the PLA, the London Borough of Tower Hamlets and Save KEMP, we began a back-check (as defined in the Site selection methodology paper) to review our selection of King Edward Memorial Park Foreshore.

S.3.11 The back-check involved a targeted repeat of each relevant stage of our site selection process and included an investigation to determine whether there were any feasible land-based sites and to reconsider which would be most suitable to intercept the North East Storm Relief CSO. The following section outlines the results of each stage of the back-check process.

**Assessment of the back-check long list**

S.3.12 The original long list sites for the North East Storm Relief CSO comprised 14 sites (see Table S.2). The sites were reviewed along with any new sites identified in the back-checking exercise (i.e., a reassessment to establish whether there had been any changes of circumstances or if any new information had emerged).

S.3.13 All sites on the original long list were put on the back-check long list for this CSO. In addition, the new site C29XR: Council Depot, Sutton Street was added to the back-check long list.

S.3.14 It should be noted that we also considered alternative sites suggested by consultees. However, none of these sites were located within a suitable distance to intercept this CSO.

S.3.15 The back-check long list sites were assessed against the engineering, planning, environment, community and property considerations set out in Table 2.2.

S.3.16 Table S.4 below summarises the outcome of the back-check assessment of the back-check long list of sites. Sites that were assessed as the least
constrained in light of the Table 2.2 considerations passed to the next phase of assessment. This did not necessarily mean that these sites were ultimately judged suitable, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained did not pass to the back-check draft short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table.

Table S.4 Long list to draft short list for the interception of the North East Storm Relief CSO (Table 2.2 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C29XA</td>
<td>King Edward Memorial Park Foreshore</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C29XB</td>
<td>King Edward Memorial Park</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C29XC</td>
<td>Shadwell Sailing Club, Shadwell Pierhead</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The site is too narrow and restrictive. Furthermore, the connection between the drop shaft and the interception chamber would be long and difficult.</td>
</tr>
<tr>
<td>C29XD</td>
<td>Peartree Lane and private gardens of residential flats</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The site is too narrow and restrictive. Furthermore, the connection between the drop shaft and the interception chamber would be long and difficult.</td>
</tr>
<tr>
<td>C29XE</td>
<td>Allotments on Cable Street/Harding Street</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The connection between the drop shaft and the interception chamber would be long and difficult.</td>
</tr>
<tr>
<td>C29XF</td>
<td>St Paul's Church and grounds, The Highway</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The site is very restrictive and with poor access. Furthermore, the connection between the drop shaft and the interception chamber would be long and difficult.</td>
</tr>
<tr>
<td>C29XG</td>
<td>Gordon House grounds and car park off Glamis Road</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C29XH</td>
<td>Adventure playground and allotments off Glamis Road</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>Site ID/Name</td>
<td>Recommendation</td>
<td>Rationale</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>C29XJ Grounds/gardens of flats on Elf Row</td>
<td>Not to draft short list</td>
<td>The site is very restrictive. Furthermore, the connection between the drop shaft and the interception chamber would be long and difficult.</td>
</tr>
<tr>
<td>C29XK The Highway (road adjacent to King Edward Memorial Park)</td>
<td>Not to draft short list</td>
<td>The site would have very restrictive working conditions. Furthermore, there would likely be huge disruption to traffic and permission from TfL is unlikely.</td>
</tr>
<tr>
<td>C29XM Car parking and games areas on Martineau Street</td>
<td>To draft short list</td>
<td></td>
</tr>
<tr>
<td>C29XN Oyster Row (residential street and on plot car park spaces/gardens)</td>
<td>To draft short list</td>
<td></td>
</tr>
<tr>
<td>C29XP School playground</td>
<td>Not to draft short list</td>
<td>The site is an existing school playground and would impact on amenity.</td>
</tr>
<tr>
<td>C29XQ Allotments and playground off Ronald Road and car park behind flats on Davonport Street</td>
<td>Not to draft short list</td>
<td>The site is very narrow and restrictive. Furthermore, the connection between the drop shaft and the interception chamber would be long and difficult.</td>
</tr>
<tr>
<td>C29XR Council Depot, Sutton Street</td>
<td>To draft short list</td>
<td></td>
</tr>
</tbody>
</table>

NB. The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

S.3.17 Of the 15 back-check long list sites, seven were assessed as potentially suitable and passed to the back-check draft short list. Eight sites were eliminated as unsuitable.

Assessment of the back-check draft short list sites

S.3.18 The seven back-check draft shortlisted sites were further assessed by the engineering, planning, environment, community and property disciplines, having regard to the considerations set out in Table 2.3 of the Site selection methodology paper.

S.3.19 Table S.5 below summarises the outcome of the back-check assessment of the draft short list of sites. Sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the back-check short list to pass to the next stage of assessment. This did not
necessarily mean that a site was ultimately judged suitable, but rather that
no significant constraints were identified in relation to the considerations
set out in Table 2.3. Sites that were judged to be more constrained were
not retained on the back-check short list for more detailed assessment.

S.3.20 The main rationale for excluding these sites at this stage is summarised
below.

Table S.5 Draft short list to final short list for the interception of the North East
Storm Relief CSO (Table 2.3 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C29XA</td>
<td>King Edward Memorial Park Foreshore</td>
<td><strong>Recommendation:</strong> Retain on short list.</td>
</tr>
<tr>
<td>C29XB</td>
<td>King Edward Memorial Park</td>
<td><strong>Recommendation:</strong> Retain on short list.</td>
</tr>
<tr>
<td>C29XG</td>
<td>Gordon House grounds and car park off Glamis Road</td>
<td><strong>Recommendation:</strong> Not to final short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engineering – There were considerable constraints on site features. Furthermore, the connection to the sewer would be difficult as there is little space to accommodate a large and deep interception chamber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Property - Special parliamentary procedures may be needed as the land is owned by the local authority. This might involve extended timescales and result in discretionary purchase claims due to loss of car parking.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Community - There would be a cumulative impact on sensitive receptors, which would likely impact on community cohesion, health and well-being, and equality groups.</td>
</tr>
<tr>
<td>C29XH</td>
<td>Adventure playground and allotments off Glamis Road</td>
<td><strong>Recommendation:</strong> Not to final short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engineering – There were considerable constraints of site features and connection feasibility. There were also constraints on access.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Planning/Environment – Use of the</td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>site would likely impact on a number of designations and result in the loss of a play area. There was a risk that the site would become unavailable if residential planning permission were implemented.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Property – The cost might rise if the playground were replaced and rise significantly if the residential planning permission were implemented.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Community – Concerns regarding the loss of a large proportion of the playground and allotments and the effect on residential/sensitive receptors around the site, which would likely impact on community cohesion, health and well-being, and equality groups.</td>
</tr>
</tbody>
</table>
| C29XM   | Car parking and games areas on Martineau Street | **Recommendation:** Not to final short list.  
**Rationale:**  
- Engineering – A long connection tunnel would be needed. Furthermore, there would be constraints on access due to narrow residential roads.  
- Planning/Environment – It would likely impact on residential receptors in close proximity. Furthermore, there would likely be constraints associated with transport.  
- Property – The site was likely to include special land. Acquisition might require a special parliamentary procedure which could potentially cause delay. The site would also take parking and amenity land away from adjacent residential flats.  
- Community – There would be potential impacts on community cohesion, health and well-being, and equalities groups. The site is surrounded by residential developments. |
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
</table>
| C29XN  | Oyster Row (residential street and on plot car park spaces/gardens) | **Recommendation:** Not to final short list.  
**Rationale:**  
- Engineering – A long connection would be tunnel needed. Furthermore, there were constraints on access due to narrow residential roads.  
- Planning/Environment – There would likely be an impact on residential receptors in close proximity and other transport constraints.  
- Property – The site would likely include special land. Acquisition might require special parliamentary procedure which could cause delay. It would take parking and amenity land away from adjacent residential flats.  
- Community – There would be potential impacts on community cohesion, health and well-being, and equalities groups. The site is surrounded by residential developments. |
| C29XR  | Council Depot, Sutton Street                                  | **Recommendation:** Not to final short list.  
**Rationale:**  
- Engineering – There were considerable constraints on site features. Furthermore, the connection to the sewer would be difficult as there is little space to accommodate a large and deep interception chamber.  
- Property – Special parliamentary procedures might be needed as the land is owned by the local authority. This might involve extended timescales and result in discretionary purchase claims due to the loss of car parking.  
Community – There would be a |
Appendix S – King Edward Memorial Park Foreshore

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>cumulative impact on sensitive receptors, which would likely impact on community cohesion, health and well-being, and equality groups.</td>
</tr>
</tbody>
</table>

NB. The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

S.3.21 Of the seven sites on the back-check draft short list, two were assessed as potentially suitable and passed to the final short list, and five did not.

**Review of the phase one shortlisted sites**

S.3.22 Despite our back-check of the long list of sites for the interception of the North East Storm Relief CSO, our final short list remained the same as at phase one.

S.3.23 We recognised the concerns that were raised regarding navigational issues and the encroachment into the foreshore of the River Thames, and investigated opportunities to minimise this, balanced with the desire to minimise the temporary loss of open space in the park. We investigated alternative site configurations for both sites.

S.3.24 A site suitability report was prepared to assess amended configurations for both sites. A summary of the conclusions is provided below:

**C29XA: King Edward Memorial Park Foreshore**

S.3.25 We altered our proposals in order to reduce the size of the construction site in the foreshore compared to the proposals presented at phase one consultation. The office and welfare buildings would now be located in the depot and hardstanding areas in the western part of the park. The proposed temporary construction access was moved from off The Highway at the eastern edge of the park to Glamis Road. This access would remain once construction works are complete.

S.3.26 **Engineering:** The site was assessed as suitable as a CSO site. It is relatively unrestricted in size and shape, close to the assumed main tunnel alignment and has good road access. However, a cofferdam would be required to provide the working platform and, due to the configuration of the existing outfall, a large connection chamber would be required.

S.3.27 **Planning:** On balance, the site was considered less suitable as a CSO site. The reduction of the worksite in the foreshore (made possible by providing a supporting worksite in the western portion of the park) would reduce the impacts on the Site of Nature Conservation Interest (SNCI) and flood risk policies. However, use of the site would result in the temporary loss of some sport and recreation facilities and a temporary loss of part of the public open space within a deficiency area. In the longer term, however, the foreshore extension would provide a permanent extension to the publicly accessible open space in the park and improve the Thames Path. The foreshore site and support facilities in the park would be in close proximity to residential dwellings and would likely require mitigation in order to protect amenity for local residents.
S.3.28 **Environment:** Overall, the site was assessed as *suitable* as a CSO site. It was considered likely to be *suitable* from the perspectives of transport, archaeology, built heritage and townscape, hydrogeology and land quality. However, it was considered *less suitable* from the perspectives of ecology, flood risk, surface water, air quality and noise. Flood risk, aquatic ecology and surface water impacts were reduced compared to the original layout. Various mitigation measures would be required.

S.3.29 **Socio-economic and community:** The site was assessed as *less suitable* as a CSO site as it would likely impact on residents of Free Trade Wharf, particularly those who live in properties that face and overlook the proposed worksite. The works would also impact on users of the park in a number of ways, including construction impacts and loss of recreational sports pitches where the office and welfare facilities would be located. There would also be impacts on users of the Thames Path and the Shadwell Centre might be disrupted, particularly if their access were compromised.

S.3.30 **Property:** The site was assessed the site as *less suitable* as a CSO site. Acquisition costs were likely to be acceptable if assessed on a diminution in value basis or on the basis of providing temporary replacement land. Use of the site would not displace any businesses or other occupiers. However, the site would impact on public open space and if acquisition could not be agreed and replacement land could not be provided, the order might need to pass through a special parliamentary procedure.

**C29XB: King Edward Memorial Park**

S.3.31 The assessment considered the following site configurations:

a. small CSO site to the east of the park
b. small CSO site to the north of the park
c. small CSO site to the west of the park
d. large CSO site to the west of the park.

S.3.32 The existing road access to the CSO interception location and paved path would be off Glamis Road, which would need to be upgraded.

S.3.33 **Engineering:** This site was *suitable* as a CSO site under all site configurations because it is a large, open, and generally flat area. Reasonable road access to the site to transport excavated material and construction materials could be provided since this site has no river access. No significant demolition would be required. However, the east and northern configurations would likely create traffic management issues associated with the proximity of the access to The Highway.

S.3.34 **Planning:** On balance, the site was considered *less suitable* for all the small CSO site configurations as it would result in a loss of open space within a deficiency area that the council has identified as in need of improvements. The recreational amenity value of the park would also be affected. It was likely that the site would negatively impact on the character of the Wapping Wall Conservation Area and the setting of the listed structures, as well as amenity for adjacent residential properties. It
was likely that these potential impacts would be difficult to mitigate. The extent of the facilities that would be lost (in particular the whole of the multipurpose sports pitches) with the larger site could also be difficult to mitigate.

S.3.35 The site was also considered less suitable as a large CSO site for the same reasons as above, but the impacts were more likely to be significant.

S.3.36 Environment: Overall, the site was assessed as suitable for a CSO interception for all the site configurations. It was considered likely to be suitable from the perspectives of transport, archaeology, water resources (groundwater and surface water), ecology, flood risk and land quality. However, it was considered less suitable from the perspectives of built heritage, townscape, air quality and noise. Various mitigation measures would be required.

S.3.37 Socio-economic and community: The site was assessed as not suitable as a large CSO site. It was likely that the degree of impact on the use of the park for sports activities and other uses of the open space would be difficult to mitigate. The connection culvert would further disrupt the remainder of the park. It was also likely that there would be impacts on surrounding residential properties and the Shadwell Basin Outdoor Activity Centre. The small western CSO site would likely have the same impacts due to the size of the works; therefore the assessment was less suitable.

S.3.38 The small eastern CSO site was considered less suitable from a community impacts perspective, due to the potential impacts on the wildlife area and surrounding residential areas.

S.3.39 The small northern CSO site was less suitable from a community impacts perspective, due to the potential cumulative impacts. It appeared that users of King Edward Memorial Park would be affected by the temporary loss of part of the park and disruption to surrounding areas. Those living to the north and east of the park would likely face a certain level of noise and other forms of disruption from works.

S.3.40 Property: All site configurations were considered less suitable. Although acquisition costs were expected to be acceptable, each option carried an acquisition risk as the sites were likely to be classed as special land. The risk was greater in respect of the large CSO site option, as there would be a significantly greater impact on the park during the construction phase.

Main tunnel intermediate sites

S.3.41 With the options assessed in the back-check for the interception of the North East Storm Relief CSO, we would also require a main tunnel intermediate site to connect the CSO to the main tunnel. This would need to be constructed on the route of the main tunnel. However, in order to reduce encroachment into the foreshore, it would be necessary to move the main tunnel alignment inland.

S.3.42 We reviewed all potential main tunnel intermediate sites identified through our site selection process at phase one in order to investigate a credible
tunnelling strategy (see Annex S.2). We identified six potential sites as follows:

a. S020T: Shadwell Basin
b. S024T: The Highway Trading Centre, Heckford Street
c. S025T: The Highway Business Park, Heckford Street
d. S036T: Limehouse Basin
e. S026T: Cemex and Studio sites
f. S121T: Cable Street (suggested new site).

The sites were assessed having regard to the considerations set out in Table 2.2 and Table 2.3 of the *Site selection methodology paper*. All of the sites passed the Table 2.2 assessment except S024T, which was too small to be considered as a main tunnel intermediate site on its own, so S024T and S025T were combined (hereafter known together as Heckford Street). This was also the case for S121T, which was therefore combined with S026T. The results of the next assessment of all four sites are shown in Table S.6 below.

**Table S.6 Draft short list to final short list for main tunnel intermediate sites to connect the North East Storm Relief CSO to the main tunnel (Table 2.3 assessment)**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>S020T</td>
<td>Shadwell Basin</td>
<td><strong>Recommendation</strong>: To short list.</td>
</tr>
<tr>
<td>S024T</td>
<td>Heckford Street</td>
<td><strong>Recommendation</strong>: To short list.</td>
</tr>
<tr>
<td>S024T with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S025T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S036T</td>
<td>Limehouse Basin</td>
<td><strong>Recommendation</strong>: To short list.</td>
</tr>
<tr>
<td>S026T</td>
<td>Cemex and Studio sites/Cable Street</td>
<td><strong>Recommendation</strong>: Not to short list.</td>
</tr>
<tr>
<td>S026T with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S121T</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Rationale:**

- **Planning/Environment** – There would likely be cumulative impacts on heritage and employment policy designations.
- **Property** – There were difficult and complex property issues due to multiple owners and occupants. This would likely result in significant costs and an increased risk of sites not being available if planning permission for development were granted.
- **Community** – There would likely be impacts on a large number of small businesses on site, which would impact on the local economy. There would be a disproportionate impact on equality groups.
Of the four sites identified, three were assessed as potentially suitable and passed to the short list. One was eliminated as unsuitable.

We prepared site suitability reports in order to assess the three sites. A summary of the conclusions is provided below.

**S020T: Shadwell Basin, Garnet Street**

This site suitability report was reviewed by all disciplines, which resulted in slight changes, which are described below, that did not materially alter the overall thrust of the recommendations for both site options.

Site S020T is located in Wapping in the London Borough of Tower Hamlets. The site is irregular in shape and accessible from Newlands Quay, Maynards Quay, and Wapping Wall. The surrounding area is predominantly residential, and all buildings orientated to overlook the basin.

**Engineering:** Fewer enabling and reinstatement works would be required prior to and following construction therefore an intermediate site was judged to be suitable. However, the site does not have good vehicular access, which is a constraint.

**Planning:** This site was considered not suitable for use as a main tunnel intermediate site. Some UDP planning policies had been superseded by the London Borough of Tower Hamlets Core Strategy. A series of planning designations applies to the site and it was unlikely that mitigation measures would balance the potential cumulative adverse impacts of the proposed construction works on this site.

**Environment:** Overall, the site was considered less suitable as a main tunnel intermediate site. It was considered suitable from the perspectives of archaeology and hydrogeology. However, it was considered less suitable from the perspectives of transport, built heritage and townscape, ecology, flood risk, surface water, noise, air quality and land quality, and further investigation would be required as to whether impacts could be adequately mitigated.

**Socio-economic and community:** The use of the site as a main tunnel intermediate site was considered less suitable from a community impacts perspective as it would likely have a significant detrimental impact on the large number of residents that live in the surrounding residential properties. It was also likely that it would lead to the loss or displacement of the Shadwell Basin Outdoor Activity Centre, which could be difficult to relocate or otherwise mitigate.

**Property:** The site was considered suitable as a main tunnel reception/intermediate site, although it was subject to acquisition risk and potentially high discretionary purchase costs.
Sites S024T and S025T are both accessed from Heckford Street, which adjoins The Highway (A1203) in the London Borough of Tower Hamlets. The sites are roughly rectangular in shape and are currently occupied by commercial buildings, warehouses and offices that are one to two storeys high, with associated parking areas.

**Engineering:** This site was considered less suitable as a main tunnel intermediate site as the impact on third-party assets could be significant. The warehouses within both sites (S024T and S025T) would need to be demolished in order to construct the shaft. The site is a minimum of 100m away from the river and multi-storey residential buildings and the Rotherhithe Tunnel lie between the site and the river.

**Planning:** The sites were considered less suitable as a main tunnel intermediate site. A number of planning designations and policies apply to and adjacent to the Heckford Street sites. Those relating to protection of employment uses, heritage, and residential amenity were of most relevance. There is an existing employment use of the Heckford Street sites and they fall within a local industrial location and a designation to enhance and protect existing uses. The loss of employment facilities without suitable justification and replacement elsewhere in the area would be contrary to planning policy.

The current status of the residential redevelopment proposals was uncertain at this stage; however, we understood that pre-application discussions between the applicant and the council had commenced, and a planning application could be expected in the near future. If this were the case, use of the site for the project could potentially delay the redevelopment and adjust the footprint of the site, which is available for redevelopment.

**Environment:** Overall, the site was considered suitable as a main tunnel intermediate site, although mitigation would be required to enable the use of site. Based on information available at the time, the site was considered suitable from the perspectives of transport, archaeology, built heritage, townscape, water resources, ecology and flood risk, and less suitable from the perspectives of air quality, noise and land quality.

**Socio-economic and community:** This site was considered less suitable as a main tunnel intermediate site from a community impacts perspective, due to the combined number of potential impacts. Foremost among these was the likely loss of several commercial units onsite, which would require the businesses to relocate. This could impact on the livelihoods of owners, operators and employees. Mitigation might involve discussions regarding relocation and/or compensation.

**Property:** The site was considered suitable as a main tunnel intermediate site. Acquisition costs were likely to be significant but acceptable and the site does not include Crown land or special land. However, if planning permission for mainly residential development of both parts of the site were granted, the assessment would change to less suitable. If
permission were granted and implemented prior to acquisition, the assessment would change to **not suitable**.

**S036T: Limehouse Basin**

S.3.60 The site suitability report for this site was reviewed by all disciplines, but none of the recommendations for the main tunnel intermediate site option were materially altered.

S.3.61 Site S036T is located north of Narrow Street in the London Borough of Tower Hamlets. Limehouse Basin hosts a well-used marina with three large pontoons. The basin is accessed from the south via the River Thames, through a swing bridge and lock. The basin is surrounded on all sides by modern, high-rise flats in a series of blocks that are three to twelve storeys high, with habitable rooms and balconies overlooking the basin. In addition, the Cruising Association Members Club is located to the east of the site and a boat keepers’ office to the south. The DLR line runs along the northern boundary of the site behind apartments in Basin Approach.

S.3.62 **Engineering:** This site was considered **not suitable** as a main tunnel intermediate site due to the requirement for extensive enabling and reinstatement works prior to and following construction. The site does not have good vehicular access and a neighbouring building might need to be demolished in order to create sufficient access to the site. There are residential buildings and other third-party assets in close proximity to the site.

S.3.63 **Planning:** This site was considered **not suitable** as a main tunnel intermediate site. Some UDP policies had been superseded by the *London Borough of Tower Hamlets Core Strategy* and some Interim Planning Guidance policies were also relevant. A series of planning designations applied to the site and it was unlikely that any mitigation measures would balance out the cumulative adverse effects of the proposed construction works. Furthermore, an EIA screening opinion for additional moorings for water taxis had been issued, and a planning application to change the use of leisure moorings to residential moorings had been approved. However, there were no significant changes that altered the assessment or conclusion.

S.3.64 **Environment:** Overall, the site was considered to be **less suitable** as an intermediate shaft site. It was considered **suitable** from the perspectives of transport, archaeology and hydrogeology, and **less suitable** from the perspectives of built heritage, townscape, surface water, ecology, flood risk, air quality, noise and land quality.

S.3.65 **Socio-economic and community:** This site was considered **less suitable** as a main tunnel intermediate site, as it appeared that it would have significant impacts on the use of the basin as a marina and the surrounding dense residential development, many of which would be difficult to mitigate. Furthermore, once construction is complete, the need to maintain permanent access and place a concrete structure in the marina would decrease the area of the basin and would likely reduce the number of pontoons available.
S.3.66 **Property:** The site was considered **less suitable** as a main tunnel intermediate site. Disadvantages included the potential that the site was classified as special land, which would require a ministerial procedure in order to acquire it; temporary and permanent disturbance to the marina operations; the potential for high discretionary purchase costs; and the possibility that residential flats might need to be acquired and demolished for the overflow culvert.

**Phase two consultation preferred site**

S.3.67 Following the completion of the back-check process, we held a multidisciplinary workshop to compare the alternatives assessed in the back-check process. This workshop took into account the findings of all the site suitability reports, the implications for the main tunnel drive strategy and the feedback received during phase one consultation.

S.3.68 In order to identify our preferred CSO site, we needed to consider the two shortlisted CSO sites (C29XA and C29XB) and how to connect this CSO to the main tunnel, either directly via a deep shaft in one of the two shortlisted CSO sites (C29XA and C29XB), or via a smaller shaft in one of the sites with a connection tunnel to one of the three shortlisted main tunnel intermediate sites (S020T, S024T/S025T and S036T).

S.3.69 Taking into account the findings of all the site suitability reports, the workshop considered that of the three shortlisted sites, Heckford Street (S024T/S025T) was the most suitable main tunnel intermediate site option. The other two options of Shadwell and Limehouse Basin were discounted as it would be technically challenging to undertake the construction works in a water basin; the sites are surrounded by residential properties; access is poor; there are substantial environmental constraints and the sites are further away from the CSO. The distance to the CSO meant that a longer connection tunnel would be required from one of these sites to the CSO interception in King Edward Memorial Park. All the sites considered are illustrated in Figure S.1.

S.3.70 The next step was to consider these sites in relation to how to connect this CSO to the main tunnel. The preferred site could be identified at this point without regard to the tunnelling section set out in the next section.
**Figure S.1 Preferred site and shortlisted sites to intercept the North East Storm Relief CSO and intermediate sites to connect it to the main tunnel**

**Tunnelling strategy**

S.3.71 We considered how the two shortlisted CSO sites (C29XA and C29XB) could be connected to the main tunnel. We considered two tunnelling options and the alignment of the main tunnel would vary with each option (see Figure S.2):

a. Option 1: The foreshore site (C29XA) is relatively unrestricted in size and could accommodate the CSO interception and a shaft to connect it to the main tunnel on one site. The main tunnel route to Abbey Mills would follow the river at this point and pass beneath a deep drop shaft at this foreshore site.

b. Option 2: The alternative would require a small site in King Edward Memorial Park to create a drop shaft to intercept the CSO, which would be connected to the main tunnel via a short connection tunnel to the drop shaft at the Heckford Street site. The main tunnel alignment would therefore move inland and pass through a deep intermediate main tunnel drop shaft at the Heckford Street site (S024T/S025T).
On the basis of the assessments described above and professional judgement, it was agreed by all disciplines that **C29XA: King Edward Memorial Park Foreshore should remain the phase two consultation preferred site to intercept the North East Storm Relief CSO and connect it to the main tunnel**. This meant that we believed that this should be the preferred site, subject to engagement with stakeholders and further design development to verify this conclusion prior to phase two consultation.

In summary, the C29XA foreshore site was our preferred site for the following reasons (in no particular order):

a. For C29XA, only one site would be needed to intercept the CSO and connect it to the main tunnel as the main tunnel would run under the River Thames, whereas the alternative would require two sites (C29XB and S024T/S025T), the CSO interception would be in the park and require a deep drop shaft at Heckford Street to connect it to the main tunnel. The main tunnel would need to divert inland and an additional shallow connection tunnel would be required between the two sites. Both tunnels would run under a large number of properties, including a number of high rise buildings.

b. Use of C29XA would avoid the direct impact on businesses in Heckford Street and the significant cost of acquiring the site. The owners of the site had held preliminary discussions with the planning authority regarding the possible redevelopment of part of the site with a high-density, mainly residential mixed-use scheme. If planning
permission were granted, the land value and acquisition costs would rise substantially.

c. Although the eastern part of C29XA is close to residential properties at Free Trade Wharf, there are also residential properties in close proximity to the Heckford Street site. There was a correspondingly higher possibility that discretionary purchase costs would be incurred.

d. From the perspective of transport, CO29XA was moderately preferable to the combined C29XB and S024T/S025T option because the latter option would require greater numbers of HGVs and create additional vehicle conflicts on The Highway from vehicles turning into the estate and out of Schoolhouse Lane. We would need to carry out additional highway works at the entrance to the park if we used the existing access near the junction with The Highway. Furthermore, using a foreshore site would maintain opportunities to use the river for transportation of materials.

e. From the perspective of land quality, site CO29AX was slightly preferable to the combined C29XB and S024T/S025T option due to the lesser likelihood of encountering high levels of contamination in underlying soil and groundwater.

S.3.74 The above points were based on the information available at the time and the related stage in the project’s development. The points therefore comprise a historic representation of the process prior to phase two consultation.

Confirmation of the preferred site for phase two consultation

S.3.75 A final preferred sites workshop was held in Summer 2011 to verify the choice of preferred sites and consider any outcomes of further engagement and scheme development. The conclusion reached was that C29XA: King Edward Memorial Park Foreshore should remain the phase two consultation preferred site to intercept the North East Storm Relief CSO.

S.3.76 Phase two consultation provided an opportunity for the public to comment on our revised preferred site and scheme for the project.

S.4 Post phase two consultation: Review of proposed CSO site

Introduction to the review

S.4.1 Section S.4 explains how we implemented the requirement in the Site selection methodology paper to review the scheme following phase two consultation and prior to the Section 48 publicity.

S.4.2 This stage of the site selection process comprised: review of comments from phase two consultation; consideration of any ongoing scheme design and/or new technical information and multidisciplinary workshops to identify the proposed CSO site for Section 48 publicity.
Appendix S – King Edward Memorial Park Foreshore

S.4.3 A plan that shows all the sites considered for the interception of the North East Storm Relief CSO and potential intermediate sites and how they progressed through the site selection process can be found in Annex S.1.

S.4.4 This stage took place from Spring 2012 to Summer 2012.

Summary of phase two consultation responses

S.4.5 Details of the consultation feedback related to this site and our responses are provided in the Report on phase two consultation. We reviewed all phase two consultation comments and took them into account in developing our proposed scheme. The main feedback relevant to site selection can be summarised as follows:

a. opposed to the use of foreshore sites

b. a full explanation has not been given as to why Heckford Street is not a viable alternative

c. the site selection methodology has not been followed and the cheapest, most profitable option has been selected

d. site selection has not incorporated comments and objections from phase one consultation or interim engagement

e. insufficient information has been provided on shortlisted sites

f. site selection should use/prioritise brownfield sites

g. alternative site suggestions included Heckford Street (to be used in conjunction with King Edward Memorial Park); Heckford Street (to be used alone); or another brownfield site.

S.4.6 The main comments received in support of the preferred site included:

a. support for the use of the preferred site which was considered more suitable than any of the shortlisted sites

b. the physical characteristics of the site make it suitable, including opportunity to transport materials by barge

c. use of the site would have limited effects on the local area and community.

S.4.7 We recognised concerns that were raised, including potential impact upon the park and preferences for alternative sites, and we took these into account when developing the project further, including measures which can be put in place to minimise any significant potential impacts.

S.4.8 Due to suggested alternative sites in the eastern section of the main tunnel, we reviewed our tunnelling strategy and prepared a revised Engineering options report (Spring 2012). Our review concluded that potential alternative options would not be feasible, so these remained the same as in the Engineering options report (Summer 2011) prior to the phase two consultation. This also meant there was no change to the North East Storm Relief connection option, so the tunnelling strategy remains the same as it was prior to the phase two consultation (see Volume 1, Section 6.8).
S.4.9 Having taken all comments received during phase two consultation into account, we still believe C29XA: King Edward Memorial Park is the most suitable site to intercept the North East Storm Relief CSO.

**Any changes in circumstances or new information**

S.4.10 The phase two consultation responses did not materially alter the considerations previously taken into account in the site selection process and no significant changes in circumstances or new information were identified.

**Main rationale for the selection of the CSO site for Section 48 publicity**

S.4.11 In summary, C29XA: King Edward Memorial Park Foreshore was identified as the most suitable CSO site for the following reasons (in no particular order):

a. Only one site is needed to intercept the CSO and connect it to the main tunnel. This eliminates the cumulative effects of undertaking construction works at two sites at the same time and would increase construction efficiency.

b. Use of the Heckford Street site (SO24T/SO25T) and the site in King Edward Memorial Park (C29XB) would increase the cost due to the requirement for works in two locations and the construction of a connection tunnel, take longer, cause more disruption to both park users and the local community with 24 hour construction at Heckford Street for the connection tunnel and put more traffic on local roads.

c. The hydraulic and air management requirements for the combined C29XB and SO24T/SO25T option, which would require the construction of a relatively shallow connection tunnel, would be more complex and have increased health and safety risks compared to the single site option.

d. Use of a single site to intercept the CSO and connection to the main tunnel would reduce the size of operational and maintenance arrangements.

e. Use of C29XA would allow the main tunnel to run under the River Thames and not beneath local buildings. There would also be no need for a connection tunnel that would run under numerous properties which would be required for the combined C29XB and SO24T/SO25T option.

f. Use of C29XA on the foreshore would retain opportunities to use the river to transport materials, which would reduce road transport requirements compared to the use of the Heckford Street site.

g. In planning policy terms, King Edward Memorial Park Foreshore was considered the most suitable CSO site. This option would require only one site, which would avoid the combined planning policy implications of two sites. In response to phase two consultation comments, we reduced the site area within designated open space through design development by relocating the construction support and workshops...
off-site. With some reconfiguration, the multi-purpose sports pitches could remain open and usable during the construction works. Furthermore, this option had the planning policy benefit of providing a permanent extension to the publicly accessible open space in the park and the opportunity to enhance the route of the Thames Path through the park.

h. Use of C29XA provides the opportunity to enlarge the area of the park once construction works to intercept the CSO are complete due to the extension into the foreshore. There would also be the opportunity to reinstate recreational facilities and enhance the park on completion of the works.

i. Use of C29XA avoids direct impact on businesses.

j. Use of the Heckford Street site would substantially increase the land acquisition cost relative to use of C29XA, and we expected that displacing the existing business occupiers the Heckford Street site would lead to multiple compensation claims for disturbance and relocation costs.

k. More residential properties would potentially be affected if the Heckford Street site were used due to the close proximity of residential properties to this site.

l. Whilst the potential effects of foreshore sites are recognised, the construction of the tunnel would deliver improvements to river wide and local water quality, which would result in positive effects on river ecology, including habitat improvements and reduce fish kills. We will continue to seek to minimise the effects of our proposals.

S.5 Confirmation of the proposed CSO site for Section 48 publicity

S.5.1 The post phase two consultation review described above in Section S.4 confirmed **C29XA: King Edward Memorial Park as the proposed site to intercept the North East Storm Relief CSO for Section 48 publicity**.

S.5.2 Section 48 publicity provides an opportunity for the public to comment on the proposed sites and the project as a whole. Comments received in response to Section 48 publicity will be reviewed and taken into consideration prior to the submission of the final application.
Annex S.1
Appendix T – Earl Pumping Station

**T.1 Introduction**

T.1.1 This appendix sets out the site selection process that was followed in order to identify the most suitable site to intercept the Earl Pumping Station CSO prior to the following stages of the project: phase one consultation, phase two consultation and Section 48 publicity.

T.1.2 Table T.1 summarises the sites identified as most suitable to intercept the Earl Pumping Station CSO at each phase of the project.

**Table T.1 Summary of the sites identified as most suitable to intercept the Earl Pumping Station CSO at each phase of the project**

<table>
<thead>
<tr>
<th>Phase one consultation site:</th>
<th>Earl Pumping Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase two consultation site:</td>
<td>Earl Pumping Station</td>
</tr>
<tr>
<td>Section 48 publicity:</td>
<td>Earl Pumping Station</td>
</tr>
</tbody>
</table>

T.1.3 This appendix is structured as follows:

a.  Section T.1 provides details of the type of site needed and a brief summary of how the *Site selection methodology paper* was applied at each stage of the project.

b.  Section T.2 provides the details of how we identified our preferred site for phase one consultation.

c.  Section T.3 provides details of details of how we reviewed our preferred site ahead of phase two consultation.

d.  Sections T.4 and T.5 provide details of the post phase two consultation scheme review and confirm the proposed CSO site for Section 48 publicity.

**Type of site**

T.1.4 We need a site to intercept the local combined sewer overflow (CSO), known as the Earl Pumping Station CSO, and connect it to the main tunnel.

**Site selection process**

T.1.5 All of the potential sites were identified in accordance with our *Site selection methodology paper*, which involved a ‘sieving’ approach that commenced with identifying all potentially suitable areas of land (excluding concentrated residential sites and World Heritage Sites). CSO sites also needed to be as close to the existing sewer as practicable; therefore we followed a localised optioneering approach to identify suitable sites. The sites went through increasingly detailed levels of assessment. All the assessments were informed by a multidisciplinary approach that took into...
account engineering, planning, environmental, community and property considerations and professional judgement.

T.1.6 Prior to phase one consultation we applied our multidisciplinary sieving approach to all the assessments outlined in the Site selection methodology paper, which is also briefly outlined below (see Section T.2.2).

T.1.7 Following phase one consultation, we reviewed the sites and decided there was no need to carry out a ‘back-check’ but we did carry out a general review of the preferred and shortlisted sites prior to phase two consultation.

T.1.8 Following phase two consultation, the Site selection methodology paper required a review of the scheme. The review of CSO sites involved re-checking the choices of sites identified as most suitable to intercept each CSO associated with the proposed route and proposed CSO sites for Section 48 publicity.

T.2 Phase one consultation preferred CSO site: Site selection process

Introduction

T.2.1 Section T.2 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase one consultation.

T.2.2 Prior to phase one consultation, the site selection process comprised: identification of sites for inclusion on a long list; assessment of sites on the long list to create a draft short list of sites (Table 2.2); assessment of the draft shortlisted sites to create a final short list of sites (Table 2.3); preparation of detailed site suitability reports for each final shortlisted site; and a multidisciplinary optioneering workshop to identify the preferred CSO site to intercept the Earl Pumping Station CSO for phase one consultation.

T.2.3 This stage took place from Spring 2009 to Summer 2010.

T.2.4 The assessments contained in Section T.2 were based on the information available at the time and the related stage in the project’s development.

Assessment of the long list sites

T.2.5 The long list of potential sites to intercept the Earl Pumping Station CSO was created by conducting a desktop survey of the land in the vicinity of the existing sewer.

T.2.6 In total, 33 sites were included on the long list. These sites were assessed having regard to the high-level considerations set out in Table 2.2 of the Site selection methodology paper (hereafter referred to as Table 2.2) including engineering (site size, site features, access and availability of jetty/wharf), planning and environment (heritage, landscape/townscape, open space and ecological), and community and property (neighbouring
land uses, site use, Special Land/Crown land and acquisition costs) considerations.

T.2.7 Table T.2 below provides a summary of the outcome of the Table 2.2 assessment in respect of the long list of sites considered for the interception of this CSO. Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the draft short list. This did not necessarily mean that these sites were ultimately judged suitable, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained were not retained on the draft short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table below.

Table T.2 Long list to draft short list for the interception of the Earl Pumping Station CSO (Table 2.2 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C31XA</td>
<td>Foreshore</td>
<td>Recommendation: To draft short list.</td>
</tr>
<tr>
<td>C31XB</td>
<td>Parking and seating area in St George’s Square</td>
<td>Recommendation: To draft short list.</td>
</tr>
<tr>
<td>C31XC</td>
<td>Boat yard off Calypso Way</td>
<td>Recommendation: To draft short list.</td>
</tr>
</tbody>
</table>
| C31XD   | Albert House and Deptford Wharf road and residential car parking | Recommendation: Not to draft short list.  
**Rationale:** It would require a long/difficult connection between the drop shaft and interception chamber. |
| C31XE   | Private gardens and car parking | Recommendation: Not to draft short list.  
**Rationale:** It would require a long/difficult connection between the drop shaft and interception chamber and would include residential curtilage. |
| C31XF   | Private gardens and car parking for residential properties on Windsock Close | Recommendation: Not to draft short list.  
**Rationale:** It would include residential curtilage. |
| C31XG   | Marina                | Recommendation: To draft short list |
| C31XH   | Private gardens and car parking for flats on Rope Street and Rainbow Quay | Recommendation: Not to draft short list.  
**Rationale:** The site is very restrictive and would require a long/difficult connection between the drop shaft and interception chamber. |
| C31XJ   | Gardens and car parking of | Recommendation: Not to draft short list |
### Appendix T – Earl Pumping Station

**Volume 5: Eastern site appendices R to W**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>houses on Dunnage Crescent</td>
<td>list. <strong>Rationale:</strong> It would include residential curtilage.</td>
<td></td>
</tr>
<tr>
<td>C31XK</td>
<td>Car parking to factory/office/commercial on Plough Way</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C31XL</td>
<td>Strip of grass open space between C31XK and houses on Kempthorne Road</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> It would require a long/difficult connection between the drop shaft and interception chamber and would include residential curtilage.</td>
</tr>
<tr>
<td>C31XM</td>
<td>Grounds of flats along Grove Street, Kempthorne Road and Cartaret Road</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The site is very restrictive and would require a long/difficult connection between the drop shaft and interception chamber and would include residential curtilage.</td>
</tr>
<tr>
<td>C31XN</td>
<td>Hardstanding/car park serving large factory/warehouse</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C31XP</td>
<td>Gardens for apartments on Rope Street</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The site is very restrictive and would require a long/difficult connection between the drop shaft and interception chamber and would include residential curtilage.</td>
</tr>
<tr>
<td>C31XQ</td>
<td>Gardens for apartments on Rope Street</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The site is very restrictive and would require a long/difficult connection between the drop shaft and interception chamber.</td>
</tr>
<tr>
<td>C31XR</td>
<td>Car park and Rope Street properties (and sailing club)</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The site is too narrow and would require a long/difficult connection between the drop shaft and interception chamber.</td>
</tr>
<tr>
<td>C31XS</td>
<td>Car and boat park for sailing club on Rope Street</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
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</tbody>
</table>
| C31XT   | Car park for residential apartments between Plough Way and Rope Street | **Recommendation**: Not to draft short list.  
**Rationale**: It would require a long/difficult connection between the drop shaft and interception chamber. |
| C31XU   | Car park serving commercial properties off Plough Way | **Recommendation**: To draft short list.  
**Rationale**: It would require a long/difficult connection between drop shaft and interception chamber. |
| C31XV   | Car park for apartments off Plough Way | **Recommendation**: To draft short list. |
| C31XW   | Factory/warehouses accessed via Rainsborough Avenue | **Recommendation**: Not to draft short list.  
**Rationale**: It would impact on high-density employment use. |
| C31XX   | Yeoman Street Industrial Area | **Recommendation**: To draft short list. |
| C31XZ   | Industrial/warehouses | **Recommendation**: To draft short list. |
| C31XY   | Earl Pumping Station | **Recommendation**: To draft short list. |
| C31YA   | Timber yard off Yeoman Street | **Recommendation**: To draft short list. |
| C31YB   | Area of hardstanding for industrial building off Yeoman Street | **Recommendation**: To draft short list. |
| C31YC   | Sub station | **Recommendation**: Not to draft short list.  
**Rationale**: Public infrastructure – electricity substation. The land comprises special land in legislative terms. Acquisition costs were likely to be relatively high. |
| C31YD   | Grounds of flats along Chilton Grove | **Recommendation**: Not to draft short list.  
**Rationale**: It would include residential curtilage. |
| C31YE   | Car park and grounds of flats along Plough Way | **Recommendation**: Not to draft short list.  
**Rationale**: The site is very restrictive and would require a long/difficult... |
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>connection between the drop shaft and interception chamber and would include residential curtilage.</td>
</tr>
<tr>
<td>C31YG</td>
<td>Garden/grounds of flats along Plough Way, Yeoman St and Chilton Grove</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> It would require a long/difficult connection between drop shaft and interception chamber and include residential curtilage.</td>
</tr>
<tr>
<td>C31YK</td>
<td>Waste ground off Plough way</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C31YL</td>
<td>Canal to marina and quayside including Rainbow Quay</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> It would require a long/difficult connection between drop shaft and interception chamber.</td>
</tr>
<tr>
<td>C31YM</td>
<td>Parking at Lightner Close</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The site is very restrictive.</td>
</tr>
</tbody>
</table>

NB. The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

T.2.8 Of the 33 sites identified, 14 were assessed as potentially suitable and passed to the draft short list, and 19 sites were eliminated as unsuitable.

**Assessment of draft short list sites**

T.2.9 The 14 draft short list sites identified for further assessment at the next stage were:

a. C31XA: Foreshore
b. C31XB: Parking and seating area in St George’s Square
c. C31XC: Boat yard off Calypso Way
d. C31XG: Marina
e. C31XK: Car park to factory/office/commercial on Plough Way
f. C31XN: Hardstanding/car park serving large factory/warehouse
g. C31XU: Car park serving commercial properties off Plough Way
h. C31XV: Car park for apartments off Plough Way
i. C31XX: Yeoman Street Industrial Area
j. C31XY: Earl Pumping Station
k. C31XZ: Industrial/warehouses
l. C31YA: Timber Yard off Yeoman Street
m. C31YB: Area of hardstanding for industrial building off Yeoman Street

T.2.10 These sites were further assessed by the engineering, planning, environment, community and property disciplines, having regard to the considerations set out in Table 2.3 of the Site selection methodology paper (hereafter referred to as Table 2.3). This stage of the process built on the information gathered and assessments undertaken at long list stage but focussed on more detailed local considerations.

T.2.11 At this stage, we also consulted with each of the London local authorities along the preferred route and pan-London stakeholders, such as the Environment Agency and English Heritage, to seek their views on the suitability of the sites for the short list.

T.2.12 Table T.3 below summarises the outcome of the Table 2.3 assessment of the draft short list of sites. Sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the short list to pass to the next stage of assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Sites that were judged to be more constrained were not retained on the short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised below.

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C31XA</td>
<td>Foreshore</td>
<td>Recommendation: Retain on short list.</td>
</tr>
<tr>
<td>C31XB</td>
<td>Parking and seating area in St George’s Square</td>
<td>Recommendation: Retain on short list.</td>
</tr>
<tr>
<td>C31XC</td>
<td>Boat yard off Calypso Way</td>
<td>Recommendation: Retain on short list.</td>
</tr>
<tr>
<td>C31XG</td>
<td>Marina</td>
<td>Recommendation: Not to short list. Rationale:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engineering – Considerable constraints on connection feasibility.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Community – The cumulative effect on the marina and adjacent residential properties would likely impact on community cohesion and health and well-being, and disturb the local economy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Property – Overall costs including compensation claims were likely to be significant.</td>
</tr>
<tr>
<td>C31XK</td>
<td>Car park to factory/office/commercial on Plough</td>
<td>Recommendation: Retain on short list.</td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
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<tr>
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</tr>
<tr>
<td></td>
<td></td>
<td><strong>Recommendation</strong>: Not to short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Planning/Environment – A major planning application is pending.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Community – Residential uses on three sides of the site.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Property – Redevelopment values (including residential land) would make costs of acquiring site significant.</td>
</tr>
<tr>
<td>C31XN</td>
<td>Hardstanding/car park serving large factory/warehouse</td>
<td></td>
</tr>
<tr>
<td>C31XU</td>
<td>Car park serving commercial properties off Plough Way</td>
<td></td>
</tr>
<tr>
<td>C31XV</td>
<td>Car park for apartments off Plough Way</td>
<td></td>
</tr>
<tr>
<td>C31XX</td>
<td>Yeoman Street Industrial Area</td>
<td></td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
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<td>---------</td>
<td>---------------------------------------------</td>
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</tr>
<tr>
<td>C31XY</td>
<td>Earl Pumping Station</td>
<td><strong>Recommendation</strong>: Retain on short list.</td>
</tr>
<tr>
<td>C31XZ</td>
<td>Industrial/warehouses</td>
<td><strong>Recommendation</strong>: Retain on short list.</td>
</tr>
<tr>
<td>C31YA</td>
<td>Timber Yard off Yeoman Street</td>
<td><strong>Recommendation</strong>: Not to short list.</td>
</tr>
<tr>
<td>C31XK</td>
<td>Area of hardstanding for industrial building off Yeoman Street</td>
<td><strong>Recommendation</strong>: Not to short list.</td>
</tr>
<tr>
<td>C31YK</td>
<td>Waste ground off Plough Way</td>
<td><strong>Recommendation</strong>: Not to short list.</td>
</tr>
</tbody>
</table>

**Rationale:**
- **Community** – The site is located adjacent to a number of residential properties.
- **Community** – Concern regarding the potential effect on operations of on-site and adjacent businesses that could affect the local economy.
- **Community** – There are a number of sensitive receptors adjacent to the site.
- **Engineering** – Concerns about site dimensions and other constraints.
- **Engineering** – Several engineering constraints including access and shaft level.
- **Engineering** – Relatively narrow site.

**NB.** The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

T.2.13 Of the 14 sites on the draft short list, six were assessed as potentially suitable and passed to the final short list, and eight sites did not. Further details of all the sites shortlisted at this stage of the site selection process can be found in the *Shortlisted sites report*.

**Assessment of the final short list sites**

T.2.14 The six sites identified for inclusion on the final short list and assessment at the next stage were:

- a. C31XA: Foreshore
- b. C31XB: Parking and seating area in St George’s Square
- c. C31XC: Boat yard off Calypso Way
- d. C31XK: Car park to factory/office/commercial on Plough Way
- e. C31XY: Earl Pumping Station
T.2.15 A site suitability report was prepared for each of the final shortlisted sites. These reports contained an assessment of the suitability of each site, having regard to engineering, planning, environment, community and property considerations. At this stage in the process, sites were assessed in isolation with no comparison to other sites or regard to tunnelling strategy. Sites were evaluated by each discipline, using technical knowledge and professional judgement as appropriate, and assessed as suitable, less suitable or not suitable from that discipline’s perspective.

T.2.16 A summary of the conclusions of each discipline’s assessment from the site suitability reports is provided below.

**C31XA: Foreshore**

T.2.17 The site is located on the foreshore, adjacent to a parking and seating area known as St George’s Square. It is roughly square in shape and accessed from Plough Way and Enterprise Way. The site is split between two boroughs: more than half of the area is in the London Borough of Lewisham, and the rest of the site, to the north, is located in the London Borough of Southwark.

T.2.18 **Engineering:** The site was judged suitable as a CSO site as it is an adequate size and has good vehicular access. The site would be in close proximity to the proposed alignment of the tunnel. No demolition would be required except possibly part removal of St George’s Stairs.

T.2.19 **Planning:** The site was considered less suitable for a CSO site as a number of applicable planning and environmental designations restrict the development of the site. Mitigation should reduce any potentially adverse impacts arising from the construction works, but the proximity of residential properties to the worksite and the likely impact on views towards the river made this sight less suitable.

T.2.20 **Environment:** Overall, the site was judged suitable as a CSO site, although mitigation would be required. The site was considered suitable from the perspectives of transport, archaeology, water resources (hydrogeology) and land quality, but was considered less suitable for both site sizes from the perspectives of built heritage and townscape, water resources (surface water), ecology, flood risk, air quality and noise.

T.2.21 **Socio-economic and community:** From a community impacts perspective, this site appeared less suitable as a CSO site. Use of the site appeared likely to lead to the loss of a viewing area that extends into the river, and to result in a significant impact on users of the adjacent Thames Path and residential properties in Deptford Wharf.

T.2.22 **Property:** The site was considered suitable as a CSO site, at an acceptable acquisition costs given that the site is wholly within the foreshore.

**C31XB: St George’s Square**

T.2.23 The site is a parking and seating area known as St George’s Square. It is located on the waterfront in the London Borough of Lewisham, adjoining the boundary with the London Borough of Southwark. It is roughly square in shape and is accessed from Plough Way and Enterprise Way.
T.2.24 **Engineering:** The site was considered **suitable** as a CSO site as it would be an adequate size and has good road access.

T.2.25 **Planning:** On balance, the site was considered **less suitable** as a CSO site. A high level of mitigation could be required to avoid unacceptable impacts, particularly on residential amenity.

T.2.26 **Environment:** The site was judged **suitable** from the perspectives of transport, archaeology, built heritage and townscape, water resources (hydrogeology and surface water) and ecology but **less suitable** from the perspectives of flood risk, air quality, and noise and land quality.

T.2.27 Overall, the site was considered **suitable**, subject to further investigation of whether flood risk, air quality, noise and land quality impacts as well as townscape and hydrogeology impacts could be adequately mitigated.

T.2.28 **Socio-economic and community:** From a community impacts perspective, this site was judged **suitable** as a CSO site, subject to appropriate mitigation measures.

T.2.29 **Property:** The site was considered **suitable** as a CSO site at an acceptable acquisition costs, given that it is a public square. The site was likely to be special land and therefore there was a risk that acquisition might require special parliamentary procedures, which could delay the programme.

**C31XC: Boat Yard off Calypso Way**

T.2.30 The site is a boatyard located in the London Borough of Southwark, known as South Dock Marina boatyard. The site is roughly rectangular in shape, and existing access to the site is from Calypso Way. The nearest residential properties are within approximately ten metres of the site boundary. Approximately 80 per cent of the site is occupied by a boatyard, and a riverside walk runs through the north and east of the site.

T.2.31 **Engineering:** This site was considered **suitable** as a CSO site.

T.2.32 **Planning:** On balance, the site was considered **suitable** as a CSO site. A number of planning designations apply to the site. However, with suitable mitigation, it was considered that the site could be appropriate for use.

T.2.33 **Environment:** Overall, this site was considered **suitable** as a CSO site. The site was **suitable** from the perspectives of transport, archaeology, townscape, water resources (hydrogeology and surface water) and ecology. The site was considered **less suitable** from the perspectives of built heritage, flood risk, air quality, noise and land quality. Overall, the site was considered **suitable**, subject to further investigation of whether built heritage, flood risk, air quality, noise, hydrogeology, and land quality impacts could be adequately mitigated.

T.2.34 **Socio-economic and community:** This site was judged **less suitable** as a CSO site. The use of the site was likely to impact on the use of the boatyard and the people working there. St George’s Square to the south of the site could be affected by increased noise. The local residents adjacent to the west of the site and opposite the site to the south would also likely be affected by noise and visual disturbance.
T.2.35 **Property:** The site was considered *suitable* as a CSO site at an acceptable acquisition cost, as it is a boatyard and car park for the adjacent marina. It was likely that some disturbance would be caused to the marina operations, but as only part of the site would be required for CSO works, the effect should be limited.

**C31XK: Car park to factory/office/commercial on Plough Way**

T.2.36 The site is a car park adjacent to a two-storey commercial building, with access from Plough Way. The site, known as Marine Wharf, is located in the London Borough of Lewisham adjacent to the boundary of the London Borough of Southwark to the north.

T.2.37 **Engineering:** The site was assessed as *suitable* as a CSO site as it has good road access potential.

T.2.38 **Planning:** On balance, the site was considered *suitable* as a CSO site with appropriate mitigation to avoid unacceptable impacts on residential amenity. However, a pending planning application had implications for the use of this site.

T.2.39 **Environment:** Overall, the site was assessed as *suitable* as a CSO site. The site was *suitable* from the perspectives of built heritage and townscape, archaeology, water resources (hydrogeology and surface water), flood risk and ecology. The site was considered *less suitable* from the perspectives of transport, air quality, noise and land quality.

T.2.40 Overall, the site was considered *suitable* as a CSO site, subject to further investigation of whether transport, air quality, noise and land quality impacts, as well as townscape and hydrogeology impacts, could be adequately mitigated.

T.2.41 **Socio-economic and community:** This site was judged *suitable* as a small CSO site, subject to mitigation to reduce impacts on local residents.

T.2.42 **Property:** The site was considered *suitable* as a CSO site at an acceptable acquisition cost, given that it is a car park. It was likely that the provision of, or payment for, alternative parking facilities nearby would be necessary during the project. If redevelopment of the site commenced prior to acquisition, the assessment could change to *not suitable*, depending on the arrangement of the proposed new buildings on the site.

**C31XY/C31XZ: Earl Pumping Station (and Industrial/Warehouses)**

T.2.43 Following further investigations of the Earl Pumping Station site, we concluded that it would not be possible to locate the shaft to intercept the CSO within the boundaries of the site. As well as the above-ground structures, there are numerous underground chambers, culverts and utilities associated with the pumping station that need to remain operational, which precludes the use of an area large enough to sink and construct the size of shaft required. The industrial site to the south (C31XZ) was therefore included in combination with Earl Pumping Station (C31XY).

T.2.44 Sites C31XY and C31XZ are located in the London Borough of Lewisham, adjacent to the boundary with the London Borough of Southwark. Thames
Water's Earl Pumping Station occupies site C31XY, and a number of commercial and industrial warehouse buildings occupy site C31XZ, including a two-storey office building. The sites are bounded to the north by Chilton Grove. To the east, the site is bounded by Yeoman Street.

T.2.45 **Engineering:** This site was considered *suitable* as a CSO site and has good road access.

T.2.46 **Planning:** On balance, the site was considered to be *less suitable* as a CSO site. There are few designations relating to the site and, with suitable mitigation measures, most should not be unacceptably impacted on. However, residential properties are in very close proximity to the site and significant mitigation could be required to avoid unacceptable amenity impacts from noise, vibration, dust and traffic movements.

T.2.47 **Environment:** Overall, the site was potentially *suitable* as a CSO site, although mitigation would be required. The site was *suitable* from the perspectives of transport, archaeology, built heritage and townscape, water resources and ecology. The site was considered *less suitable* from the perspectives of flood risk, air quality, noise and land quality.

T.2.48 **Socio-economic and community:** These sites were judged *less suitable* as a CSO site, due to potential impacts on commercial buildings onsite and adjacent residences. Mitigation could involve discussions regarding compensation and the potential relocation of the businesses as well as minimising noise levels and limiting working hours.

T.2.49 **Property:** The site was considered *suitable* as a CSO site, at an acceptable acquisition cost. Acquisition would result in disturbance costs, but the existing units at the property are relatively small and the compensation was not expected to be substantial.

**Phase one consultation preferred site**

T.2.50 Following the completion of the site suitability reports, we held a multidisciplinary workshop to compare the suitability of each of the shortlisted sites based on the site suitability report assessments, and to make a recommendation as to which site should be identified as the preferred site.

T.2.51 Of the six shortlisted sites, C31XY and C31XZ (Earl Pumping Station including land with industrial/warehouses) was identified as the preferred site for a number of reasons which are summarised in no particular order below:

a. The selection of these two sites to form the preferred site would facilitate the use of the Thames Water-owned site and enable all new CSO assets to be located within an extended Thames Water operational site.

b. The next most suitable alternative to the combined preferred sites was C31XC, Boatyard off Calypso Way. However, relocation of the boatyard business was judged to be problematic.

c. The existing industrial setting of C31XY/C31XZ was considered more appropriate than the other shortlisted sites.
d. C31XY/C31XZ was the only site that allowed CSO interception works and CSO drop shaft works to be contained within one area. Other shortlisted sites would require interception works to be outside of the main working area.

e. The foreshore site, C31XA, was judged suitable in principle, but we preferred to avoid foreshore sites where other viable land-based sites existed due to the increased health and safety risks and construction costs association with working in a river.

C31XY/C31XZ was therefore identified as the preferred site to intercept of flows from the Earl Pumping Station CSO.

T.3 Phase two consultation preferred CSO site: Scheme development and site selection

Introduction

T.3.1 Section T.3 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase two consultation.

T.3.2 Following phase one consultation, the site selection process comprised: a review of comments from phase one consultation; consideration of any ongoing scheme design and/or any new information received; and a multidisciplinary optioneering workshop to identify the preferred CSO site to intercept the Earl Pumping Station CSO for phase two consultation.

T.3.3 This stage took place from Winter 2010 to Autumn 2011.

T.3.4 The assessments contained in Section T.3 were based on the information available at the time and the related stage in the project’s development.

Phase one consultation responses

T.3.5 As part of the site selection methodology, all feedback received during phase one consultation was reviewed and taken into account in the development of our scheme for phase two consultation.

T.3.6 The main issues and concerns raised during phase one consultation in relation to the Earl Pumping Station site (comprising the interception of the local CSO) can be summarised as follows in no particular order:

a. visual appearance of the proposed buildings

b. impact of odour

c. impact of construction on local residents

d. local businesses should be suitably relocated

e. use of land adjoining Earl Pumping Station, which is part of the Plough Way Strategic Site in the London Borough of Lewisham's emerging Core Strategy because it will affect regeneration plans.

T.3.7 The main comments received in support of the preferred site included:

a. uses existing industrial/brownfield land in an industrial area
b. site is partially owned by Thames Water

c. site will limit impact on residents and traffic congestion.

T.3.8 More details on the consultation responses relating to this site and our responses to the comments received are provided in the Report on phase one consultation.

T.3.9 Having taken all comments received into account, we still believed that Earl Pumping Station was the most appropriate site to intercept the Earl Pumping Station CSO.

T.3.10 We recognised the concerns that had been raised, including the impact on the regeneration plans and on residential amenity and took these into account in developing the project further, including measures to minimise any potential impacts. We also investigated the potential to locate the permanent above-ground structures within the site in such a way as to minimise the long-term impact of the works on the potential redevelopment of the area.

T.3.11 The above points were based on the information available at the time and the related stage in the project’s development. The points therefore comprise a historic representation of the process prior to phase two consultation.

Confirmation of the preferred site for phase two consultation

T.3.12 A final preferred sites workshop was held in Summer 2011 to verify the choice of preferred sites and consider any outcomes of further engagement and scheme development. The conclusion reached was that C31XY/C31XZ: Earl Pumping Station including adjacent land should remain the phase two consultation preferred site for the interception of the Earl Pumping Station CSO.

T.3.13 Phase two consultation provided an opportunity for the public to comment on our revised preferred site and scheme for the project.

T.4 Post phase two consultation: Review of CSO sites

Introduction to the review

T.4.1 Section T.4 explains how we implemented the requirement in the Site selection methodology paper to review the scheme following phase two consultation and prior to Section 48 publicity.

T.4.2 This stage of the site selection process comprised: review of comments from phase two consultation; consideration of any ongoing scheme design and/or new technical information; and multidisciplinary workshops and reviews to identify the proposed CSO site for Section 48 publicity.

T.4.3 A plan showing all the sites considered for the interception of the Earl Pumping Station CSO and a review of how they progressed through the site selection process can be found in Annex T.1.

T.4.4 This stage took place from Spring 2012 to Summer 2012.
Summary of phase two consultation responses

T.4.5 Details of the consultation feedback related to this site and our responses are provided in the Report on phase two consultation. We reviewed all phase two consultation comments and took them into account in the development of the proposed scheme. The main feedback relevant to site selection can be summarised as follows:

a. object to the use of the preferred site
b. one of the shortlisted sites, foreshore adjacent to the boat yard and St George’s square, is more suitable
c. site selection needs to be reconsidered
d. alternative site suggestions included a brownfield site in Surrey Quays.

T.4.6 The main comments received in support of the preferred site included:

a. support for the use of the preferred site
b. the preferred site is more suitable than any of the shortlisted sites; it is an industrial site and its use would have limited effects on the local area and community
c. the site is already owned by Thames Water, which will allow Thames Water to make some cost savings.

T.4.7 Having taken all comments received during phase two consultation into account, we still believe C31XY/C31XZ: Earl Pumping Station is the most suitable site to intercept the Earl Pumping Station CSO.

T.4.8 We recognise the concerns that have been raised, including preferences for alternative sites, and will take these into account when developing the project further, including measures which can be put in place to minimise any significant potential impacts.

Any changes in circumstances or new information

T.4.9 The London Borough of Lewisham’s Core Strategy was adopted in June 2011, which included the Strategic Policy for a new mixed-use redevelopment area known as Plough Way, including the pumping station and the current industrial area to the south.

T.4.10 Planning permission was granted for a mixed-use, predominantly residential development immediately to the south of the proposed CSO site on Cannon Wharf in March 2012. Work had also started on the approved mixed-use predominantly residential development on the site known as Marine Wharf opposite the proposed CSO site on Yeoman Street.

T.4.11 Having considered this new information, we still believe C31XY/C31XZ: Earl Pumping Station is the most suitable site to intercept the Earl Pumping Station CSO.
Main rationale for the selection of the CSO site for Section 48 publicity

T.4.12 In summary, Earl Pumping Station was identified as the most suitable CSO site for the following reasons (in no particular order):

a. The selection of these two sites to form the site would make use of the Thames Water-owned site and brownfield land and enable all the new CSO assets to be located in an extended operational Thames Water site. This should minimise cost and health and safety risks.

b. The sites would allow the CSO to be intercepted upstream of the pumping station, which would maximise the volume of flow intercepted and minimise pumping costs for the storm pumping station.

c. There are some planning policy designations that relate to the site and we considered that, with appropriate mitigation measures, that these should not be unacceptably impact on. Further design development for the site has demonstrated that the proposed works could be accommodated so as to minimise the impact on the proposed mixed-use redevelopment of the wider area, in accordance with the Core Strategy policy for the Plough Way Strategic Area.

d. We considered that residential amenities for adjacent residential properties could be protected by implementing appropriate mitigation measures.

e. Part of this site is owned by Thames Water, which reduces the acquisition risk compared to the other shortlisted sites.

T.5 Confirmation of the proposed CSO site for Section 48 publicity

T.5.1 The post phase two consultation review described above confirmed C31XY/C31XZ: Earl Pumping Station as the proposed site for Section 48 publicity to intercept the Earl Pumping Station CSO. This site is on the line of the connection tunnel (to be driven from Greenwich Pumping Station, through Deptford Church Street, through this site, and received at Chambers Wharf, in order to connect these three CSOs to the main tunnel).

T.5.2 Section 48 publicity provides an opportunity for the public to comment on the proposed sites and the project as a whole. Comments received in response to Section 48 publicity will be reviewed and taken into consideration prior to the submission of the final application.
Appendix U – Deptford Church Street (formerly Borthwick Wharf Foreshore)

U.1 Introduction

U.1.1 This appendix sets out the site selection process that was followed in order to identify the most suitable site to intercept the Deptford Storm Relief CSO prior to the following stages of the project: phase one consultation, phase two consultation and Section 48 publicity.

U.1.2 Table U.1 summarises the sites identified as most suitable to intercept the Deptford Storm Relief CSO at each phase of the project.

Table U.1 Summary of the sites identified as most suitable to intercept the Deptford Storm Relief CSO at each phase of the project

<table>
<thead>
<tr>
<th>Phase one consultation site:</th>
<th>Borthwick Wharf Foreshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase two consultation site:</td>
<td>Deptford Church Street</td>
</tr>
<tr>
<td>Section 48 publicity site:</td>
<td>Deptford Church Street</td>
</tr>
</tbody>
</table>

U.1.3 This appendix is structured as follows:

a. Section U.1 provides details of the type of site needed and a brief summary of how the Site selection methodology paper was applied at each stage of the project.

b. Section U.2 provides details of how we identified our preferred site for phase one consultation.

c. Section U.3 provides details of the back-check assessments and reasons why we changed our preferred site for phase two consultation.

d. Sections U.4 and U.5 provide details of the post phase two consultation scheme review and confirm the most suitable CSO site for Section 48 publicity.

Type of site

U.1.4 We need a site to intercept the local combined sewer overflow (CSO), known as the Deptford Storm Relief CSO, and connect it to the main tunnel.

Site selection process

U.1.5 All of the potential sites were identified in accordance with our Site selection methodology paper, which involved a ‘sieving’ approach that commenced with identifying all potentially suitable areas of land (excluding concentrated residential sites and World Heritage Sites). CSO sites also
needed to be as close to the existing sewer as practicable; therefore we followed a localised optioneering approach to identify suitable sites. These sites go through increasingly detailed levels of assessments. All the assessments were informed by a multidisciplinary approach that took into account engineering, planning, environmental, community and property considerations and professional judgement.

U.1.6 Prior to phase one consultation we applied our multidisciplinary sieving approach to all the assessments outlined in the Site selection methodology paper, which is also briefly outlined below (see Section U.2.2).

U.1.7 Following phase one consultation, we reviewed the sites and decided to carry out a ‘back-check’ in order to review the preferred and shortlisted sites prior to phase two consultation. This back-check involved a repeat of each relevant stage of our site selection process to reconsider which site would be the most suitable CSO site. We utilised the same multidisciplinary approach that we followed prior to phase one consultation. The results of the back-check superseded all previous assessments undertaken prior to phase one consultation (set out in B.2), except where noted (see Section U.3.25 to U.3.26).

U.1.8 Following phase two consultation, the Site selection methodology paper required a review of the scheme. The review of CSO sites involved re-checking the choices of sites identified as most suitable to intercept each CSO associated with the proposed route and proposed the CSO sites for Section 48 publicity.

U.2 Phase one consultation preferred CSO site: Site selection process

Introduction

U.2.1 Section U.2 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase one consultation.

U.2.2 Prior to phase one consultation, the site selection process comprised: identification of sites for inclusion on a long list; assessment of sites on the long list to create a draft short list of sites (Table 2.2); assessment of the draft shortlisted sites to create a final short list of sites (Table 2.3); preparation of detailed site suitability reports for each final shortlisted site and a multidisciplinary optioneering workshop to identify the preferred CSO site to intercept the Deptford Storm Relief CSO for phase one consultation.

U.2.3 This stage took place from Spring 2009 to Summer 2010.

U.2.4 The assessments contained in Section U.2 were based on the information available at the time and the related stage in the project’s development. The assessments in this section therefore comprise a historic representation of the process and all of the assessments have been superseded, except for some of site suitability report summaries (also see Section U.3.25 to U.3.26).
Appendix U – Deptford Church Street (formerly Borthwick Wharf Foreshore)

Assessment of the long list sites

U.2.5 The long list of potential sites to intercept the Deptford Storm Relief CSO was created by conducting a desktop survey of the land in the vicinity of the existing sewer.

U.2.6 After an initial group of sites was identified in the vicinity of the CSO, further investigations found that the CSO could also be intercepted further inland near Deptford Creek. Therefore we considered an additional group of sites to intercept the Deptford Storm Relief CSO.

U.2.7 In total, 23 sites were included on the long list. These sites were assessed having regard to the high-level considerations set out in Table 2.2 of the Site selection methodology paper (hereafter referred to as Table 2.2) including engineering (site size, site features, access and availability of jetty/wharf facilities), planning and environment (heritage, landscape/townscape, open space and ecological) and community and property (neighbouring land uses, site use, Special Land/Crown land and acquisition costs) considerations.

U.2.8 Table U.2 below provides a summary of the outcome of the Table 2.2 assessment in respect of the long list of sites considered for the interception of this CSO. Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the draft shortlist. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained were not retained on the draft shortlist for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table below.

Table U.2 Long list to draft short list for the interception of the Deptford Storm Relief CSO (Table 2.2 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C32XA</td>
<td>Borthwick Wharf Foreshore*</td>
<td>Recommendation: To draft short list.</td>
</tr>
<tr>
<td>C32XB</td>
<td>The AHoy Centre*</td>
<td>Recommendation: To draft short list.</td>
</tr>
<tr>
<td>C32XC</td>
<td>Gardens of block of flats fronting Deptford Green*</td>
<td>Recommendation: To draft short list.</td>
</tr>
<tr>
<td>C32XD</td>
<td>Gardens between blocks of flats off Benbow Street*</td>
<td>Recommendation: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rationale: The engineering connection to the sewer would be technically impractical due to the length of the connection.</td>
</tr>
<tr>
<td>C32XE</td>
<td>Parking area to flats fronting Deptford Green*</td>
<td>Recommendation: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rationale: The site is small and very restrictive making it impractical for</td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>C32XF</td>
<td>Parking area for development off Stowage*</td>
<td><strong>Recommendation</strong>: Not to draft short list.  &lt;br&gt;<strong>Rationale</strong>: The engineering connection to the sewer would be long and difficult.</td>
</tr>
<tr>
<td>C32XG</td>
<td>Parking area for development off Basevi Way*</td>
<td><strong>Recommendation</strong>: Not to draft short list.  &lt;br&gt;<strong>Rationale</strong>: The engineering connection to the sewer would be technically impractical due to the length of the connection.</td>
</tr>
<tr>
<td>C32XH</td>
<td>Open area fronting McMillan Street</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XJ</td>
<td>Grounds in front of St Paul’s Church, Deptford Church Street**</td>
<td><strong>Recommendation</strong>: Not to draft short list.  &lt;br&gt;<strong>Rationale</strong>: There are a number of heritage constraints that would restrict proposed development.</td>
</tr>
<tr>
<td>C32XK</td>
<td>Parking area rear of flat off Deptford Church Street/Deptford Church Street*</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XL</td>
<td>Land adjacent to Bronze Street**</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XM</td>
<td>Grounds of Charlotte Turner Primary School off Borthwick Street*</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XN</td>
<td>Gardens fronting flats off Mary Ann Buildings**</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XQ</td>
<td>Gardens fronting Frankham Street**</td>
<td><strong>Recommendation</strong>: Not to draft short list.  &lt;br&gt;<strong>Rationale</strong>: The site includes residential curtilage.</td>
</tr>
<tr>
<td>C32XR</td>
<td>Playground and car park off Frankham Street**</td>
<td><strong>Recommendation</strong>: Not to draft short list.  &lt;br&gt;<strong>Rationale</strong>: The site comprises a playground and parking for a school. The land comprises special land for the purposes of the Acquisition of Land Act 1981 or Crown land. Furthermore, the acquisition costs were likely to be relatively high.</td>
</tr>
<tr>
<td>C32XS</td>
<td>Grass verge and adventure</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
</tbody>
</table>
## Site ID | Site name/description | Recommendation and rationale
--- | --- | ---
 |  | area off Deptford Church Street** |  |
C32XT | Entrance area to Lewisham College** | **Recommendation:** Not to draft short list.  
**Rationale:** There would-be operational impacts on Lewisham College. The land comprises special land for the purposes of the Acquisition of Land Act 1981 or Crown land. Furthermore, the acquisition costs were likely to be relatively high.
C32XU | Industrial area off Creekside** | **Recommendation:** Not to draft short list.  
**Rationale:** The site is restrictive and too narrow.
C32XV | Hardstanding, garage and office off Creekside** | **Recommendation:** Not to draft short list.  
**Rationale:** The site is small and restrictive.
C32XW | Garden areas to flats** | **Recommendation:** Not to draft short list.  
**Rationale:** The site is very restrictive with poor access and the engineering connection to the sewer would be technically impractical due to the length of the connection.
C32XX | Garden area to flats** | **Recommendation:** Not to draft short list.  
**Rationale:** The site is very restrictive with poor access and the engineering connection to the sewer would be technically impractical due to the length of the connection.
C32XY | Garden area and parking to flats** | **Recommendation:** Not to draft short list.  
**Rationale:** The site is very restrictive with poor access and the engineering connection to the sewer would be technically impractical due to the length of the connection.

NB. The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary. Sites marked * are located in the London Borough of Greenwich and sites marked ** are located in the London Borough of Lewisham.
U.2.9 Of the 23 sites identified, nine were assessed as potentially suitable and passed to the draft short list, and 14 sites were eliminated as unsuitable.

**Assessment of draft short list sites**

U.2.10 The nine draft short list sites identified for further assessment at the next stage were:

a. C32XA: Borthwick Wharf Foreshore  
b. C32XB: The AHOY Centre  
c. C32XC: Gardens of block of flats fronting Deptford Green  
d. C32XH: Open area fronting McMillan Street  
e. C32XK: Parking area rear of flat off Deptford Church Street/Deptford Church Street  
f. C32XL: Land adjacent to Bronze Street  
g. C32XM: Grounds of Charlotte Turner Primary School off Borthwick Street  
h. C32XN: Gardens fronting flats off Mary Ann Buildings  
i. C32XS: Grass verge and adventure area off Deptford Church Street.

U.2.11 These sites were further assessed by the engineering, planning, environment, community and property disciplines, having regard to the considerations set out in Table 2.3 of the *Site selection methodology paper* (hereafter referred to as Table 2.3). This stage of the process built on the information gathered and assessments undertaken at long list stage but focussed on more detailed local considerations.

U.2.12 At this stage, we also consulted with each of the London local authorities along the preferred route and pan-London stakeholders, such as the Environment Agency and English Heritage, to seek their views on the suitability of the sites for the short list.

U.2.13 Table U.3 below summarises the outcome of the Table 2.3 assessment of the draft short list of sites. Sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the short list to pass to the next stage of assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Sites that were judged to be more constrained were not retained on the short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised below.

**Table U.3 Draft short list to final short list for the interception of the Deptford Storm Relief CSO (Table 2.3 assessment)**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C32XA</td>
<td>Borthwick Wharf Foreshore*</td>
<td><strong>Recommendation</strong>: Retain on short list.</td>
</tr>
</tbody>
</table>
### Recommendation:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Description</th>
<th>Recommendation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C32XB</td>
<td>The AHoy Centre*</td>
<td></td>
<td>Retain on short list.</td>
<td><strong>Rationale:</strong>&lt;br&gt;- Engineering – Very difficult location for the interception with major electrical services running through the site.</td>
</tr>
<tr>
<td>C32XC</td>
<td>Gardens of block of flats fronting Deptford Green*</td>
<td></td>
<td>Retain on short list.</td>
<td><strong>Rationale:</strong>&lt;br&gt;- Engineering – Very difficult location for the interception with major electrical services running through the site.</td>
</tr>
<tr>
<td>C32XH</td>
<td>Open area fronting McMillan Street</td>
<td></td>
<td>Not to short list.</td>
<td><strong>Rationale:</strong>&lt;br&gt;- Engineering – Very difficult location for the interception with major electrical services running through the site.</td>
</tr>
<tr>
<td>C32XL</td>
<td>Land adjacent to Bronze Street**</td>
<td></td>
<td>Not to short list.</td>
<td><strong>Rationale:</strong>&lt;br&gt;- Engineering – Very difficult location for the interception with major electrical services running through the site.</td>
</tr>
</tbody>
</table>
### C32XM
**Grounds of Charlotte Turner Primary School off Borthwick Street***

**Recommendation:** Not to short list.

**Rationale:**
- **Engineering** – The connection arrangements would be very constrained by lack of space very close to flats.
- **Community** – The site is located within the grounds of a school, so was likely to impact on community cohesion, health and well-being and young people – an equality group.

### C32XN
**Gardens fronting flats off Mary Ann Buildings**

**Recommendation:** Not to short list.

**Rationale:**
- **Engineering** – The engineering connection was likely to be difficult as the large interception chamber would need to be in busy Deptford Church Street and was likely to cause major disruption across the whole road.
- **Planning/Environment** – There would be a cumulative impact on a number of designations including open space, as well as an effect on residential amenity.
- **Community** – There would be impacts on residential properties and community facilities in the area.

### C32XS
**Grass verge and adventure area off Deptford Church Street**

**Recommendation:** Not to short list.

**Rationale:**
- **Planning/Environment** – The London Borough of Lewisham has identified this site in the Deptford Town Centre Regeneration Plan, and its use for the project could interfere with the regeneration objectives for the area.

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**NB.** The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary. Sites marked * are located in the London Borough of Greenwich and sites marked ** are located in the London Borough of Lewisham.

**U.2.14** Of the nine sites on the draft short list, three were assessed as potentially suitable and passed to the final short list, and six sites did not.
Assessment of the final short list sites

U.2.15 The three sites identified for inclusion on the final short list and assessment at the next stage were:

a. C32XA: Borthwick Wharf Foreshore
b. C32XB: The AHOY Centre
c. C32XC: Gardens of block of flats fronting Deptford Green.

U.2.16 A site suitability report was prepared for each of the final shortlisted sites. These reports contained an assessment of the suitability of each site having regard to engineering, planning, environment, community and property considerations. At this stage in the process, sites were assessed in isolation with no comparison to other sites or regard to tunnelling strategy. Sites were evaluated by each discipline using technical knowledge and professional judgement as appropriate and assessed as either suitable, less suitable or not suitable from that discipline’s perspective.

U.2.17 A summary of the conclusions of each discipline’s assessment from the site suitability reports is provided below.

C32XA: Borthwick Wharf Foreshore

U.2.18 Site C32XA is located on the foreshore of the River Thames, adjacent to the AHOY Centre yacht club in the London Borough of Greenwich.

U.2.19 To the southwest of the site is an electrical substation and to the southeast is a residential development.

U.2.20 Engineering: The site was considered suitable as a CSO site as it is an adequate size and in close proximity to the assumed alignment of the main tunnel. However, road access appeared to be restricted and the potential use of the existing jetty and barging movements would need investigation.

U.2.21 Planning: On balance, the site was considered less suitable for a CSO interception site because it is in close proximity to residential properties and there would potentially be conflict with the use of the existing yacht club.

U.2.22 Environment: Overall, the site was assessed as less suitable as a CSO site. It was considered likely to be suitable from the perspectives of archaeology, built heritage and groundwater. However, it was considered less suitable from the perspectives of transport, townscape, surface water, ecology, flood risk, noise, air quality and land quality, and these impacts would require mitigation.

U.2.23 Socio-economic and community: The site was considered less suitable for a CSO interception site due to its potential impacts on the AHOY Centre yacht club and the equalities groups that use it. This centre requires access to the river for its activities, which would be severely disrupted by the proposed works.

U.2.24 Property: The site was considered suitable as a CSO site as the acquisition costs should be low and the site is undeveloped. However, the
land is likely to be Crown land and additional compensation could be needed for the AHOY Centre.

**C32XB: The AHOY Centre**

**U.2.25** Site C32XB is currently occupied by the AHOY Centre yacht club on the waterfront of the River Thames in the London Borough of Greenwich.

**U.2.26** To the northwest of the site is an EDF substation, and to the southeast is a residential development.

**Engineering:** The site was considered **suitable** as a CSO site. However, road access is restricted and there were engineering complexities as a result of the adjacent electricity substation and associated buried cables.

**Planning:** On balance, the site was considered **less suitable** as a CSO site due to a number of planning considerations relating to the site including adjacent residential properties and the loss of the yacht club.

**Environment:** Overall, the site was assessed as **suitable** as a CSO site. The site was considered likely to be **suitable** from the perspectives of archaeology, built heritage and townscape, surface water, ecology and groundwater. However, the site was considered **less suitable** from the perspectives of transport, flood risk, noise, air quality and land quality and these impacts would require mitigation.

**Socio-economic and community:** The site was considered **not suitable** as a CSO site due to the loss of the AHOY Centre and the impacts on the equalities groups that use it. Obtaining a relocation site in the area with access to the river would likely be difficult.

**Property:** The site was considered **less suitable** as a CSO site on the grounds of unacceptable acquisition costs, unless the design could be revised to reduce the impact on the AHOY Centre.

**C32XC: Gardens of block of flats fronting Deptford Green**

**U.2.32** Site C32XC is currently occupied by the communal gardens of an adjacent block of flats that fronts onto Deptford Green in the London Borough of Greenwich. The site also takes up a small area of a primary school

**U.2.33** The site is adjacent to a park to the west, an electricity substation to the north and Benbow Street to the south. The residential flats are situated to the east. A public footpath also crosses the site.

**Engineering:** The site was assessed as **suitable** as a CSO site. However, road access is restricted and there were engineering complexities as a result of the adjacent electricity substation and associated buried cables.

**Planning:** On balance, the site was considered **not suitable** as a CSO site due to a number of planning and environmental designations. Furthermore, the proximity to residential properties and a primary school was likely to be unacceptable.

**Environment:** Overall, the site was assessed as **less suitable** as a CSO site. The site was considered likely to be **suitable** from the perspectives of archaeology, built heritage, hydrogeology, surface water, and ecology and
flood risk. However, the site was considered less suitable from the perspectives of transport, townscape, noise, air quality and land quality, and these impacts would require mitigation.

U.2.37 Socio-economic and community: The site was considered not suitable as a CSO site. The main impact from a community perspective would be the loss of open space during the construction period. Local residents and users of the Thames Path, Twinkle Park and the AHOY Centre would also likely be affected during construction. Furthermore, a primary school was likely to experience disruption throughout the construction period.

U.2.38 Property: The site was considered suitable as a CSO site as it is undeveloped and the acquisition costs should be acceptable. However, a special parliamentary procedure might be needed to acquire it.

Phase one consultation preferred site

U.2.39 Following the completion of the site suitability reports, we held a multidisciplinary workshop to compare the suitability of each of the shortlisted sites based on the site suitability report assessments, and to make a recommendation as to which site should be identified as the preferred site.

U.2.40 Of the three shortlisted sites, Borthwick Wharf Foreshore (C32XA) was identified as the preferred site for a number of reasons which are summarised in no particular order below:

a. Construction access to all three sites would be constrained. Land access to the foreshore site would be from the A200 Creek Road and along Glaisher Street.

b. C32XA has the best potential to provide the required working area. C32XB and C32XC would both be too small to provide an efficient and safe working area for the type of shaft construction envisaged.

c. Use of site C32XB would extend the period that the AHOY Centre would be affected and it would be difficult to provide alternative sailing facilities. The site is also in close proximity to a major high voltage (HV) substation, which would have a number of significant construction implications.

d. There are residential properties, a school and play area close to C32XC, and use would conflict with Greenwich Unitary Development Plan policies. The interception works would be outside of the site and would impact on the local road network and the major HV substation. In addition, the site might require a special parliamentary procedure for acquisition as it is owned by the local authority.

e. While there would likely be impacts from the use of C32XA, including on the AHOY Centre, we considered that the constraints at this site were better able to be addressed and mitigated than at the alternative sites.
Phase two consultation preferred CSO site: Scheme development and site selection

Introduction

U.3.1 Section U.3 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase two consultation.

U.3.2 Following phase one consultation, the site selection process comprised: a review of comments from phase one consultation; consideration of any ongoing scheme design and/or any new information received; completion of a back-check exercise to review the sites listed in Section U.2 along with any potential new sites or a combination of sites, applying the assessment process outlined in U.2.2 and a multidisciplinary optioengineering workshop to identify the preferred CSO site to intercept the Deptford Storm Relief CSO for phase two consultation.

U.3.3 This stage took place from Winter 2010 to Autumn 2011.

U.3.4 The assessments contained in Section U.3 were based on the information available at the time and the related stage in the project’s development.

Phase one consultation responses

U.3.5 As part of the site selection methodology, all feedback received during phase one consultation was reviewed and taken into account in the development of our scheme for phase two consultation.

U.3.6 The main issues and concerns raised during phase one consultation in relation to the Borthwick Wharf Foreshore site can be summarised as follows and listed in no particular order:

- a. impact on residential, visitor and business amenity
- b. Glaisher Street is a private road and not suitable for HGVs
- c. impact on the river wall should be assessed as residents are liable for maintenance
- d. design and visual impact of permanent proposals
- e. avoid using the foreshore where there are viable land-based options.

U.3.7 The main comments received in support of the preferred site included:

- a. support use of the site because it is under-used, would have fewer impacts on local residents than the alternatives and offers opportunities for river transport
- b. after-use proposals are appropriate, particularly given their requirements.

U.3.8 Full details of the consultation responses relating to this site are provided in the Report on phase one consultation.
Back-check process

U.3.9 Following phase one consultation we carried out more technical studies, which suggested that the use of our preferred site at Borthwick Wharf Foreshore might not be the best solution. We considered factors such as the difficult site access along a private road that was not designed to carry construction traffic and, in this particular location, the construction constraints from the close proximity of the existing wharf jetty and sewer outfall at the bottom of the boat ramp used by the AHOY Centre.

U.3.10 As a result of these factors, and having regard to the feedback received from the Environment Agency and other feedback from phase one consultation, we began a back-check (as defined in the Site selection methodology paper) to review our selection of Borthwick Wharf Foreshore. This included an investigation to determine whether there were any feasible inland sites situated along the route of the existing CSO that might be more suitable. At the same time, were considered the alignment of the connection tunnel to link the Greenwich Pumping Station and Deptford Storm Relief CSOs to the main tunnel.

U.3.11 The back-check involved a targeted repeat of each relevant stage of our site selection process to reconsider which site would be most suitable for the interception of the Deptford Storm Relief CSO. The following sections outline the results of each stage of the back-check process.

Assessment of the back-check long list

U.3.12 The original long list sites for the Deptford Storm Relief CSO comprised 23 sites (see Table U.2). The sites were reviewed along with any new sites identified in the back-checking exercise (ie, a reassessment to establish whether there had been any changes of circumstances or if any new information had emerged).

U.3.13 All sites on the original long list were put on the back-check long list for this CSO except for site C32XH, which was withdrawn as it was being developed for residential use. In addition, the following new sites were added to the back-check long list:

a. C32XZ: Deptford Church Street
b. C32YA: Paynes and Borthwick Wharves.

U.3.14 It should be noted that we also considered alternative sites suggested by consultees. However, none of these sites were located within a suitable distance to intercept this CSO.

U.3.15 We also rechecked the assessment for the following sites: C32XC and C32XM and documented the technical interception issues related to use of these sites.

U.3.16 The back-check long list sites were assessed against the engineering, planning, environment, community and property considerations set out in Table 2.2 of the Site selection methodology paper.

U.3.17 Table U.4 below summarises the outcome of the back-check assessment of the long list of sites. Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the next phase of
assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained did not pass to the back-check draft short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table below.

Table U.4 Long list to draft short list for the interception of the Deptford Storm Relief CSO (Table 2.2 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C32XA</td>
<td>Borthwick Wharf Foreshore*</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XB</td>
<td>The AHOY Centre*</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XC</td>
<td>Gardens of block of flats fronting Deptford Green*</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: Building the interception chamber might not be feasible due to the large</td>
</tr>
<tr>
<td></td>
<td></td>
<td>number of major electrical cables on top of the existing sewer.</td>
</tr>
<tr>
<td>C32XD</td>
<td>Gardens between blocks of flats off Benbow Street*</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The connection between the drop shaft and interception chamber would be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>long and difficult.</td>
</tr>
<tr>
<td>C32XE</td>
<td>Parking area to flats fronting Deptford Green*</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The site is small and very restrictive.</td>
</tr>
<tr>
<td>C32XF</td>
<td>Parking area for development off Stowage*</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The connection between the drop shaft and interception chamber would be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>long and difficult.</td>
</tr>
<tr>
<td>C32XG</td>
<td>Parking area for development off Basevi Way*</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: The connection between the drop shaft and interception chamber would be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>long and difficult.</td>
</tr>
<tr>
<td>C32XJ</td>
<td>Grounds in front of St Paul’s Church, Deptford Church Street**</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>: There are significant heritage constraints within the site.</td>
</tr>
<tr>
<td>C32XK</td>
<td>Parking area rear of flat off Deptford Church Street/Deptford Church Street*</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XL</td>
<td>Land adjacent to Bronze Street**</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>C32XM</td>
<td>Grounds of Charlotte Turner</td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
</tr>
<tr>
<td>Site ID</td>
<td>Site name/description</td>
<td>Recommendation and rationale</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Primary School off Borthwick Street*</td>
<td><strong>Rationale:</strong> Building the interception chamber might not be feasible due to the large number of major electrical cables on top of the existing sewer.</td>
</tr>
<tr>
<td>C32XN</td>
<td>Gardens fronting flats off Mary Ann Buildings**</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C32XP</td>
<td>Car park to sports complex off Resolution Way**</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> The connection between the drop shaft and interception chamber would be long and difficult.</td>
<td></td>
</tr>
<tr>
<td>C32XQ</td>
<td>Gardens fronting Frankham Street**</td>
<td><strong>Recommendation:</strong> Not to draft shortlist</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> The site is located within residential curtilage.</td>
<td></td>
</tr>
<tr>
<td>C32XR</td>
<td>Playground and car park off Frankham Street**</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> The site is a playground and parking for a school.</td>
<td></td>
</tr>
<tr>
<td>C32XS</td>
<td>Grass verge and adventure area off Deptford Church Street**</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C32XT</td>
<td>Entrance area to Lewisham College**</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> There would be an operational impact on Lewisham College.</td>
<td></td>
</tr>
<tr>
<td>C32XV</td>
<td>Hardstanding, garage and office off Creekside**</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> The site is too narrow and very restrictive.</td>
<td></td>
</tr>
<tr>
<td>C32XW</td>
<td>Garden areas to flats**</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> The connection between the drop shaft and interception chamber would be long and difficult. Furthermore, the site is very restrictive and access is poor.</td>
<td></td>
</tr>
<tr>
<td>C32XX</td>
<td>Garden area to flats**</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> The connection between the drop shaft and interception chamber would be long and difficult. Furthermore, the site is very restrictive and access is poor.</td>
<td></td>
</tr>
<tr>
<td>C32XY</td>
<td>Garden area and parking to flats**</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Rationale:</strong> The connection between the drop shaft and interception chamber would be long and difficult. Furthermore, the site is very restrictive and access is poor.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix U – Deptford Church Street (formerly Borthwick Wharf Foreshore)

Section 48: Report on site selection process
Volume 5: Eastern site appendices R to W

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name:description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C32XZ</td>
<td>Deptford Church Street**</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C32YA</td>
<td>Paynes and Borthwick Wharves*</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
</tbody>
</table>

NB. The Site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary. Sites marked * are located in the London Borough of Greenwich and sites marked ** are located in the London Borough of Lewisham.

U.3.18 Of the 24 sites identified, eight were assessed as potentially suitable and passed to the draft short list, and 16 sites were eliminated as unsuitable.

Assessment of the back-check draft short list sites

U.3.19 The eight back-check draft shortlisted sites were further assessed by the engineering, planning, environment, community and property disciplines, having regard to the considerations set out in Table 2.3 of the Site selection methodology paper.

U.3.20 Table U.5 below summarises the outcome of the back-check assessment of the draft short list of sites. Sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the back-check short list to pass to the next stage of assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Sites that were judged to be more constrained were not retained on the back-check short list for more detailed assessment.

U.3.21 The main rationale for excluding these sites at this stage is summarised below.

Table U.5 Draft short list to final short list for the interception of the Deptford Storm Relief CSO (Table 2.3 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C32XA</td>
<td>Borthwick Wharf Foreshore*</td>
<td><strong>Recommendation:</strong> Retain on short list</td>
</tr>
</tbody>
</table>
| C32XB   | The AHoy Centre*        | **Recommendation:** Not to short list. **Rationale:**
  - Engineering – There were constraints on general access, site features and size. There were also considerable constraints on connection feasibility.
  - Community – Concerned about the overall community impact. The AHoy Centre aims to help disabled and disadvantaged youths, and there would
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
</table>
| C32XK   | Parking area rear of flat off Deptford Church Street/Deptford Church Street*            | **Recommendation:** Not to short list.  
**Rationale:**  
- Engineering – Difficult connection as the large interception chamber would need to be in busy Deptford Church Street and likely to cause major disruption.  
- Planning/Environment – Cumulative impact on a number of designations, loss of parking, as well as the effect on residential amenity and disruption to Deptford Church Street.  
- Community – Main concern is the impact on sensitive receptors and the effect on residential amenity. The likely loss of parking could be an equalities issue. |
| C32XL   | Land adjacent to Bronze Street**                                                       | **Recommendation:** Retain on short list.                                                                 |
| C32XN   | Gardens fronting flats off Mary Ann Buildings**                                       | **Recommendation:** Not to short list.  
**Rationale:**  
- Engineering – Difficult interception and some constraints from the narrow site.  
- Planning/Environment – Cumulative impact on a number of designations including open space, as well as the effect on residential amenity. Could cause some disruption to Deptford Church Street, but less so than sites on the other side of the road.  
- Community – Main concern is the impact on a number of sensitive receptors adjacent to the site including a church and the effect on residential amenity. |
| C32XS   | Grass verge and adventure area off Deptford Church Street**                           | **Recommendation:** Not to short list.  
**Rationale:**  
- Engineering – Difficult connection as the large interception chamber would need to be in busy Deptford Church Street close to the roundabout, which could make single lane in each direction. |
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>difficult to maintain.</td>
<td>• Planning/Environment – Cumulative impact on a number of designations and the potential effect on school/residential amenity, but could be possible to mitigate. The local authority might oppose any significant closure of Deptford Church Street.</td>
</tr>
<tr>
<td></td>
<td>• Property – Site could be possible, but disruption to a major road is not ideal.</td>
<td></td>
</tr>
<tr>
<td>C32XZ</td>
<td>Deptford Church Street**</td>
<td>• Community – Main concern is the impact on sensitive receptors (school and residential amenity) and likely loss of parking could be an equalities issue.</td>
</tr>
<tr>
<td>C32YA</td>
<td>Paynes and Borthwick Wharves*</td>
<td><strong>Recommendation</strong>: Retain on short list.</td>
</tr>
<tr>
<td></td>
<td><strong>Recommendation</strong>: Not to draft short list.</td>
<td><strong>Rationale</strong>:</td>
</tr>
<tr>
<td></td>
<td>• Engineering – Constraints working in the river, site features (including listed structures on the site), shaft level, connection to the interception chamber and general site access.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Planning/Environment – Extant planning permission for mixed use residential redevelopment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Property – If development commences, the site might no longer be available. Acquisition costs were likely to be significant.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Community – Park and primary school are located to the south of the site could affect community cohesion, the health and well-being of the local community and disproportionately impact on young people in the area.</td>
<td></td>
</tr>
</tbody>
</table>

**NB.** The Site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary. Sites marked * are located in the London Borough of Greenwich and sites marked ** are located in the London Borough of Lewisham.

**U.3.22** Of the eight sites on the back-check draft short list, three were assessed as potentially suitable and passed to the final short list, and five sites did not.

**Assessment of the back-check final short list sites**

**U.3.23** The three back-check final shortlisted sites identified for assessment at the next stage were:
Appendix U – Deptford Church Street (formerly Borthwick Wharf Foreshore)

a. C32XA: Borthwick Wharf Foreshore (phase one consultation preferred site)
b. C32XL: Land adjacent to Bronze Street
c. C32XZ: Deptford Church Street.

U.3.24 A site suitability report was prepared for the new back-check final short list sites and the site suitability report for the phase one shortlisted site was re-evaluated.

C32XA: Borthwick Wharf Foreshore

U.3.25 All discipline recommendations remained unchanged except for engineering. Further technical investigations found that the vehicular access route to the site was very restricted and difficult for HGVs to use. Although using barges to transport material could help to reduce potential effects, lorries would still need to transport some materials to and from the site. Furthermore, the use of barges at this site would be complicated by the existing jetty and could conflict with other river users in this area. Having reviewed the site suitability report in light of this new information, engineering changed its recommendation to less suitable.

U.3.26 Property also noted that some road access would be needed therefore there would be a need to acquire vehicular access rights over private estate roads. Although property did not change their suitable recommendation, this element created more risks.

C32XL: Land adjacent to Bronze Street

U.3.27 Site C32XL is public open space located in the London Borough of Lewisham. The site is adjacent to the St Paul’s Conservation Area and there are a number of listed buildings and structures in the vicinity.

U.3.28 The site is bounded by three roads with residential properties to the south, and a church and primary school to the west. A railway line also runs to the south of the site.

U.3.29 The original assessment was based on the premise that the sewer to be intercepted was located in the central reservation of Deptford Church Street, which would likely require the complete closure of Deptford Church Street to undertake the interception works. Further detailed information on the location of the sewer suggested that it is located on the western side of Deptford Church Street. As the site is on the eastern side, the phased lane closures that would be necessary to connect the sewer to the site would have to move across the full width of the road.

U.3.30 Engineering: The site was assessed as suitable as a CSO interception site. As the existing sewer is located on the western side of Deptford Church Street and the site is on the eastern side, the phased lane closures that would be necessary to connect the sewer to the site would have to move across the full width of the road.

U.3.31 Planning: On balance, the site was considered less suitable as a CSO site. A number of sensitive planning designations related to this site: proximity to residential properties, the loss of open space and a Site of Importance for Nature Conservation, and a conservation area with the
Grade I listed St Paul’s Church are some of the most significant ones and it could be difficult to adequately mitigate them all.

U.3.32 **Environment:** Overall, the site was assessed as **less suitable** as a CSO site. The site was considered likely to be **suitable** from the perspectives of archaeology, built heritage, water resources (surface water), flood risk, and land quality. However, the site was considered **less suitable** from the perspectives of transport, townscape, water resources (hydrogeology), ecology, air quality and noise, and these impacts would require mitigation.

U.3.33 **Socio-economic and community:** The site was considered **less suitable** as a CSO site. Use of the site could result in temporary loss of open space which could have value for the local community. Construction works would also likely cause noise and visual disruption to surrounding residents and a children’s play area. The need to work in the carriageway of Deptford Church Street also appeared likely to impact on traffic flow in the area, which could affect local residents.

U.3.34 **Property:** The site was considered **suitable** as a CSO site as the acquisition costs were likely to be acceptable if assessed on a diminution in value basis, or on the basis of providing temporary replacement land. However, if acquisition could not be agreed and replacement land could not be provided, the order might need a special parliamentary procedure.

**C32XZ: Deptford Church Street**

U.3.35 Site C32XZ is public open space located in the London Borough of Lewisham. The site is within the St Paul’s Conservation Area and adjacent to listed buildings and structures in the vicinity.

U.3.36 The site is bounded by Deptford Church Street (A2209) to the east, Coffey Street to the north and Crossfield Street to the south. Residential properties are located to the east on the opposite side of Deptford Church Street, and a school is located to the southwest.

U.3.37 **Engineering:** The site was assessed as **suitable** as a CSO site as it is close to the existing storm relief sewer and has access to Deptford Church Street.

U.3.38 **Planning:** On balance, the site was considered **less suitable** as a CSO site because there are a number of sensitive planning designations and policy constraints relating to this site. The site is within a conservation area and close to a number of listed buildings. It is within designated open space and a nature conservation site of local importance. Construction activities and permanent after-use structures would need to be sensitively designed and mitigated so as to avoid conflict with policy.

U.3.39 **Environment:** Overall, the site was assessed as **less suitable** as a CSO site. The site was considered likely to be **suitable** from the perspectives of archaeology, flood risk, surface water resources, noise and land quality. However, the site was considered **less suitable** from the perspectives of transport, built heritage, townscape, hydrogeology, ecology and air quality, and these impacts would require mitigation.

U.3.40 **Socio-economic and community:** The site was considered **less suitable** as a CSO site. Use of the site would result in the temporary loss of an
area of open space, which could have value for the local community. It also appeared likely that there would-be some noise and visual disruption to St Paul’s Church and St Joseph’s Catholic Primary School, although the potential to impact on the surrounding residential properties appeared limited.

U.3.41 **Property:** The site was considered suitable as a CSO site as the site acquisition costs would likely be acceptable if assessed on a diminution in value basis, or on the basis of providing temporary replacement land. However, if acquisition could not be agreed and replacement land could not be provided, the order might need a special parliamentary procedure.

**Phase two consultation preferred site**

U.3.42 Following the completion of the back-check process, we held a multidisciplinary workshop to compare the originally preferred site (Borthwick Wharf Foreshore) with the new sites identified via the back-check.

U.3.43 This workshop took into account the findings of all the site suitability reports and the feedback received during phase one consultation. On the basis of the assessments described above and professional judgement, it was agreed by all disciplines that **Deptford Church Street (C32XZ) should become the phase two consultation preferred site for the interception of the Deptford Storm Relief CSO.** This means that we believed it to be the most appropriate site, subject to further engagement with stakeholders and further design development to verify this conclusion prior to phase two consultation.

U.3.44 In summary, Deptford Church Street (C32XZ) was identified as the most suitable site for the following reasons (in no particular order):

a. It has much better access for construction vehicles than Borthwick Wharf Foreshore and is close to the existing CSO where the interception could be made without working in the river.

b. Unlike C32XA, there would be no encroachment into the River Thames as Deptford Church Street is a land-based site and the Environment Agency favours the use of land-based sites where viable.

U.3.45 The above points were based on the information available at the time and the related stage in the project’s development. The points therefore comprise a historic representation of the process prior to phase two consultation.

**Confirmation of the preferred site for phase two consultation**

U.3.46 A final preferred sites workshop was held in Summer 2011 to verify the choice of preferred sites and consider any outcomes of further engagement and scheme development. The conclusion reached was that **Deptford Church Street should become the phase two consultation preferred site for the interception of the Deptford Storm Relief CSO.**

U.3.47 Phase two consultation provided an opportunity for the public to comment on our revised preferred site and scheme for the project.
U.4 Post phase two consultation: Review of CSO site

Introduction to the review

U.4.1 Section U.4 explains how we implemented the requirement in the *Site selection methodology paper* to review the scheme following phase two consultation and prior to Section 48 publicity.

U.4.2 This stage of the site selection process comprised: a review of comments from phase two consultation; consideration of any ongoing scheme design and/or new technical information and multidisciplinary workshops and reviews to identify the proposed CSO site for Section 48 publicity.

U.4.3 A plan showing all the sites considered for the interception of the Deptford Storm Relief CSO and how they progressed through the site selection process can be found in Annex U.1.

U.4.4 This stage took place from Spring 2012 to Summer 2012.

Summary of phase two consultation responses

U.4.5 Details of the consultation feedback related to this site and our responses are provided in the *Report on phase two consultation*. We reviewed all phase two consultation comments and took them into account in the development of the proposed scheme. The main feedback relevant to site selection can be summarised as follows:

a. object to the use of the preferred site as it is considered generally unsuitable

b. the reasons for selecting the site are poorly justified/flawed as are the reasons for changing the preferred site since phase one consultation

c. site selection should avoid greenfield sites, open space, commercially established areas, sites adjacent to or containing heritage assets, residential and/or densely populated areas

d. the scale of effects on the local area and community resulting from the selection of this site is unacceptable/has not been properly considered

e. alternative site suggestions included Convoys Wharf and Borthwick Wharf Foreshore.

U.4.6 The main comments received in support of the preferred site included:

a. Support for the use of the preferred site for the following reasons (in no particular order):

   i. it will provide an improved public space on completion that should enhance an area in need of regeneration

   ii. the physical characteristics of the site make it suitable, including the distance from residential areas/it is not a residential area and works would have limited effects

   iii. good local road infrastructure and capacity; good road links and site access.
b. New preferred site is more suitable than the site put forward at phase one.

U.4.7 We recognise the concerns that have been raised, including impact upon open space and the local community, and we will take these into account when developing the project further, including measures which can be put in place to minimise any significant potential impacts.

U.4.8 Having taken all comments received during phase two consultation into account, we still believe C32XZ: Deptford Church Street is the most suitable site to intercept the Deptford Storm Relief CSO.

**Any changes in circumstances or new information**

U.4.9 No new information relevant to site selection was raised at phase two consultation or received from other sources, which would lead us to change our conclusion that C32XZ: Deptford Church Street is the most suitable site to intercept the Deptford Storm Relief CSO.

**Main rationale for the selection of the CSO site for Section 48 publicity**

U.4.10 In summary, C32XZ: Deptford Church Street was identified as the most suitable CSO site for the following reasons (in no particular order):

a. It has much better access for construction vehicles than Borthwick Wharf Foreshore and is close to the existing CSO, where the interception could be made without working in the river.

b. It would avoid using another foreshore site (at Borthwick Wharf) and the loss of valued foreshore habitats. The amenity grassland habitats at Deptford Church Street are less valuable ecologically.

c. The use of a terrestrial site eliminates the risks to the flood defences, changes to local current flows and patterns of scour and sedimentation that can be associated with use of foreshore sites.

d. There are relatively few homes in the immediate vicinity of the site, (unlike the alternatives) and there is a busy road in close proximity which leads to relatively high existing background noise levels at these houses during daytime hours.

e. The proposed drop shaft and associated works would require the temporary loss of the designated open space and removal of the unlisted wall. The completed works would be mainly underground, which would allow opportunities to reinstate an enhanced open space in accordance with the adopted planning policies. Further enhancements to the setting of the adjacent listed buildings, particularly the Grade 1 listed St Paul’s Church might also be possible, subject to agreement with the council.

f. While we recognise that the use of this site would have significant effect on sensitive receptors and the transport network and would result in the temporary loss of open space, we consider that we are better able to address and mitigate the effects at Deptford Church Street than the other shortlisted sites.
U.5 Confirmation of the proposed CSO site for Section 48 publicity

U.5.1 The post phase two consultation review described above in Section U.4 confirmed C32XZ: Deptford Church Street as the proposed site for Section 48 publicity to intercept the Deptford Storm Relief CSO.

U.5.2 Section 48 publicity provides an opportunity for the public to comment on the proposed sites and the project as a whole. Comments received in response to Section 48 publicity will be reviewed and taken into consideration prior to submission of the final application.
Annex U.1
Appendix V – Greenwich Pumping Station

V.1 Introduction

V.1.1 This appendix sets out the site selection process that was followed in order to identify the most suitable CSO site and drive strategy for the Greenwich connection tunnel prior to the following stages of the project: phase one consultation, phase two consultation, Section 48 publicity and submission of the application.

V.1.2 Table V.1 summarises the sites identified as most suitable to intercept the Greenwich Pumping Station and the drive strategy for the Greenwich connection tunnel at each phase of the project.

Table V.1 Summary of the sites identified as most suitable to intercept the Greenwich Pumping Station CSO and uses at each phase of the project

<table>
<thead>
<tr>
<th>Phase one consultation site and use:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site:</strong> Greenwich Pumping Station</td>
</tr>
<tr>
<td><strong>Use:</strong> To intercept the Greenwich Pumping Station CSO and receive the Greenwich connection tunnel from King’s Stairs Garden to connect the CSOs at Earl Pumping Station and Borthwick Wharf to the main tunnel.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase two consultation site and use:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site:</strong> Greenwich Pumping Station</td>
</tr>
<tr>
<td><strong>Use:</strong> To intercept the Greenwich Pumping Station CSO and drive the Greenwich connection tunnel to Chambers Wharf to connect the two CSOs at Earl Pumping Station and Deptford Church Street to the main tunnel.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 48 publicity site and use:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site:</strong> Greenwich Pumping Station</td>
</tr>
<tr>
<td><strong>Use:</strong> To intercept the Greenwich Pumping Station CSO and drive the Greenwich connection tunnel to Chambers Wharf to connect the two CSOs at Earl Pumping Station and Deptford Church Street to the main tunnel.</td>
</tr>
</tbody>
</table>

V.1.3 This appendix is structured as follows:

a. Section V.1 provides details of the type of site needed and a brief summary of how the Site selection methodology paper was applied at each stage of the project.

b. Section V.2 provides the details of how we identified our preferred site for phase one consultation.

c. Section V.3 provides details of the back-check assessments and reasons why we changed our preferred site for phase two consultation.

d. Section V.4 and V.5 provide details of the post phase two consultation scheme review to confirm the proposed site for Section 48 publicity.
Type of site

V.1.4 We need a site to intercept the local combined sewer overflow (CSO), known as the Greenwich Pumping Station CSO, and connect it to the main tunnel.

V.1.5 We also needed to identify a series of suitable sites to allow us to build the main tunnel. The main tunnel would transfer the collected overflows to Abbey Mills Pumping Station where they would be transferred via the Lee Tunnel (under construction) to Beckton Sewage Treatment Works.

V.1.6 Larger sites are required where a tunnel boring machine (TBM) would be inserted into the ground (known as main tunnel drive sites). This type of site would need to handle all the materials excavated by the TBM as it constructs that section of the tunnel. Smaller sites are required to remove the TBM from the ground at the end of the tunnel drive (known as main tunnel reception sites). A more detailed description of the different types of site required to construct and operate the project and the size requirements of these sites can be found in the *Site selection background technical paper* (see Volume 2).

V.1.7 Further discussions on tunnelling strategy options for the connection and main tunnels at different stages of the project are set out in Volume 1, Main report (see also cross references in the next section).

Site selection process

V.1.8 The *Site selection methodology paper* recognises the vital complementary relationship between the site selection process and engineering design developments (See Volume 2). Accordingly, as the site selection process progressed it became increasingly important to compare sites against engineering requirements. A fundamental consideration was the need to identify enough sites in the right locations to enable the project to be built.

V.1.9 All of the potential sites were identified in accordance with our *Site selection methodology paper*, which involved a ‘sieving’ approach that commenced with identifying all potentially suitable areas of land (excluding concentrated residential sites and World Heritage Sites). CSO sites also needed to be as close to the existing sewer as practicable; therefore we followed a localised optioneering approach to identify suitable sites. The main tunnel sites went through increasingly detailed levels of assessment. All the assessments were informed by a multidisciplinary approach that took into account engineering, planning, environmental, community and property considerations and professional judgement. All the assessments carried out were based on the information available at the time and the related stage in the project’s development.

V.1.10 Below is a brief summary of how the *Site selection methodology paper* was applied at each stage of the project, with appropriate cross-references to sections in this appendix and to other volumes of this report.

V.1.11 Prior to phase one consultation we applied our multidisciplinary sieving approach to all the assessments outlined in the *Site selection methodology paper*, which is also briefly outlined below (see V.2.2). A summary of all the assessments and the preferred phase one consultation
Appendix V – Greenwich Pumping Station

site and use are presented in Section V.2. In addition, a more detailed discussion of the main and connection tunnelling options and comparisons for all routes and at this stage of the project can be found in Volume 1, Main report, Section 4, 4.9 to 4.13.

V.1.12 Following phase one consultation and prior to phase two consultation, we reviewed comments and decided that Greenwich Pumping Station should remain our preferred CSO interception site. However, due to other changes to the main tunnel sites and tunnelling strategy in the eastern tunnel sections, we decided to carry out a ‘back-check’ on the use of C33XV: Greenwich Pumping Station site (ie, to intercept the CSO, but we reviewed an option to use the site as a connection tunnel drive site and shortlisted intermediate sites that could be used to help construct the connection tunnel. All the results are presented in Section V.3. The results of the back-check superseded all previous assessments undertaken prior to phase one consultation (reported in Section V.2). A more detailed discussion of the main and connection tunnelling options and comparisons at this stage of the project can be found in Volume 1, Main report, Section 6, 6.3 to 6.6 and 6.8.

V.1.13 Following phase two consultation and prior to Section 48 publicity, the Site selection methodology paper required a review of the scheme. The review involved re-checking the most suitable use of Greenwich Pumping Station and the construction of the Greenwich connection tunnel. This was also linked to the review of the eastern tunnelling options for the main tunnel on the proposed route. This review is set outing Section V.4. This was done to confirm the proposed main tunnel site for Section 48 publicity.

V.2 Phase one consultation preferred CSO site: Site selection process

Introduction

V.2.1 Section V.2 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase one consultation.

V.2.2 Prior to phase one consultation, the site selection process comprised: identification of sites for inclusion on a long list; assessment of sites on the long list to create a draft short list of sites (Table 2.2); assessment of the draft shortlisted sites to create a final short list of sites (Table 2.3); preparation of detailed site suitability reports; and a multidisciplinary optioneering workshop to identify the preferred CSO site to intercept the Greenwich Pumping Station CSO at phase one consultation (see also Volume 1, Main Report, Section 4, 4.9 to 4.13 for the pre-phase one consultation discussion on main and connection tunnels related to Greenwich Pumping Station for the three tunnel routes).

V.2.3 This stage took place from Spring 2009 to Summer 2010.

V.2.4 The assessments contained in Section V.2 were based on the information available at the time and the related stage in the project’s development. The assessments in this section therefore comprise a historic
representation of the process and all of the assessments have been superseded (see Section 3).

**Assessment of the long list sites**

V.2.5 The long list of potential sites to intercept the Greenwich Pumping Station CSO was created by conducting a desktop survey of the land in the vicinity of the existing sewer.

V.2.6 In total, 12 sites were included on the long list. These sites were assessed having regard to the high-level considerations set out in Table 2.2 of the *Site selection methodology paper* (hereafter referred to as Table 2.2) including engineering (site size, site features, availability of jetty/wharf and access), planning and environment (heritage, landscape/townscape, open space and ecological), and community and property (neighbouring land uses, site use, Special Land/Crown land and acquisition costs) considerations.

V.2.7 Table V.2 below provides a summary of the outcome of the Table 2.2 assessment in respect of the long list of sites considered for the interception of this CSO. Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the draft short list. This did not necessarily mean these sites were ultimately judged suitable, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained were not retained on the draft short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table below.

### Table V.2 Long list to draft short list for the interception of the Greenwich Pumping Station CSO (Table 2.2 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C33XA</td>
<td>Greenwich Foreshore</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C33XE</td>
<td>Playground</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C33XF</td>
<td>Parking area adjacent Greenwich High Road</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale:</strong> The site is too restrictive.</td>
</tr>
<tr>
<td>C33XG</td>
<td>Parking to small industrial area</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C33XH</td>
<td>Greenwich Pumping Station</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
<tr>
<td>C33XM</td>
<td>Gardens to Queen Elizabeth College</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale:</strong> The site is too narrow and there is insufficient space to accommodate the required construction works. The engineering connection to the sewer would also be long and difficult.</td>
</tr>
<tr>
<td>C33XN</td>
<td>Garden area behind St</td>
<td><strong>Recommendation:</strong> Not to draft short list.</td>
</tr>
</tbody>
</table>
Appendix V – Greenwich Pumping Station

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alfege Church</td>
<td><strong>Rationale:</strong> Access is poor and the engineering connection to the sewer would be long and difficult.</td>
</tr>
<tr>
<td>C33XP</td>
<td>Parking to shops and flats off Greenwich High Road</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The engineering connection to the sewer would be long and difficult.</td>
</tr>
<tr>
<td>C33XR</td>
<td>Parking to flats off Lansdale Road</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The site is too restrictive, with insufficient space to accommodate the required construction works.</td>
</tr>
<tr>
<td>C33XS</td>
<td>Gardens to flats off Greenwich High Street</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The site is very small and restrictive.</td>
</tr>
<tr>
<td>C33XT</td>
<td>Parking to front of Greenwich Station</td>
<td><strong>Recommendation:</strong> Not to draft short list. <strong>Rationale:</strong> The engineering connection to the sewer would be long and difficult.</td>
</tr>
<tr>
<td>C33XU</td>
<td>Greenwich Pumping Station</td>
<td><strong>Recommendation:</strong> To draft short list.</td>
</tr>
</tbody>
</table>

NB. The site ID and site name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

V.2.8 Of the 12 sites identified, five were assessed as potentially suitable and passed to the draft short list, and seven sites were eliminated as unsuitable.

**Assessment of draft short list sites**

V.2.9 The five draft short list sites identified for further assessment at the next stage were:

a. C33XA: Greenwich Foreshore (near the Cutty Sark)
b. C33XE: Playground (off Randall Place)
c. C33XG: Parking to small industrial area
d. C33XH: Greenwich Pumping Station (land in front of the pumping station)
e. C33XU: Greenwich Pumping Station (land in front and to the rear of the pumping station).

V.2.10 These sites were further assessed by the engineering, planning, environment, community and property disciplines having regard to the considerations set out in Table 2.3 of the *Site selection methodology paper* (hereafter referred to as Table 2.3). This stage of the process built on the information gathered and assessments undertaken at long list stage but focussed on more detailed local considerations.

V.2.11 At this stage, we also consulted with each of the London local authorities along the preferred route and pan-London stakeholders, such as the
Environment Agency and English Heritage, to seek their views on the suitability of the sites for the short list.

V.2.12 Table V.3 below summarises the outcome of the Table 2.3 assessment of the draft short list of sites. Sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the short list to pass to the next stage of assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Sites that were judged to be more constrained were not retained on the short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised below.

Table V.3 Draft short list to final short list for the interception of the Greenwich Pumping Station CSO (Table 2.3 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>C33XA</td>
<td>Greenwich Foreshore (near the Cutty Sark)</td>
<td><strong>Recommendation</strong>: Retain on short list.</td>
</tr>
<tr>
<td>C33XE</td>
<td>Playground (off Randall Place)</td>
<td><strong>Recommendation</strong>: Not to short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engineering – The site is constrained in engineering terms by</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the adjacent flats and a culvert would need to run below a busy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>road.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Community – The site is located adjacent to a number of sensitive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>receptors (primary school, playgrounds, surrounded on three sides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>by terraced residential properties).</td>
</tr>
<tr>
<td>C33XG</td>
<td>Parking to small industrial area</td>
<td><strong>Recommendation</strong>: Not to short list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rationale</strong>:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engineering – The site is constrained in engineering terms by</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the adjacent flats and a culvert would need to run below a busy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>road.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Planning/environment – Use of the site would result in a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>significant cumulative impact on a number of designations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Property – Acquisition costs are potentially unacceptable and a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>number of businesses would be disrupted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Community – The site is located adjacent to a number of sensitive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>receptors (primary school, playgrounds, surrounded on three sides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>by terraced residential properties).</td>
</tr>
</tbody>
</table>
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V.2.13 Of the five sites on the draft short list, three were assessed as potentially suitable and passed to the final short list, while two sites did not. Further details of all the sites shortlisted at this stage of the site selection process can be found in the Shortlisted sites report.

Assessment of the final short list sites

V.2.14 The three sites identified for inclusion on the final short list and assessment at the next stage were:

a. C33XA: Greenwich Foreshore (near the Cutty Sark)
b. C33XH: Greenwich Pumping Station (land in front of the Pumping Station)
c. C33XU: Greenwich Pumping Station (land in front of and to the rear of the Pumping Station).

V.2.15 A site suitability report was prepared for each of the final shortlisted sites. These reports contained an assessment of the suitability of each site, having regard to engineering, planning, environment, community and property considerations. At this stage in the process, sites were assessed in isolation with no comparison to other sites or regard to tunnelling strategy. Sites were assessed by discipline as suitable, less suitable or not suitable from that discipline’s perspective.

V.2.16 A summary of the conclusions of each discipline’s assessment from the site suitability reports is provided below.

C33XA: Greenwich Foreshore (near the Cutty Stark)

V.2.17 Site C33XA is located on the River Thames Foreshore, adjacent to Cutty Sark Gardens and Greenwich Pier in the London Borough of Greenwich.

V.2.18 Cutty Sark Gardens are located to the southeast. To the south and southwest of the site lie residential properties, and north of the site is open river. The Thames Path runs adjacent to the site.

V.2.19 Engineering: The site was assessed as suitable as a CSO site because it appeared to be an adequate size and close to the assumed tunnel alignment. Access to and from the site might be difficult and would need further investigation.

V.2.20 Planning: The site was assessed as not suitable to intercept this CSO because it lies within several planning and environmental policy designations, including the World Heritage buffer zone and conservation...
V.2.21 **Environment**: Overall, the site was assessed as **less suitable** as a CSO site. The site was considered likely to be **suitable** from the perspectives of transport, archaeology, hydrogeology and land quality. However, potential mitigation measures to determine whether the route to the site could be made suitable would need to be investigated. The site was considered **less suitable** from the perspectives of built heritage and townscape, surface water resources, ecology, flood risk, noise and air quality.

V.2.22 **Socio-economic and community**: The site was assessed as **less suitable** as a CSO site. Use of the site would have adverse effects on users of the Thames Path and adjacent gardens. Furthermore, there would be cumulative impacts on the adjacent residential developments.

V.2.23 **Property**: The site was considered **suitable** as a CSO site. The site is undeveloped and the acquisition cost was unlikely to be high, although permission from the Crown would need to be sought.

**C33XH: Thames Water Greenwich Pumping Station (land in front of the pumping station)**

V.2.24 Site C33XH is located within the grounds of Greenwich Pumping Station in the London Borough of Greenwich. The site is bounded by the listed sewage pumping station building to the north, with Deptford Creek, the DLR and a railway line beyond.

V.2.25 To the east are a vacant industrial estate and various community and business premises. To the south is Greenwich High Road, which contains a number of residences and business, while to the west are primarily industrial and warehouse buildings.

V.2.26 **Engineering**: The site was assessed as **suitable** as a CSO site because it appeared to be an adequate size and has good road access.

V.2.27 **Planning**: The site was assessed as **suitable** to intercept this CSO because it was consistent with the existing permitted pumping station use. Mitigation measures would be required to reduce impacts on the planning and environmental designations applicable to the site and any adjacent residential dwellings.

V.2.28 **Environment**: Overall, the site was assessed as **suitable** as a CSO site. The site was considered likely to be **suitable** from the perspectives of transport, archaeology, hydrogeology, land quality, surface water resources, ecology, noise quality and flood risk. However, the site was considered **less suitable** from the perspectives of built heritage and townscape, water resources (hydrogeology) and air quality.

V.2.29 **Socio-economic and community**: The site was assessed as **suitable** as a CSO site. Local businesses adjacent to the site, including two public houses and an office building, could be affected by construction related impacts. Mitigation could involve discussions regarding noise attenuation measures.
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V.2.30 **Property:** The site was considered *suitable* as a CSO site as the acquisition cost would be acceptable. A ministerial procedure might be needed to acquire part, or all, of the site, which could cause unacceptable delays to the project. However, it should be noted that Thames Water occupies the site, which should help to avoid any procedural difficulties.

*C33XU: Thames Water Greenwich Pumping Station (land in front of and to the rear of the pumping station)*

V.2.31 Site C33XU is located within the grounds of Greenwich Pumping Station in the London Borough of Greenwich. The site contains the listed sewage pumping station on operational Thames Water land. Norman House is on the eastern edge of the site and Deptford Creek runs along the western edge. The DLR runs through the northern tip of the site and to the south is Greenwich High Street.

V.2.32 **Engineering:** The site was assessed as *suitable* as a CSO site as it appeared to be of sufficient size and has good road access.

V.2.33 **Planning:** The site was assessed as *suitable* to intercept this CSO because it was consistent with the existing permitted pumping station use. Furthermore, the site was relatively unconstrained by planning policies.

V.2.34 **Environment:** Overall, the site was assessed as *suitable* as a CSO site. The site was considered likely to be *suitable* from the perspectives of transport, archaeology, surface water, ecology, flood risk, noise and land quality. However, the site was considered *less suitable* from the perspectives of built heritage and townscape, groundwater and air quality, and these impacts would require mitigation.

V.2.35 **Socio-economic and community:** The site was assessed as *suitable* as a CSO site. The area in proximity to the site is mainly industrial and commercial. It was unlikely that there would be impacts on the nearby business as the DLR line and the sewage pumping station would act as barriers between the site and local businesses.

V.2.36 **Property:** The site was considered *suitable* as a CSO site as the acquisition cost would be acceptable. A ministerial procedure might be needed to acquire part, or all, of the site, which could cause unacceptable delays to the project. However, it should be noted that Thames Water occupies the site, which should help to avoid any procedural difficulties.

**Phase one consultation preferred site**

V.2.37 Following the completion of the site suitability reports, we held a multidisciplinary workshop to compare the suitability of each of the shortlisted sites based on the site suitability report assessments, and to make a recommendation as to which site should be identified as the preferred site.

V.2.38 Of the three shortlisted sites, Greenwich Pumping Station (land in front of and to the rear of the pumping station) (C33XU) was identified as the preferred site for a number of reasons, which are summarised in no particular order below:
a. The foreshore site, C33XA, was considered less suitable compared to the other sites. The site is within the conservation area and adjacent to the World Heritage Site. This is a busy area used by a large number of tourists and has a very high amenity value. A site in this area would likely conflict with a number of Greenwich Unitary Development Plan policies. Residential properties are in close proximity to the site and access would be difficult. The temporary and permanent structures could be difficult to integrate into the foreshore and could impact on the foreshore habitat.

b. In addition to the constraints discussed above for C33XA, we generally preferred to avoid foreshore sites where other viable land-based sites existed due to the increased health and safety risks and construction costs association with working in the river.

c. Therefore, this foreshore site was not preferred over the available and useable Thames Water-owned land-based site.

d. Both pumping station sites (C33XH and C33XU) are owned by Thames Water. C33XH (land in front of Greenwich Pumping Station) is more constrained as it contains significant below-ground works associated with the operation of the pumping station. The pumping station is listed, and placing the works in the grassed area in front of it was judged to have more impact on the setting of the pumping station and some impact on the listed coal sheds.

e. The site at the rear of Greenwich Pumping Station (C33XU) is located between the pumping station and the raised DLR viaduct. This land has fewer underground constraints; therefore there would be less impact on the day-to-day operations of the pumping station. It was judged to have less impact on the listed pumping station than the site at the front (C33XH). Furthermore, the listed coal sheds would be less visible from the site at the rear of the pumping station (C33XU) than the site at the front (C33XH).

V.2.39 C33XU was therefore identified as the preferred site to intercept flows from the Greenwich Pumping Station CSO and receive the connection tunnel from King’s Stairs Gardens.

V.3 Phase two consultation preferred CSO site: Scheme development and site selection

Introduction

V.3.1 Section V.3 explains how the Site selection methodology paper was implemented in order to arrive at the preferred CSO site for phase two consultation.

V.3.2 Following phase one consultation and prior to phase two consultation, the site selection process comprised: a review of comments from phase one consultation; consideration of any ongoing scheme design and/or any new information received; completion of a back-check exercise to review the sites along with any potential new sites or a combination of sites or additional land; application of the assessment process outlined in V.2.2,
including the preparation of a new *Engineering options report* (Summer 2011) with revised tunnelling drive options for the main tunnel and Greenwich connection tunnel; and a multidisciplinary optioneering workshop to consider the detailed contents of the site suitability report for each shortlisted site and the *Engineering options report* and compare shortlisted sites to identify the preferred connection tunnel site and use (drive or reception) for phase two consultation (see also Volume 1, Main report, Sections 6.3 to 6.6 and 6.8 for the pre-phase two consultation discussion on tunnelling drive options).

V.3.3 This stage took place from Winter 2010 to Autumn 2011.

V.3.4 The assessments contained in Section V.3 were based on the information available at the time and the related stage in the project’s development.

**Phase one consultation responses**

V.3.5 As part of the site selection methodology, all feedback received during phase one consultation was reviewed and taken into account in the development of our phase two consultation preferred scheme.

V.3.6 The main issues and concerns raised during phase one consultation in relation to the preferred pumping station site are listed below (in no particular order):

a. odour impacts

b. impacts on existing heritage within the area

c. construction impacts on local residents

d. construction traffic impacts on Greenwich High Road.

V.3.7 The main comment received in support of the preferred site was that it is a suitable choice as it uses land owned by Thames Water.

V.3.8 More details on the consultation responses relating to this site and our responses to the comments received are provided in the *Report on phase one consultation*.

**Back-check process**

V.3.9 Following our review of the feedback received during phase one consultation and other design development, we decided that Greenwich Pumping Station should remain our preferred CSO interception site\(^1\). However, due to other changes to the main tunnel sites and tunnelling strategy for the eastern sections of the tunnel, we needed to investigate the use of C33XV: Greenwich Pumping Station as a connection tunnel drive site.

V.3.10 We also changed our eastern main tunnel site from King’s Stairs Gardens to Chambers Wharf, which became our phase two consultation site (see

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\(^1\) It should be noted the two previous polygons (C33XH and C33XU) were withdrawn. They only covered parts of the Greenwich Pumping Station site and were only big enough for a connection tunnel reception site. A new larger polygon was created for the Greenwich Pumping Station site (C33XV). This covered all of Thames Water’s land plus we needed to add a strip of land between the pumping station site and the railway. More detailed work within the previous polygon C33XU showed that the DLR viaduct constrained the construction area too much.
Appendix R). Chambers Wharf is constrained by size and programme; therefore this site can only support one tunnel drive. Further investigation also found that it would be highly undesirable to drive the main tunnel from Abbey Mills. Therefore, we decided to use Chambers Wharf to drive the main tunnel to Abbey Mills. Due to these limitations, we needed to investigate driving the connection tunnel from Greenwich Pumping Station or an alternative site.

V.3.11 In response to these changes, we undertook a back-check (as defined in our Site selection methodology paper) to assess the sites and connection tunnel drive options. The connection tunnel was needed to connect three CSOs (C31X: Earl Pumping Station, C32X: Deptford Storm Relief and C33X: Greenwich Pumping Station) to the main tunnel. First we assessed whether the Greenwich Pumping Station site could be enlarged to accommodate a connection tunnel drive, and checked whether there were any other shortlisted sites that we could use to construct the connection tunnel.

V.3.12 Our check showed that C33XV: Greenwich Pumping Station was not big enough on its own. In order to create a larger site at C33XV: Greenwich Pumping Station, we identified four nearby areas of land that could be used for additional facilities to deal with excavated materials. The CSO interception and drop shaft would remain on the Greenwich Pumping Station site (C33XV). We put the four additional construction and logistical areas of land to be used with Greenwich Pumping Station through our site selection process:

a. CL004: Greenwich industrial Estate, Norman Road – this site is located to the east into part of the Greenwich Industrial Estate.

b. CL005: Phoenix Wharf – this site is a builders’ merchants, located to the north of the Greenwich Pumping Station site and to the north of the railway line.

c. CL006: Sun Wharf – this site comprises an office building and industrial units situated to the west of the Greenwich Pumping Station site, across Deptford Creek.

d. CL007: Faircharm Trading Estate – this site consists of industrial properties and commercial units situated to the west of the Greenwich Pumping Station site, across Deptford Creek.

V.3.13 These additional construction and logistical areas of land are shown relative to C33XV in Annex V.2.

V.3.14 These additional construction and logistical areas of land were assessed against the relevant engineering, planning, environment, community and property considerations set out in Table 2.2 of the Site selection methodology paper.

V.3.15 Table V.4 below summarises the outcome of the back-check assessment of the back-check long list of sites. Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the next phase of assessment. This did not necessarily mean that these sites were ultimately judged suitable, but rather that no significant constraints were
identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained did not pass to the back-check draft short list for more detailed assessment. The main rationale for excluding these sites at this stage is summarised in the table below.

V.3.16 As can be seen overleaf, all sites were assessed as less constrained and progressed to the back-check draft short list.

Table V.4 Long list to draft short list for additional land to drive the tunnel from Greenwich Pumping Station (Table 2.2 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Additional land name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL004</td>
<td>Greenwich Industrial Estate, Norman Road</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>CL005</td>
<td>Phoenix Wharf</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>CL006</td>
<td>Sun Wharf</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
<tr>
<td>CL007</td>
<td>Faircharm Trading Estate</td>
<td><strong>Recommendation</strong>: To draft short list.</td>
</tr>
</tbody>
</table>

NB. The construction and logistic additional land ID and name/description were used as an internal mechanism to record and describe the site and are reproduced here to ensure consistency across documentation.

V.3.17 Of the four construction and logistical areas of land identified, all were assessed as potentially suitable and passed to the draft short list.

Assessment of the back-check draft short list additional areas of land

V.3.18 The four back-check draft shortlisted areas of land were further assessed by the engineering, planning, environment, community and property disciplines, having regard to the considerations set out in Table 2.3 of the Site selection methodology paper and in relationship to C33XV: Greenwich Pumping Station.

V.3.19 Table V.5 below summarises the outcome of the back-check assessment of the draft short list areas of land. Areas of land that were assessed as the least constrained when considered against the relevant Table 2.3 considerations were retained on the back-check short list to pass to the next stage of assessment. This did not necessarily mean that an area of land was ultimately be judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Areas of land that were judged to be more constrained were not retained on the back-check short list for more detailed assessment.

V.3.20 The main rationale for excluding these sites at this stage is summarised overleaf.
### Table V.5 Draft short list to final short list for additional land needed to drive the tunnel from Greenwich Pumping Station (Table 2.3 assessment)

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Additional land name/description</th>
<th>Recommendation and rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL004</td>
<td>Greenwich industrial Estate, Norman Road</td>
<td><strong>Recommendation</strong>: Retain on short list</td>
</tr>
<tr>
<td>CL005</td>
<td>Phoenix Wharf</td>
<td><strong>Recommendation</strong>: Retain on short list.</td>
</tr>
</tbody>
</table>
| CL006   | Sun Wharf                         | **Recommendation**: Not to short list. **Rationale:**  
  - Engineering – This additional area of land is separated from C33XV by railway arches and Deptford Creek. There are also some access constraints and demolition is required.  
  - Planning/Environment – This additional area of land is located within a mixed-use employment location, an area of archaeological potential and a SINC. The land is also in close proximity to residential properties. Furthermore, transport between this site and C33XV could be more difficult than sites on the other side of Deptford Creek.  
  - Property – This additional area of land is an existing industrial estate with commercial occupiers therefore acquisition costs could be significant but acceptable.  
  - Community – Use of this additional area of land would likely impact on the local economy but this could be mitigated if suitable alternative premises in the vicinity could be found for the businesses. |
| CL007   | Faircharm Trading Estate          | **Recommendation**: Not to short list. **Rationale:**  
  - Engineering – This additional area of land is separated from C33XV by railway arches and Deptford Creek. There are also some access constraints and demolition would be required.  
  - Planning/Environment – This additional area of land is located within a mixed use employment location, an area of
### Site ID | Additional land name/description | Recommendation and rationale
--- | --- | ---
 |  |  | archaeological potential and a SINC. The land is also in close proximity to residential properties. Furthermore, transport between this site and C33XV could be more difficult than sites on the other side of Deptford Creek.
- **Property** – This additional area of land is an existing industrial estate with commercial occupiers therefore acquisition costs could be significant but acceptable.
- **Community** – Use of this land would likely impact on the local economy but this could be mitigated if suitable alternative premises in the vicinity could be found for the businesses.

**NB.** The construction and logistic additional land ID and name/description were used as an internal mechanism to record and describe the site but could be updated where necessary.

#### V.3.21
Of the four sites on the draft short list, two were assessed as potentially suitable and passed to the final short list, and two additional areas of land did not.

**Assessment of the back-check final short list sites**

#### V.3.22
The two remaining additional areas were then combined with the Greenwich Pumping Station site (C33XV) and a site suitability report was prepared to cover all three potential scenarios:

- **a.** Option 1: C33XV and CL004: Greenwich Pumping Station (CSO interception) + Greenwich industrial Estate, Norman Road (Greenwich connection tunnel drive site).
- **b.** Option 2: C33XV and CL005: Greenwich Pumping Station (CSO interception) + Phoenix Wharf (Greenwich connection tunnel drive site).
- **c.** Option 3: C33XV: Greenwich Pumping Station (CSO interception + Greenwich connection tunnel reception site – ie, no additional land was needed for this option).

#### V.3.23
A summary of the site suitability report conclusions is provided below.

**V.3.24 Engineering:** The site is **suitable** as a CSO site for all site options. For Option 1, slurry from the tunnelling machine would need to be pumped across Norman Road, either in a buried pipe or a pipe bridge. Under Option 2, this slurry would need to be pumping through the railway arches. For all options, the interfaces between the construction site and the Thames Water operational parts of the site will need to be carefully managed to minimise any associated health and safety hazards.
V.3.25 **Planning:** Option 1 is considered *less suitable* as a CSO and a long connection tunnel drive site. The use of Greenwich Industrial Estate would be contrary to the mixed-use designation and policies which are in place at the site, and could compromise or delay the implementation of the planning application for the redevelopment of the site which is under consideration currently. Option 2 is considered *suitable* as CSO and a long connection tunnel drive site as the use of Phoenix Wharf is considered acceptable in planning terms. For all three options, use of the Greenwich Pumping Station site would be consistent with the existing land use, which includes Thames Water operational activities.

V.3.26 Further consideration of the detailed site layout is required to reduce potential visual and physical impacts on the listed pumping station and other listed buildings onsite. In addition, with a number of planning permissions for residential in the vicinity of all the site options, mitigation is likely to be required to ensure development is not contrary to amenity and pollution planning policies.

V.3.27 **Environment:** Overall, the site is *suitable* for both options 1 and 2 as a CSO with a (long) drive connection tunnel, and for Option 3 as a CSO with a (long) reception connection tunnel, although further investigation would be required as to whether built heritage, hydrogeology, air quality and land quality impacts could be adequately mitigated. Based on current information, the site is *suitable* from the perspectives of transport, archaeology, townscape, water resources (surface water), ecology, flood risk and noise. For Option 3, the site is also *suitable* from a built heritage perspective. This site was considered *less suitable* from the perspectives of water resources (hydrogeology), air quality and land quality. For options 1 and 2, the site is also *less suitable* from a built heritage perspective.

V.3.28 **Socio-economic and community:** Option 1 is considered *less suitable* as a CSO and long connection tunnel drive site. Construction work is likely to impact on the newly-built residential development to the west of the coal sheds and offices in Norman House, and significant mitigation will therefore be required to reduce impacts on these properties. Further residential properties to the south, a pub and community centre and the builder’s merchant business to the north could also be affected but this appeared likely to be to a lesser extent. A footpath and cycle route which runs under the railway lines would also need to be relocated.

V.3.29 Option 2 is *suitable* as a CSO and long connection tunnel drive site. In addition, to those impacts detailed above, two businesses operating out of the premises on Phoenix Wharf will also need to be relocated, and those operating out of the surrounding properties could face some disruption. However, the potential to use Deptford Creek to remove excavated materials differentiates the use of this option from option 1 above, although this would require further investigation.

V.3.30 Option 3 is considered *suitable* as a CSO and long connection tunnel reception site. Given the greatly reduced scope of work required in this option, it appears unlikely that the proposed activities would impact on the neighbouring residential properties or commercial and industrial land uses.
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V.3.31 **Property:** Option 1 is considered *less suitable* as a CSO and a connection tunnel drive site. The main part of the site is already within Thames Water ownership and acquisition costs for temporary use of additional land are expected to be acceptable. However, the grant of planning permission for redevelopment of site CL004 appeared likely prior to acquisition, which would increase acquisition costs. If redevelopment of this site commenced prior to acquisition, the assessment would change to *not suitable*.

V.3.32 Option 2 is considered **suitable** as a CSO and a connection tunnel drive site. The main part of the site is already within Thames Water ownership and acquisition costs for temporary use of additional land are expected to be acceptable. Parts of the site are within Network Rail ownership, which could add acquisition risk. Furthermore, business occupiers will be displaced. Also, there is a possibility that discretionary purchase costs will be incurred in respect of new flats under construction on the adjoining site.

V.3.33 Option 3 is considered **suitable** as a CSO and a connection tunnel reception site as the entire site is already within Thames Water ownership, and acquisition costs are expected to be insignificant.

**Assessment of alternative connection tunnel drive sites**

V.3.34 In addition to the back-check review above to determine whether additional land could be used in association with the Greenwich Pumping Station, we checked whether there were other shortlisted sites that could be used to help construct the connection tunnel. For these additional sites, no permanent works or access would be left at ground level. The drive shaft would be capped off below ground level, and nothing accessible or visible would be left.

V.3.35 We only considered sites that were in proximity to the proposed alignment of the connection tunnel that joins the Greenwich Pumping Station, Deptford Storm Relief and Earl Pumping Station CSOs to the main tunnel at Chambers Wharf.

V.3.36 Two sites were considered to have the necessary area to facilitate the engineering and construction layout requirements associated with a long connection tunnel drive site:

a. **S74SK:** The Boatyard, Calypso Way
b. **S01LM:** Convoys Wharf.

V.3.37 A site suitability report was prepared for these potential sites. A summary of the conclusions is provided below.

**S74SK: The Boatyard, Calypso Way**

V.3.38 The site S74SK comprises South Dock marina boat yard, located in the London Borough of Southwark. The site is roughly rectangular in shape and approximately 80 per cent of the site is occupied by a boatyard and a riverside walk runs through the north and east of the site.

V.3.39 The surrounding area is predominantly residential, and the nearest residential properties are located within approximately 12m of the site boundary. To the north, the site is bounded by a lock that accesses the
Appendix V – Greenwich Pumping Station

South Dock. The River Thames lies to the east. The site also bounds St George’s Square and a car park, which is located to the south of the park. Calypso Way borders the west of the site.

V.3.40 **Engineering:** The site was assessed as **less suitable** as a drive site for a long connection tunnel. It has reasonable road and river access. However, it should be noted that the site is on the small side and would need to be extended into the foreshore in order to create sufficient working space.

V.3.41 **Planning:** The site was assessed as **less suitable** as a drive site for a long connection tunnel. A series of planning designations applies to the site and mitigation would likely be required to reduce visual, general amenity and setting impacts on these designations. Furthermore, use of the site would result in the temporary loss of the boatyard for a lengthy period of time. There would also be potential impacts on residential amenity, and mitigation proposals should be considered further, particularly since there is no scope to relocate the construction works within the site to increase the separation distance between the works and adjacent dwellings.

V.3.42 **Environment:** Overall, the site was assessed as **less suitable** as a drive site for a long connection tunnel. The site was considered likely to be **suitable** from the perspectives of transport, archaeology, townscape and water resources (hydrogeology). However, the site was considered **less suitable** from the perspectives of built heritage, water resources (surface water), flood risk, ecology, air quality, noise and land quality impacts. Further investigations would be required in order to establish whether these impacts could be mitigated.

V.3.43 **Socio-economic and community:** The site was assessed as **less suitable** as a drive site for a long connection tunnel. Use of the site would result in the temporary loss of the boatyard or require it to relocate, which would have the potential to impact on the business, its employees and any other businesses in the area that rely on the use of the boatyard and their employees. The use of the site would also likely impact on the residents of the properties opposite the site to the north, south and west.

V.3.44 **Property:** The site was considered **suitable** as a long connection tunnel drive site because the acquisition costs were judged to be acceptable based on information available at the time. **S01LM: Convoys Wharf**

V.3.45 Site S01LM, known as Convoys Wharf, is a large, irregularly shaped site that consists of industrial buildings and warehouses. There is also a nationally significant Henricia Boatyard schedule monument present at Convoys Wharf. However this site option is a small area located on the eastern edge of the site adjacent to Pepys Park and therefore does not involve areas that contain known heritage assets. The site is located at the junction of Leeway and Grove Street in the London Borough of Lewisham, close to its boundary with the London Borough of Greenwich.

V.3.46 The surrounding area is primarily residential, and residential properties are oriented towards the site, along its southeast, northwest and southwest
boundaries. The Pepys Estate is also adjacent to the site to the north and west, with flats to the west, some of which would likely overlook the site. Recently constructed residential flats, some of which are 11 storeys high, also lie to the north, adjoining Leeway.

V.3.47 **Engineering:** The site was assessed as **suitable** as a drive site for a long connection tunnel because it has good vehicular access and the site already has wharfage and jetty facilities that could potentially be utilised, possibly with further development. The site is also large enough to fit all the site facilities.

V.3.48 **Planning:** The site was assessed as **less suitable** as a drive site for a long connection tunnel due to its proximity to residential receptors and public open space, which would likely to be contrary to planning policies protecting amenity, open space, Metropolitan Open Land and views. Due to the size of the Convoys Wharf site, we considered such relocation possible, which would make the site acceptable in planning terms. Furthermore, development of the Convoys Wharf site could be phased in order to prevent development on the site being delayed.

V.3.49 **Environment:** Overall, the site was assessed as **less suitable** as a drive site for a long connection tunnel. The site was considered likely to be **suitable** from the perspectives of transport, built heritage and townscape, water resources (hydrogeology and surface water) and flood risk. However, the site was considered **less suitable** from the perspectives of archaeology, ecology, air quality, noise and land quality. Further investigations would be required in order to establish whether these impacts could be mitigated.

V.3.50 **Socio-economic and community:** The site was assessed as **less suitable** as a drive site for a long connection tunnel. This site could impact on local residential properties and users of the adjacent park. The site could become **suitable** if the proposed works could be moved southeast to increase the separation from the residential properties and the park.

V.3.51 **Property:** The site was considered **suitable** as a long connection tunnel drive site because the acquisition costs were judged to be acceptable, based on information available at the time.

**Phase two consultation preferred site**

V.3.52 We held a multidisciplinary workshop and of the two choices for Greenwich Pumping Station, the use of additional land at Phoenix Wharf (C33XV + CL005) instead of Norman Road (C33XV + CL004) was the preferred option. The main considerations against using the Norman Road site were that it would be contrary to planning policy as this land was subject to a planning application for a major redevelopment at an advanced stage, which created a much greater property risk. Greenwich Pumping Station and Phoenix Wharf are both adjacent to Deptford Creek and therefore there is potential to use it and avoid having to pump excavated materials across the road. Considerations in favour of using Greenwich Pumping Station and Phoenix Wharf included the fact that it
would allow the use of an existing Thames Water site, with the resulting operational efficiencies in a controlled environment.

V.3.53 In order to identify our overall preferred tunnel drive strategy, we needed to consider the connection tunnel options to determine how it would be connected to the main tunnel at Chambers Wharf. We put the shortlisted sites into three zones, which each corresponded to a drive strategy as follows:

a. Zone G1 – S74SK: Boatyard – Greenwich connection tunnel drive site in two directions (ie, drive through Earl Pumping Station to Chambers Wharf and drive through Deptford Church Street to Greenwich Pumping Station).

b. Zone G2 – S01LM: Convoys Wharf – Greenwich connection tunnel drive site in two directions (ie, drive through Earl Pumping Station to Chambers Wharf and drive through Deptford Church Street to Greenwich Pumping Station).

c. Zone G3 – C33XV and CL005: Greenwich Pumping Station and Phoenix Wharf (drive through Deptford Church and Earl Pumping Station to Chambers Wharf).

V.3.54 On the basis of the assessments described above and professional judgement, it was agreed by all disciplines that it was preferable to drive a long connection tunnel from Greenwich Pumping Station and Phoenix Wharf, as this is largely an industrial area that could accommodate this type of activity. Using either of the sites in Zones G1 or G2 would also require the use of Greenwich Pumping Station because the CSO would still need to be intercepted and would require an additional temporary shaft to be excavated. Therefore, Greenwich Pumping Station with Phoenix Wharf would be more efficient, cost less and reduce risks. There are a number of planning applications for residential development at Convoys Wharf, which have not been successful to date but further amended applications are expected, as well as significant heritage constraints. It is also close to existing residential and has restricted road access.

**Confirmation of the preferred site for phase two consultation**

V.3.55 A final preferred sites workshop was held in Summer 2011 to verify the choice of preferred sites and consider any outcomes of further engagement and scheme development. The conclusion reached was that **C33XV + CL005: Greenwich Pumping Station/Phoenix Wharf should become the phase two consultation preferred site to intercept the Greenwich Pumping Station CSO and drive a long connection tunnel to Chambers Wharf.**

V.3.56 Phase two consultation provided an opportunity for the public to comment on our revised preferred site and scheme for the project.
Appendix V – Greenwich Pumping Station

V.4 Post phase two consultation: Review of CSO site use and connection tunnel

Introduction to the review

V.4.1 Section V.4 explains how we implemented the requirement in the Site selection methodology paper to review the scheme following phase two consultation and prior to Section 48 publicity.

V.4.2 We reviewed phase two consultation comments and received no new information; therefore we decided that Greenwich Pumping Station would remain our proposed CSO interception site.

V.4.3 The scheme review at this stage of the site selection process comprised: review of other comments from phase two consultation related to sites and tunnelling options associated with the Greenwich connection tunnel and the eastern section of the main tunnel on the Abbey Mills route; consideration of any ongoing scheme design and/or new technical information; and multidisciplinary workshops and reviews to re-consider the various comparisons and reasons for the most suitable use of Greenwich Pumping Station (i.e., the CSO interception and connection tunnel strategy).

V.4.4 Relevant plans of sites can be found in Annex V.1 to V.3.

V.4.5 This stage took place from Spring 2012 to Summer 2012.

Summary of phase two consultation responses

V.4.6 Details of the consultation feedback related to this site and our responses are provided in the Report on phase two consultation. We reviewed all phase two consultation comments and took them into account in the development of our proposed scheme. The main issues raised in relation to the site are summarised below:

a. object to the use of this preferred site
b. alternative sites have not been properly considered; in particular there have not been sufficient comparisons to the preferred site
c. the tunnelling strategy and associated use of this site needs to be reconsidered
d. the scale of effects on the local area and community resulting from the selection of this site is unacceptable/has not been properly considered
e. the site should be developed for other uses including Network Rail and Halliard Property Company’s proposals for mixed-use development at Phoenix Wharf
f. alternative site suggestions included Borthwick Wharf Foreshore, Convoys Wharf and the Greenwich Pumping Station site without Phoenix Wharf.

V.4.7 The main comments received in support of the site included:

a. Support for the use of the preferred site.
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b. Support for the changes to the proposed use of the preferred site since phase one consultation.

c. The site is already an operational Thames Water site/is owned by Thames Water.

d. With reluctance, the Royal Borough of Greenwich accepted use of site as a main tunnel drive site.

e. Qualified support for the preferred site included:
   i. the proposal must guarantee the legacy of the area, including nearby listed structures and the Creekside Walkway
   ii. concerns regarding inconvenience during construction.

V.4.8 We recognise the concerns that have been raised, including potential impact upon the local community, and will take these into account when developing the project further, including measures which can be put in place to minimise any significant potential impacts.

V.4.9 Due to suggested alternative drive options, we reviewed our tunnelling strategy and prepared a revised Engineering options report (Spring 2012), which concludes that the suggested alternatives would not add any new drive options, so the potentially feasible main tunnel drive options remained the same as those in the Engineering options report (Summer 2011) prior to phase two consultation.

Any changes in circumstances or new information

V.4.10 Planning permission for a mixed-use redevelopment including substantial residential uses was granted for the site opposite the pumping station off Norman Road, which is part of the additional land (CL004) and includes the Greenwich Industrial site. The residential development to the south of Greenwich Pumping Station adjacent to the listed coal sheds has been substantially completed and partially occupied.

V.4.11 Having considered this new information, we still believe Greenwich Pumping Station/Phoenix Wharf (C33XV + CL005) is the most suitable CSO and connection tunnel drive site.

Summary of main tunnel and connection tunnel drive options

V.4.12 The use of Greenwich Pumping Station as a drive or reception site for the connection tunnel is interrelated with the main tunnel drives and sites (Chambers Wharf and Abbey Mills (see this volume, Appendices R and W).

V.4.13 We believe the most suitable main tunnel site in Zone S11 was S84NM: Abbey Mills Pumping Station and the most suitable site in main tunnel Zone S6 Shad. As noted in paragraph W.4.9 above, the drive options did not change, but we still reviewed the drive options and the main tunnel comparisons remain valid (also see Volume 1, Main report, Section 6.6, Comparison 3 and Section 6.8 related to the Greenwich connection tunnel). Therefore C33XV + CL005: Greenwich Pumping Station/Phoenix Wharf is the most suitable site to drive the connection tunnel to Chambers
Wharf and to use Chambers Wharf to drive the main tunnel to Abbey Mills Pumping Station.

**Main rationale for the selection of the CSO and connection tunnel drive site for Section 48 publicity**

V.4.14 Further to all the comparisons and reasons above, the main rationale for selecting C33XV + CL005: Greenwich Pumping Station/Phoenix Wharf as the most suitable CSO and connection tunnel drive site is summarised below:

a. All the works to both intercept the CSO and drive the connection tunnel can be accommodate on this site, which will create an efficient and effective construction site.

b. Most of the site is Thames Water operational land.

c. There are several listed structures on the site but the impact on them will minimal and can be mitigated. The Pumping Station is a Grade II listed structure and the proposed location of the works (to the north of the pumping station site) greatly reduces any potential effect upon its setting. Also it has been determined that the list coal sheds do not need to be dismantled.

d. The local road network has capacity to transport excavated materials from this site as a connection tunnel drive site. We assessed the use of barges from Phoenix Wharf and it was found to be difficult due to the height constraint of the Creek Road Bridge if it was not open, and the traffic disruption that would be caused by frequently opening the bridge. However, we would not prevent the contractor from using barges if desired.

e. Use of the Greenwich Pumping Station and Phoenix Wharf was considered most suitable from a planning policy perspective.

V.4.15 It should be noted that we would locate the shaft as far from the Docklands Light Railway (DLR) viaduct as existing Pumping Station infrastructure would allow. We assessed the construction of the shaft and other works in terms of the proximity of the DLR viaduct and determined that the proposed works could be constructed safely with suitable construction plant and methods and maintain the safety of the DLR. In particular, cranes would be located and fitted with slew limiters and other devices to prevent jibs and loads affecting or endangering the DLR.

**V.5 Confirmation of the proposed CSO site and connection tunnel drive site Section 48 publicity**

V.5.1 The post phase two consultation review described above in Section V.4 confirmed C33XV + CL005: Greenwich Pumping Station/Phoenix Wharf as the proposed site for Section 48 publicity to intercept the Greenwich Pumping Station CSO and drive the Greenwich connection tunnel through Deptford Church Street and Earl Pumping Station to Chambers Wharf.
Section 48 publicity provides an opportunity for the public to comment on the proposed sites and the project as a whole. Comments received in response to Section 48 publicity will be reviewed and taken into consideration prior to submission of the final application.
Annex V.2
Appendix W – Abbey Mills Pumping Station

W.1 Introduction

W.1.1 This appendix sets out the site selection process that was followed in order to identify the most suitable site for constructing the eastern sections of the main tunnel prior to the following stages of the project: phase one consultation, phase two consultation and Section 48 publicity.

W.1.2 Table W.1 summarises the sites identified as the most suitable to construct the eastern sections of the main tunnel at each phase of the project.

Table W.1 Summary of the sites identified as most suitable and their use to construct the eastern sections of the main tunnel at each phase of the project

<table>
<thead>
<tr>
<th>Phase one consultation site and use:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site:</strong> Abbey Mills Pumping Station</td>
</tr>
<tr>
<td><strong>Use:</strong> To drive the main tunnel to King's Stairs Gardens, receive the main tunnel from Tideway Walk and drive two CSO connection tunnels: one to Greenwich Pumping Station and the other to Druid Street.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase two consultation site and use:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site:</strong> Abbey Mills Pumping Station</td>
</tr>
<tr>
<td><strong>Use:</strong> Abbey Mills Pumping Station would receive the main tunnel from Chambers Wharf.</td>
</tr>
<tr>
<td>(NB: The Druid Street CSO site was replaced by modifications to the existing Shad Thames Pumping Station; therefore connection tunnel is no longer required.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 48 publicity site and use:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site:</strong> Abbey Mills Pumping Station</td>
</tr>
<tr>
<td><strong>Use:</strong> To receive the main tunnel from Chambers Wharf.</td>
</tr>
</tbody>
</table>

W.1.3 This appendix is structured as follows:

a. Section W.1 provides details of the type of site needed and a brief summary of how the Site selection methodology paper was applied at each stage of the project.

b. Section W.2 provides the details of how we identified our preferred site for phase one consultation.

c. Section W.3 provides details of the back-check assessments and reasons why we changed our preferred site for phase two consultation.

d. Section W.4 and W.5 provide details of the post phase two consultation scheme review to confirm the proposed site for Section 48 publicity.
Type of site

W.1.4 We needed to identify a series of suitable sites to allow us to build the main tunnel. The main tunnel would transfer the collected overflows to Abbey Mills Pumping Station where they would be transferred via the Lee Tunnel (under construction) to Beckton Sewage Treatment Works.

W.1.5 Larger sites are required where a tunnel boring machine (TBM) would be inserted into the ground (known as main tunnel drive sites). This type of site would need to handle all the materials excavated by the TBM as it constructs that section of the tunnel. Smaller sites are required to remove the TBM from the ground at the end of the tunnel drive (known as main tunnel reception sites). A more detailed description of the different types of site required to construct and operate the project and the size requirements of these sites can be found in the Site selection background technical paper (see Volume 2).

W.1.6 We determined whether a site would be a main tunnel drive or reception site (ie the use of the site) by considering the tunnelling drive options (see Volume 1, Main report).

Site selection process

W.1.7 The Site selection methodology paper recognises the vital complementary relationship between the site selection process and engineering design developments (see Volume 2). Accordingly, as the site selection process progressed it became increasingly important to compare sites against engineering requirements. A fundamental consideration was the need to identify enough sites in the right locations to enable the project to be built.

W.1.8 All of the potential sites were identified in accordance with our Site selection methodology paper, which involved a ‘sieving’ approach that commenced with identifying all potentially suitable areas of land (excluding concentrated residential sites and World Heritage Sites). The main tunnel sites went through increasingly detailed levels of assessment. All the assessments were informed by a multidisciplinary approach that took into account engineering, planning, environmental, community and property considerations and professional judgement. All the assessments carried out were based on the information available at the time and the related stage in the project’s development.

W.1.9 Below is a brief summary of how the Site selection methodology paper was applied at each stage of the project with appropriate cross-references to sections in this appendix and to other volumes of this report.

W.1.10 Prior to phase one consultation we applied our multidisciplinary sieving approach to all the assessments outlined in the Site selection methodology paper, which is also briefly outlined below (see W.2.2). A summary of all the assessments and the preferred phase one consultation site and use are presented in Section W.2. In addition, a more detailed discussion of the tunnelling options for the main tunnel and comparisons for all routes and at this stage of the project can be found in Volume 1, Main report, Sections 4.9 to 4.12).
W.1.11 Following phase one consultation and prior to phase two consultation, we reviewed comments and decided that Abbey Mills Pumping Station should remain our preferred main tunnel site. However, due to other changes of the main tunnel sites and tunnelling strategy in the eastern tunnel sections, we decided to carry out a ‘back-check’ in relation to the tunnelling strategy. The results of the back-check on drive options are presented in Section W.3 and superseded all previous tunnelling and drive assessments undertaken prior to phase one consultation (reported in W.2). A more detailed discussion of the tunnelling options for the main tunnel and comparisons at this stage of the project can be found in Volume 1, Main report, Sections 6.3 to 6.6.

W.1.12 Following phase two consultation and prior to Section 48 publicity, the Site selection methodology paper required a review of the scheme. The review of main tunnel sites involved re-checking the choice of the most suitable main tunnel site, drive options and site use on the proposed route, and presented in Section W.4. This was done to confirm the proposed main tunnel site for Section 48 publicity, as set out in Section W.5.

W.2 Phase one consultation preferred main tunnel site: Site selection process

Introduction

W.2.1 Section W.2 explains how the Site selection methodology paper was implemented in order to arrive at the preferred main tunnel site for the eastern sections of the tunnel route for phase one consultation.

W.2.2 Prior to phase one consultation, the site selection process comprised: identification of sites for inclusion on a long list; assessment of sites on the long list to create a draft short list of sites (Table 2.2); assessment of the draft shortlisted sites to create a final short list of sites (Table 2.3); preparation of detailed site suitability reports for each final shortlisted site; preparation of the Engineering options report (Spring 2010) detailing the tunnelling drive options; a multidisciplinary optioneering workshop to consider the detailed contents of the site suitability report for each shortlisted site; and comparison of the sites in the Engineering options report to identify the preferred main tunnel site and use (drive or reception) for phase one consultation (see also Volume 1, Main report, Sections 4.9 to 4.12 for the pre-phase one consultation discussion on tunnelling drive options).

W.2.3 This stage took place from Spring 2009 to Summer 2010.

W.2.4 The assessments contained in Section W.2 were based on the information available at the time and the related stage in the project’s development. The assessments in this section therefore comprise a historic representation of the process and all of the assessments have been superseded.
Assessment of the long list sites

W.2.5 The long list of potential main tunnel sites for the eastern sections of the tunnel route was created by conducting a desktop survey of the land in the London Borough of Newham.

W.2.6 In total, three sites were included on the long list as potential sites for main tunnel shafts. These sites were assessed having regard to the high-level considerations set out in Table 2.2 of the Site selection methodology paper (hereafter referred to as Table 2.2) including engineering (site size, site features, availability of jetty/wharf and access), planning and environment (policy, heritage, landscape/townscape, open space and ecological), community and property (neighbouring land uses, site use, Special Land/Crown land and acquisition costs) considerations.

W.2.7 Sites that were assessed as the least constrained in light of the Table 2.2 considerations passed to the next stage of assessment. This did not necessarily mean that these sites were ultimately judged suitable as a main tunnel shaft site, but rather that no significant constraints were identified in relation to the high-level considerations set out in Table 2.2. Sites that were judged to be more constrained were not retained on the draft short list for more detailed assessment. Full details of these assessments are provided in the Table 2.2 assessment tables and the accompanying plans.

W.2.8 All three sites identified on the long list of potentially suitable sites for main tunnel sites at the eastern end of the tunnel route were assessed as potentially suitable and passed to the draft short list.

Assessment of the draft short list sites

W.2.9 The three draft short list sites identified as potentially suitable in Table 2.2 were further assessed by the engineering, planning, environment, community, and property disciplines, having regard to the considerations set out in Table 2.3 of the Site selection methodology paper (hereafter referred to as Table 2.3). This stage of the process built on the information gathered and assessments undertaken at long list stage but focussed on more detailed local considerations.

W.2.10 At this stage, we also consulted with each of the London local authorities along the preferred route and pan-London stakeholders, such as the Environment Agency and English Heritage, to seek their views on the suitability of the sites for the short list.

W.2.11 As with the Table 2.2 assessment, sites that were assessed as the least constrained in light of the Table 2.3 considerations were retained on the short list to pass to the next stage of assessment. This did not necessarily mean that a site was ultimately judged suitable, but rather that no significant constraints were identified in relation to the considerations set out in Table 2.3. Sites that were judged to be more constrained were not retained on the short list for more detailed assessment. Full details are provided in the Table 2.3 assessment tables and the accompanying plans.
W.2.12 All three sites on the draft short list were assessed as potentially suitable as either main tunnel drive or reception sites and passed to the final short list.

**Assessment of the final short list sites**

W.2.13 The three final shortlisted sites retained for more detailed assessment as potential main tunnel sites were:

a. S84NM: Abbey Mills Pumping Station
b. S85NM: Three Mills Green
c. S86NM: Three Mills Studios.

W.2.14 A site suitability report was prepared for each of the final shortlisted sites. The reports contained an assessment of the suitability of each site, having regard to engineering, planning, environment, community and property considerations. At this stage in the process, sites were assessed in isolation with no comparison to other sites or regard to tunnelling strategy. Sites were evaluated by each discipline, using technical knowledge and professional judgement as appropriate, and assessed as **suitable**, **less suitable** or **not suitable** from that discipline’s perspective.

W.2.15 A summary of the conclusions of each discipline’s assessment from the site suitability reports is provided below.

**S84NM: Abbey Mills Pumping Station**

W.2.16 Site S84NM is located in the southern part of the Abbey Mills Pumping Station on a more open part of the operational site, flanked by watercourses, in the London Borough of Newham. There are a number of allotments within the site boundary that lie to the west and abut the Prescott Channel.

W.2.17 The site is bounded to the west by the Prescott Channel, to the east by the Channelsea River, to the northwest by residential properties, and to the north by the Greenway.

W.2.18 The site was assessed as a main tunnel drive and main tunnel reception site.

W.2.19 **Engineering:** Assessed the site as **suitable** as either a main tunnel drive or reception site. The area is large enough and might have river access. There are no particular constraints from third-party assets and there is no need for any demolition.

W.2.20 River access would be constrained as it is shallow, narrow and winding, with only limited access at each tide, which would limit the type of barge and number of movements.

W.2.21 **Planning:** Assessed the site as **suitable** as either a main tunnel drive or reception site. There are a number of applicable designations and sensitive receptors in the vicinity of the site. However, careful consideration of the location of some of the construction works and the site access and appropriate mitigation should avoid an unacceptable level of impact.
W.2.22 Environment: Overall, the site was assessed as suitable for both types of site. It was considered likely to be suitable from the perspective of archaeology, built heritage and townscape, water resources, ecology, flood risk, air quality and noise. However, the site was less suitable from the perspectives of road transport and land quality.

W.2.23 Socio-economic and community: Assessed the site as less suitable as a main tunnel drive site as this would likely lead to the loss or displacement of some of the allotments, which could be difficult to relocate or otherwise mitigate. Some indirect impacts would also be likely on the Three Mills Studio due to its proximity to the main area of works, and the Kingsland Further Education College, a small number of business premises, Three Mills Green, and a number of residential properties could also be affected.

W.2.24 The site was assessed as suitable as a smaller main tunnel reception site as it appeared that the allotments would only be partly affected by the road access and the proximity to the construction activity, which would likely affect the tranquillity and enjoyment of the allotments. Nearby residential, educational and commercial uses as above could also experience disruption, but it was likely this could be mitigated.

W.2.25 Property: Assessed the site as suitable as a main tunnel drive or reception site as the site is owned by Thames Water. If the site were used as a main tunnel drive site, a slight redesign should be undertaken in order to avoid relocating allotment holders.

S85NM: Three Mills Green

W.2.26 The proposed site is located on the northern half of the Three Mills Island, on an area of land known as Three Mills Green, in the London Borough of Newham. The site is flanked on the eastern and western boundaries by watercourses, and studios to the south.

W.2.27 The site is bounded to the east by the Prescott Channel, including a lock and sluices, to the south by Three Mills Studios, and to the west by the Three Mills Wall River.

W.2.28 The site was assessed for use as a main tunnel drive and main tunnel reception site.

W.2.29 Engineering: Assessed the site as suitable as a main tunnel drive site. The site is of sufficient size and has the potential for jetty/wharftage facilities. There would likely be limitations on the use of river access as barge movements would be restricted. The site was assessed as suitable for a main tunnel reception site as it would be of sufficient size. Road access would be via a traffic-calmed road approximately 7m wide. There could be weight restrictions on the bridge crossing.

W.2.30 Planning: Assessed the site as less suitable as either a main tunnel drive or reception site. A number of planning and environmental designations applied to the site. Of these, open space, heritage and nature conservation were of most significance. Use of the site could be mitigated; however, the impact of the loss of open space and the local
planning authority’s requirement for replacement facilities would require further investigation.

W.2.31 **Environment:** Overall, the site was assessed as **suitable** for both types of site. It was considered likely to be suitable from the perspectives of transport, archaeology, built heritage, townscape, surface water, ecology, flood risk, air quality and noise. However, it was **less suitable** from the perspectives of hydrogeology and land quality.

W.2.32 **Socio-economic and community:** Assessed the site as **not suitable** as a main tunnel drive site as it appeared that it would lead to the temporary loss of the Three Mills Green area of public open space during the construction period, which would likely have a significant effect on community cohesion and the health and well-being of the local population. There would also potentially be impacts on residents in properties to the north of the site and businesses located opposite to the south and west. The site was considered **less suitable** as a main tunnel reception site. Using the site for this purpose had the potential to affect the same receptors, but the impacts would likely be lesser than for a main shaft site due to the reduced scope of work.

W.2.33 **Property:** Assessed the site as **suitable** as a main tunnel drive or reception site as the acquisition costs were likely to be acceptable. However, selection of this site would likely raise a large number of objections.

**S86NM: Three Mills Studios**

W.2.34 S86NM is located on the southern half of the Three Mills Island and is currently in use as the Three Mills Studios. The site is broadly square and surrounded by watercourses on three sides and an area of open space to the north.

W.2.35 The site is bounded to the east by the Prescott Channel, to the south by the Channelsea River, to the west by the Three Mills Wall River and the River Lee, and to the north by the Three Mills Green, which is a grassed, open space, fringed with trees.

W.2.36 The site was assessed for use as a main tunnel drive and main tunnel reception site.

W.2.37 **Engineering:** Assessed the site as **less suitable** for a main tunnel drive site because of the significant demolition and enabling works that would be necessary. Also, there would be restrictions on use of the river. The site was assessed as **suitable** for a main tunnel reception site as it would be of sufficient size and require less demolition and fewer enabling works.

W.2.38 **Planning:** Assessed the site as **less suitable** as either a main tunnel drive or reception site as it was subject to numerous planning and environmental designations and significant mitigation would be required.

W.2.39 **Environment:** Overall, the site was assessed as **less suitable** for both types of site. It was considered likely to be **suitable** from the perspectives of transport, townscape, surface water, ecology, air quality and noise. However, it was **less suitable** from the perspectives of archaeology, built heritage, hydrogeology, flood risk and land quality.
Appendix W – Abbey Mills Pumping Station

W.2.40 **Socio-economic and community:** Assessed the site as not suitable as a main tunnel drive site as it appeared that using the site would lead to the temporary loss of the whole Three Mills Studios site, which could have livelihood implications for business owners and employees. The use of the site could also impact on Three Mills Green – an area of public open space. The site was considered less suitable as a main tunnel reception site. We would only approximately half of the site and therefore some of the studio buildings could remain. However, the nature of the creative media business suggests that it was unlikely that this would provide a suitable working environment, which would force the businesses to relocate or close.

W.2.41 **Property:** Assessed the site as less suitable as both a main tunnel drive or reception site as acquisition and associated disturbance costs were expected to be moderate to high for both options.

**Phase one consultation preferred site**

W.2.42 Consideration of the main tunnel sites up until shortlist stage principally focussed on each as an individual site separate to the assessment of tunnel drive and alignment options (ie, how the tunnel would be constructed and the route it would take). However, due to the nature of the scheme, it was necessary to select a package of main tunnel sites, having regard to how they would work in combination and in relation to the tunnel alignment and CSO connections.

W.2.43 The *Engineering options report* (Spring 2010) describes the process of identifying the tunnelling options, taking engineering requirements into account. The main points are summarised below.

W.2.44 The engineering team considered possible drive options – the possible of ways in which the tunnel could be constructed by ‘driving’ between combinations of shortlisted main tunnel sites – having particular regard to changes in ground conditions and the requirement for different types of tunnelling machines, construction risks and timescales.

W.2.45 In general, for all drive strategies, we required sites to build the main tunnel at:

a. each end of the main tunnel in west and east London
b. suitable intervals along the route of the main tunnel
c. location sat which the type of geology that the main tunnel would pass through changes.

W.2.46 The geology changes along the length of the main tunnel, with clay in the west, sands and gravels under central London and chalk in the east. The main tunnel would be built using TBMs and different types would be used for various ground conditions.

W.2.47 To manage the total number of combinations of tunnel drive and reception site options that make up a ‘drive option’, the available shortlisted main tunnel sites were grouped together in zones. The zones were based on the geographical locations of the sites along the line of the River Thames.
and named and numbered for convenient referencing, as illustrated in Figure W.1 below.

**Figure W.1 Location of site zones**

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W.2.48 Our preferred route for the main tunnel runs from west London to Abbey Mills Pumping Station and involves Zones S1 to S7 and Zone S11. Zones S8 to S10 were only required for the previously considered River Thames and Rotherhithe routes, which did not become our preferred option and are not considered further in this appendix.

W.2.49 Multidisciplinary workshops were held to identify the most suitable main tunnel shortlisted site in each zone, taking into account the conclusions reached in the site suitability reports described above.

W.2.50 Of the three shortlisted sites, S84NM (Abbey Mills Pumping Station) was identified as the preferred location for a main tunnel drive or reception site in Zone S11 for a number of reasons, which are summarised below:

a. Site S84NM offered the advantages of using existing Thames Water land and would avoid the need to impact on the existing businesses on the other shortlisted sites.

b. The most significant impacts and risks associated with this site related to the impact on the existing road access route though the adjacent housing estate and the allotments within the site boundary, in addition to our need to provide wharfage access for barges to remove excavated material. Overall, we considered that this site could be developed in accordance with planning policy.

c. On balance, we considered that the alternative sites, S85NM and S86NM, would likely result in greater impacts and were therefore less suitable.

d. Site S85NM: Three Mills Greenways considered less suitable from a planning perspective and not suitable/less suitable from a community perspective, depending on whether it was selected as a main drive or reception site. S86NM: Three Mills Studios was considered less suitable for a main drive site by the engineering, planning, environment and property disciplines and not suitable by
the community team. It was also considered less suitable as a reception site by the planning, environment, community and property disciplines. Importantly, use of either site would likely conflict with planning policy in the Newham Unitary Development Plan.

W.2.51 Therefore, site S84NM: Abbey Mills Pumping Station was judged to be the least constrained and most suitable site for either a main tunnel drive or reception site.

W.2.52 Figure W.2 shows the location of the preferred and shortlisted sites in Zone S11 – Abbey Mills.

**Figure W.2 Location of shortlisted main tunnel sites in Zone 11**

**Drive strategy**

W.2.53 The drive strategy for the eastern section of the main tunnel was influenced by the change in geology from sands to chalk in the Tower Bridge area at which it is desirable to change type of TBM. A main tunnel site was therefore required in Zone S6 or S7.

W.2.54 However, the main tunnel site in this zone identified as most suitable at phase one consultation, S54SK: King’s Stairs Gardens, was assessed as only suitable for a main tunnel reception site. This meant that the eastern section of the main tunnel needed to be driven from S84NM: Abbey Mills Pumping Station.

W.2.55 The main considerations in favour of using Abbey Mills Pumping Station as a main tunnel drive site were as follows:

a. Abbey Mills Pumping Station site is owned by Thames Water and should be utilised as far as is reasonably practicable.
b. Driving the main tunnel from Abbey Mills Pumping Station would reduce the impact on public open space and residential amenity at King’s Stairs Gardens, although long connection tunnels to pick up three CSOs would still be constructed from the King’s Stairs Gardens site. The neighbouring residential uses would therefore still be affected.

c. The Abbey Mills Pumping Station site is relatively unconstrained compared to King’s Stairs Gardens, particularly in terms of its operational nature, and there are fewer sensitive receptors in the area. It is, however, located within a conservation area.

d. It was more likely that noise and air quality impacts could be adequately mitigated for a main tunnel drive shaft site at Abbey Mills Pumping Station than at King’s Stairs Gardens.

e. There could be a compensation cost for replacing open space at King’s Stairs Gardens.

W.2.56 Based on the above issues, the preference was to drive from Abbey Mills Pumping Station to King’s Stairs Gardens.

W.3 Phase two consultation preferred main tunnel site: Scheme development and site selection

Introduction

W.3.1 Section W.3 explains how the Site selection methodology paper was implemented in order to arrive at the preferred main tunnel site for the eastern sections of the tunnel route for phase two consultation.

W.3.2 Following phase one consultation and prior to phase two consultation, we reviewed comments received at phase one consultation. There was no new additional information; therefore Abbey Mills Pumping Station remained our preferred main tunnel site.

W.3.3 Following phase one consultation, we also carried out a back-check on the tunnelling strategy for the eastern sections of main tunnel and the Greenwich connection tunnel drive options. This stage of the site selection process comprised: review of the other comments from phase one consultation in relation to sites and tunnelling options associated with the eastern sections of the main tunnel and Greenwich connection tunnel on the Abbey Mills route; consideration of any ongoing scheme design and/or new technical information; and multidisciplinary workshops to re-consider various comparisons and reasons for the preferred use of Abbey Mills Pumping Station (see also Volume 1, Main report, Sections 6.3 to 6.6 for the pre-phase two consultation discussion on tunnelling drive options for the Abbey Mills route).

W.3.4 This stage took place from Winter 2010 to Autumn 2011.

The assessments contained in Section W.3 were based on the information available at the time and the related stage in the project’s development.
**Phase one consultation responses**

W.3.5 As part of the site selection methodology, all feedback received during phase one consultation was reviewed and taken into account in the development of our scheme for phase two consultation.

W.3.6 The main issues and concerns raised during phase one consultation in relation to the Abbey Mills Pumping Station site are summarised below.

W.3.7 The main issues raised included:

a. the need to maintain nearby footpath access
b. loss of green space, including allotments
c. disruption to residents from construction works
d. impact of construction traffic
e. design of the operational buildings
f. odour impacts in the surrounding area.

W.3.8 The main supportive comments received included:

a. it will cause least disruption of the three sites consulted on
b. the proposal is supported by Lee Valley Regional Park Authority.

W.3.9 More details on the consultation responses relating to this site and our response to the comments received are provided in the *Report on phase one consultation*.

**Back-check process**

W.3.10 Following our review of the feedback received during phase one consultation, we held a multidisciplinary workshop to review the selection of all our preferred sites and drive options. S84NM: Abbey Mills Pumping Station remained our preferred main tunnel site for the construction of the eastern section of the main tunnel.

W.3.11 However, in response to a number of engineering design developments, the availability of new technical information, and the feedback we received during phase one consultation, we undertook a back-check to review our preferred site in Zones S6 to S7: S54SK: King's Stairs Gardens. This review resulted in a change of preferred site to a new site: S76SK: Chambers Wharf (see Appendix R).

W.3.12 The change in preferred site had implications for the drive strategy for the eastern section of the main tunnel as S76SK: Chambers Wharf was assessed as suitable as either a main tunnel single drive or reception site.

**Tunnelling strategy**

W.3.13 The Main report discusses the tunnelling options and drive option comparisons involving Abbey Mills (see Volume 1, Main report, Section 6.6, Comparison 3, Options A to C).

W.3.14 In summary, for Zone S11 – Abbey Mills, we selected S84: Abbey Mills Pumping Station as the most suitable main tunnel drive or reception site. In Zones S6 – Shad and S7 – Limehouse, we selected S76SK: Chambers
Wharf as the most suitable site main tunnel drive or reception site (see Appendix R) but due to site size and programme, this site could only support a drive in one direction. We selected Greenwich Pumping Station as the most suitable site to drive or receive the Greenwich connection tunnel (see Appendix V).

W.3.15 We held a workshop and discussed tunnelling option comparisons of the most suitable sites listed in paragraph W.3.14. The three drive options under consideration involved the construction of the eastern sections of the main tunnel and considered the Greenwich connection tunnel required to pick up the Earl Pumping Station and Greenwich Pumping Station CSOs in order to connect them to the main tunnel. Summary of the options:

a. **Option A1:** Drive the main tunnel from S84NM: Abbey Mills Pumping Station to S76SK: Chambers Wharf; receive the main tunnel from Kirtling Street and drive the connection tunnel from S76SK: Chambers Wharf to C33XV: Greenwich Pumping Station. Option A2 was the same, but reversed the drive of the connection tunnel to drive it from C33XV: Greenwich Pumping Station to S76SK: Chambers Wharf.

b. **Option B:** Drive the main tunnel from S84NM: Abbey Mills Pumping Station to S76SK: Chambers Wharf; drive the main tunnel from S76SK: Chambers Wharf to Kirtling Street and receive the connection tunnel at S76SK: Chambers Wharf from C33XV: Greenwich Pumping Station.

c. **Option C:** Drive the main tunnel from S76SK: Chambers Wharf to S84NM: Abbey Mills Pumping Station; receive the main tunnel from Kirtling Street and drive the connection tunnel from C33XV: Greenwich Pumping Station to S76SK: Chambers Wharf.

W.3.16 On balance, based on the above drive options assessment, it was decided Option C that would drive the eastern section of the main tunnel from S76SK: Chambers Wharf to S84NM: Abbey Mills Pumping Station (see Volume 1, Main report, Section 6.6, Comparison 3, Options A-C). A summary of the key reasons for this decision:

a. Further technical work and discussions with the Lee Tunnel project team and Olympic Delivery Authority on their experience for the Olympic Park has shown that transporting materials to and from S84NM: Abbey Mills Pumping Station by the River Lee is highly undesirable when material needs to be transported daily over a two- to three-year period. This level of barge movements would be required if the site was used as main tunnel drive site, given the volume of excavated material that would be produced.

b. At S84NM: Abbey Mills Pumping Station there are more constraints in using Bow Creek to remove excavated material due to the fact that only small 350 tonne barges could be used during a short tidal window, while at S76SK: Chambers Wharf, 1,500 tonne barges or potentially larger ones can be used on the River Thames to remove excavated material produced by a main tunnel drive site.
Appendix W – Abbey Mills Pumping Station

c. Use of S76SK: Chambers Wharf as the main tunnel drive site avoids the need to work in Channelsea River, which avoids the potential health and safety risks associated with the contaminated materials in the river. It also means less impact on the foreshore ecology and water resources at Abbey Mills.

d. Work to construct campsites and wharf facilities in the Channelsea River at S84NM: Abbey Mills Pumping Station has been assessed as introducing high health and safety risks, including the handling of contaminated materials. This risk does not exist at S76SK: Chambers Wharf.

W.3.17 Discussions associated with the Greenwich connection tunnel are discussed in the main report (see Volume 1, Main report, Section 6.6, Comparison 3 and Section 6.8 related to the Greenwich connection tunnel). Figure W.3 below shows the preferred sites and tunnelling strategy for the construction of the eastern section of the main tunnel.

**Figure W.3 Preferred sites and tunnelling strategy for eastern section of the main tunnel and Greenwich connection tunnel**

Confirmation of the preferred site for phase two consultation

W.3.18 A final preferred sites workshop was held in Summer 2011 to verify the choice of preferred sites and consider any outcomes of further engagement and scheme development. The conclusion reached was that **S84NM: Abbey Mills Pumping Station should remain the preferred site for the eastern section of the main tunnel**. However, the use of the site would be changed from a main drive site to a main...
tunnel reception site to receive the TBM used to construct the eastern section of the main tunnel driven from S76SK: Chambers Wharf.

W.3.19 Phase two consultation provided an opportunity for the public to comment on our revised preferred site and scheme for the project.

W.4 Post phase two consultation: Review of main tunnel sites and uses

Introduction to the review

W.4.1 Section W.4 explains how we implemented the requirement in the Site selection methodology paper to review the scheme following phase two consultation and prior to Section 48 publicity.

W.4.2 The scheme review at this stage of the site selection process comprised: a review of comments from phase two consultation related to main tunnel sites and tunnelling options associated with Zone S11 for the eastern sections of the main tunnel set out in the Engineering options report (Summer 2012); consideration of any ongoing scheme design and/or new technical information; multidisciplinary workshops and reviews to confirm the proposed main tunnel site and use in Zone S11 for Section 48 publicity.

W.4.3 This stage took place from Spring 2012 to Summer 2012.

Summary of phase two consultation responses

W.4.4 Details of the consultation feedback related to this site and our responses are provided in the Report on phase two consultation. We reviewed all phase two consultation comments and took them into account in the development of our proposed scheme. The main issues raised in relation to the site are summarised below:

a. object to the use of this preferred site and changes to the proposed use of the preferred site since phase one consultation
b. query why shortlisted sites have not been identified
c. site selection should avoid sites in residential and/or densely populated areas/ the scale of effects on the local area and community resulting from the selection of this site is unacceptable/has not been properly considered
d. the drive strategy and associated use of this site needs to be reconsidered; specifically instead of Chambers Wharf
e. the reasons for selecting this preferred site are flawed/questionable

W.4.5 The main comments received in support of the preferred site included:

a. support for the use of the site/support the changes to the proposed use of the preferred site since phase one consultation
b. the site is a suitable size and/or has sufficient capacity to accommodate the proposals
c. the site is already an operational Thames Water site/is owned by Thames Water

d. the effects associated with selection of this site can be managed through mitigation

e. qualified support subject to clarification being provided as to why the Lee Tunnel shaft cannot be used as the reception shaft instead of constructing a new shaft.

W.4.6 We recognise the concerns that have been raised, including potential impact upon sensitive receptors, and we will take these into account when developing the project further, including measures which can be put in place to minimise any significant potential impacts.

W.4.7 Due to suggested alternative drive options, we reviewed our tunnelling strategy and prepared a revised Engineering options report (Spring 2012), which concludes the suggested alternatives would not add any new drive options, so the potentially feasible main tunnel drive options remained the same as those in the Engineering options report (Summer 2011) prior to phase two consultation.

W.4.8 Having taken all comments received during phase two consultation into account, we still believe S84NM: Abbey Mills Pumping Station is the most suitable site to receive the main tunnel from Chambers Wharf.

**Any changes in circumstances or new information**

W.4.9 Feedback from the Lee Tunnel project, currently under construction, is that whilst barging of excavated spoil from a shaft at Abbey Mills is technically feasible, much larger volumes of spoil would arise if Abbey Mills were a main tunnel drive site and this amount could not be transported by barge. This is because of the limited tidal window and the time needed to navigate the tortuous River Lea up to Abbey Mills, and the inability of barges to operate at Abbey Mills at all during certain tidal conditions. This reinforces the assessment that Abbey Mills is not suitable as a main tunnel drive site.

W.4.10 The Abbey Mills Pumping Station site is not designated as open space in the London Borough of Newham Core Strategy adopted in January 2012, however it remains Green Space under the saved Unitary Development Plan policy. It is within an area of search for a new area of Metropolitan Open Land along the Lower Lea Valley, but the precise boundary has not yet been defined.

W.4.11 Having considered this new information, we still believe S84NM: Abbey Mills Pumping Station is the most suitable site to receive the main tunnel from Chambers Wharf.

**Summary of tunnelling drive options**

W.4.12 As part of our review, we reviewed the drive options for the eastern section, which included all the sites in Zone S11. At phase two consultation there were three shortlisted main tunnel sites in Zone S11 and we reviewed the Table 2.2 and Table 2.3 assessments as set out in the Site selection methodology paper:
a. S84NM: Abbey Mills Pumping Station.
b. S85NM: Three Mills Green.
c. S86NM: Three Mills Studios.

W.4.13 At Table 2.3, with additional technical connection information, it was confirmed for that for S85NM: Three Mills Green and S86NM: Three Mills Studios it would be technically difficult connection passing under Prescott Channel to connect shaft to Lee Tunnel shaft F located within S84NM: Abbey Mills Pumping Station site. Therefore it was concluded that S85NM: Three Mills Green and S86NM: Three Mills Studios should not be on the final short list of sites. This meant that after the review S84NM: Abbey Mills Pumping Station was the only shortlisted site and was confirmed the most suitable in Zone S11 (see Figure W.4).

W.4.14 This means the most suitable main tunnel site in Zone S11 was S84NM: Abbey Mills Pumping Station and the most suitable site in main tunnel Zone S6 Shad. As noted in paragraph W.4.8 above, the drive options did not change, but we still reviewed the drive options and the main tunnel comparisons in Section 3 above in paragraphs W.3.13 to W.3.17 remain valid (also see Volume 1, Main report, Section 6.6, Comparison 3). Therefore S84NM: Abbey Mills Pumping Station is the most suitable site to receive the main tunnel from Chambers Wharf.

Figure W.4  Shortlisted site in Zone S11

Main rationale for the selection of the main tunnel reception site for Section 48 publicity

W.4.15 In summary, S84NM: Abbey Mills Pumping Station was identified as the most suitable main tunnel reception site at the eastern end of the main tunnel for the following reasons (in no particular order):
a. It is a brownfield site with operational Thames Water works.

b. This site is adjacent to Lee Tunnel shaft F which would be the most efficient way to transfer the flows from the Thames Tideway Tunnel to the Lee Tunnel for transfer to the Beckton Sewage Treatment Works.

c. There are a number of applicable planning designations in the vicinity of the site. However, careful consideration of the location of some of the construction works and site access and appropriate mitigation should avoid an unacceptable level of impact.

W.4.16 The proposed sites and tunnelling strategy for the construction of the eastern section of the main tunnel in Figure W.3 made the best use of each site in the eastern section of the tunnel with the least amount of risk.

W.5 Confirmation of the proposed CSO site for Section 48 publicity

W.5.1 The post phase two consultation review described above in Section W.4 confirmed S84NM: Abbey Mills Pumping Station as the proposed main tunnel site to receive the main tunnel from Chambers Wharf for Section 48 publicity.

W.5.2 Section 48 publicity provides an opportunity for the public to comment on the proposed sites and the project as a whole. Comments received in response to Section 48 publicity will be reviewed and taken into consideration prior to submission of the final application.
### Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>combined sewer overflow (CSO)</td>
<td>A structure, or series of structures, designed to allow spillage of excess wastewater from a combined sewer under increased rainfall conditions. Flows may discharge by gravity or by pumping.</td>
</tr>
<tr>
<td>connection culvert</td>
<td>A covered channel structure that connects an interception chamber to a drop shaft.</td>
</tr>
<tr>
<td>connection tunnel</td>
<td>A tunnel that connects a drop shaft to the main tunnel.</td>
</tr>
<tr>
<td>CSO site</td>
<td>A site that contains the CSO interception chambers, connection culverts and the drop shaft from which the connection tunnel is built. Each site needs to provide enough space for all construction related activities, which vary depending on the diameter of the shafts and the method of tunnel construction.</td>
</tr>
<tr>
<td>drive site</td>
<td>A main tunnel site containing the shaft from which the tunnel boring machine is ‘driven’ forward, i.e., starts from. Excavated material is removed from and segments are fed into the tunnel via the shaft at the drive site.</td>
</tr>
<tr>
<td>drop shaft</td>
<td>A vertical, circular structure that connects a connection culvert to a connection tunnel. This is used to drop flow down to the main tunnel level.</td>
</tr>
<tr>
<td>intermediate site</td>
<td>A site that contains the intermediate shafts from which the construction of the main tunnel is supported by activities such as secondary lining. Each site needs to provide enough space for all construction related activities, which vary depending on whether the concrete for the secondary lining is made on the site or made elsewhere and delivered to the site by lorries.</td>
</tr>
<tr>
<td>Lee Tunnel</td>
<td>The Lee Tunnel comprises a storage and transfer tunnel from Abbey Mills Pumping Station to Beckton STW and the interception of the Abbey Mills CSO.</td>
</tr>
<tr>
<td>main tunnel</td>
<td>The tunnel from Abbey Mills to Acton Storm Tanks.</td>
</tr>
<tr>
<td>main tunnel site</td>
<td>A site from which the main tunnel is built. Each site needs to provide enough space for all construction related activities, which vary depending on the type of tunnel boring machine used and whether the site is a drive site, a double drive site or a reception site.</td>
</tr>
<tr>
<td>mitigation measures</td>
<td>Actions proposed to moderate adverse impacts and to enhance beneficial impacts arising from the whole or specific elements of the development.</td>
</tr>
<tr>
<td>pumping station</td>
<td>A vertical, circular structure that has pumps located at the bottom. This is used to lift storm water flows up to the sewage treatment works.</td>
</tr>
<tr>
<td>receptors</td>
<td>People (both individually and communally) and the socio-economic systems they support.</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
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<td>-------------------------------------------</td>
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</tr>
<tr>
<td>reception site</td>
<td>A main tunnel site that contains the shaft from which the tunnel boring machine is ‘received’, ie, ends up. The tunnel boring machine is removed from the tunnel via the shaft at this reception site.</td>
</tr>
<tr>
<td>sewage or wastewater</td>
<td>Waterborne wastes from domestic uses of water, derived from households, trade and industry.</td>
</tr>
<tr>
<td>sewerage</td>
<td>A system of pipes for the collection and transportation of domestic and industrial wastewater.</td>
</tr>
<tr>
<td>shaft</td>
<td>Duct/pipe/vertical tunnel.</td>
</tr>
<tr>
<td>storm water</td>
<td>Rainwater that funnels into sewers to be mixed with sewage and is either treated at sewage works or overflows into rivers.</td>
</tr>
</tbody>
</table>
| Thames Tideway Tunnel project             | The Thames Tideway Tunnel project comprises a main tunnel, running from west to east London that is integrated with the existing sewerage system via connection tunnels in order to control 34 ‘unsatisfactory’ CSOs. These tunnels store and transfer the intercepted flows to Beckton STW. The project consists of two main elements:  
  - Works to design, construct and maintain the main tunnel, which provides the majority of the storage capacity and enables transfer of combined sewage to Beckton STW in east London.  
  - Works to control and intercept combined sewage overflows unsatisfactory CSOs and transfer them into the main tunnel. This includes connection tunnels to link intercepted CSOs to the main tunnel. |
| Tideway                                   | The tidal area of the River Thames (ie, from Teddington to the Thames Estuary).                                                               |
| tunnel alignment                          | The horizontal and vertical route of the proposed tunnels, including connection tunnels and main tunnel sites.                                 |
| tunnel boring machine                     | A machine with a circular cross-section that is used to excavate tunnels through a variety of ground conditions.                              |
For further information or to comment on our proposals please see our website: www.thamestunnelconsultation.co.uk

It is very important that you understand the information we have provided. If you need further information in another language, braille, large print or audio format please contact us on 0800 0721 086.