

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Sustainability Statement

Doc Ref: **7.07**

Appendix B.24

Bekesbourne Street

APFP Regulations 2009: Regulation **5(2)(q)**

Hard copy available in

Box **48** Folder **B**
January 2013

**Thames
Tideway Tunnel**



Creating a cleaner, healthier River Thames

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Appendix B: Site specific appraisal

B.24 Bekesbourne Street

Type of site:	System modifications
Description of proposals:	The site lies within the London Borough of Tower Hamlets. It is mainly located on Bekesbourne Street with an additional small site on Ratcliffe Lane. Modification works would enable the control of the Holloway Storm Relief CSO.
<p>Water quality</p> <p>Maintain and enhance river water quality</p>	
<p>Appraisal</p> <p>The proposals would support the objective. Particular issues of relevance to the site appraisal include:</p> <ul style="list-style-type: none"> • The site is located in Bekesbourne Street, approximately 200m north of the Tidal Thames. There is therefore no direct surface water pathway to the Tidal Thames. • An indirect surface water pathway to the river is present via the surface water and combined drainage system and indirect surface water run-off could potentially lead to deterioration of river water quality. Appropriate site drainage as outlined in the CoCP would eliminate this pollution pathway and water quality would consequently be maintained during construction • The modification works would facilitate the control of the Holloway Storm Relief CSO during the operational period, reducing the discharge frequency from currently 9 to 2 times per annum. The total volume of discharge would be reduced from approximately 7,900m³ to 7,000m³ in a year. Approximately 2t of sewage derived litter are currently introduced into the river. This amount would be reduced to 1.8t per year through interception of the CSO. Consequently, river water quality would be enhanced. <p>In summary, the proposals would support the objective. No in-river works are proposed during the construction and appropriate site drainage would ensure that there would be no pollutant run-off into the river. Control of the CSO would result in an enhancement of water quality.</p> <p>Further details can be found in the <i>Environmental Statement</i> and the <i>CoCP</i>.</p>	
<p>Biodiversity</p> <p>Maintain and enhance biodiversity</p>	
<p>Appraisal</p> <p>The proposals would support the objective. Particular issues of relevance to the site</p>	

appraisal include:

- There are no notable terrestrial habitats or species, or the potential for them to be present, on or in close proximity to the site. Consequently, there would be no adverse affects on terrestrial biodiversity.
- Replacement tree planting with native species would be provided for trees removed during the construction period, supporting the objective of maintaining habitat diversity.
- The site is land based and the development would consequently have limited bearing on the objective during the construction period.
- During operation there would be positive effects on aquatic biodiversity due to the reduced amount of sewage and sewage derived litter entering the ecosystem. This reduction would lead to an improvement in dissolved oxygen concentrations and reduce the level of sediment nutrients. Habitat quality and aquatic biodiversity, particularly fish diversity, would be enhanced during operation.

In summary, terrestrial biodiversity would be maintained during construction and operation. Construction at the site would not lead to changes in aquatic biodiversity during construction as no in-river works are proposed. Control of the CSO would enhance habitat quality which would in particular be beneficial to fish populations.

Further details can be found in the *Environmental Statement* and the *CoCP*.

Climate change mitigation

Maximise energy efficiency and minimise the carbon footprint of the project

Appraisal

This objective is most appropriately appraised at the project level, as opposed to the site level. This is because whilst there are variations in energy and CO₂ emissions between sites, in general, these are representative of the different types of site proposed (eg, drive site, CSO interception). The individual sites do not provide an appropriate measure of how far this sustainability objective has been achieved. This is detailed within the *Energy and Carbon Footprint report*.

Procedures to maximise energy efficiency and minimise the carbon footprint of the scheme would be implemented through project-wide initiatives, and not specifically at the site level. Energy Management Plans would be implemented through the *CoCP*, which, alongside Thames Water's proposals to account for carbon emissions throughout the construction process, would assist in the management of emissions arising from the sites.

Energy and emissions are discussed in the thematic appraisal within the climate change mitigation section (see Appendix A). Additional details are also provided within the *Energy and Carbon Footprint report*.

Whilst predominantly addressed at the project-wide level, at the site level it is anticipated that the proposals would broadly support the objective. The following broad issues are anticipated to arise at the site:

- Minor sewer modifications would take place allowing the Holloway Storm Relief CSO to be controlled without being connected to the main tunnel. This would minimise the carbon footprint of the project at a site level by minimising the

<p>amount of construction material and energy needed.</p> <p>In summary, the carbon footprint of the project would be reduced at a site level by controlling the Holloway Storm Relief CSO without connection to the main tunnel.</p> <p>Further details can be found in the <i>Environmental Statement</i>.</p>
<p>Change adaptation and flood risk</p> <p>Maximise resilience and adaptability to change;</p> <p>Take account of flood risk in the design of sites</p>
<p>Appraisal</p> <p>The objective on resilience and adaptability to climate change is predominantly considered at a project-wide level due to relevant changes in population and climate occurring at regional level rather than specifically at a site level (see Appendix A).</p> <p>However, at the site level the proposals would support the objectives to maximise resilience and adaptability to climate change, and take account of flood risk in design. Particular issues of relevance to the site appraisal include:</p> <ul style="list-style-type: none"> • The site is located within a low probability flood zone and implications on the flood risk resulting from the proposed construction are considered to be highly unlikely during the construction and operation phase. • Changes to above ground structures would be negligible and would have no effect on urban heat and would therefore not affect the objective. <p>In summary, the development at this site would have limited bearing on this objective.</p> <p>Further details can be found in the <i>Environmental Statement</i>.</p>
<p>Excavated materials and waste management</p> <p>Minimise waste arisings and its impacts on the environment and communities and to promote re-use, recovery, recycling and beneficial use</p>
<p>Appraisal</p> <p>The proposals would support the objective. Particular issues of relevance to the site appraisal include:</p> <ul style="list-style-type: none"> • A chamber with approximate internal dimensions of 4.6m by 5m and a depth of 8m would be excavated. This would lead to an estimated 680t of excavated material, consisting of site strip (380t), made ground (160t) and London clay (140t). The material would be managed in accordance with the <i>Excavated material and waste strategy</i> (see <i>Environmental Statement</i> Vol 3 Appendix A) that seeks to maximise the beneficial re-use of material. • The selection of the site would make it possible to control the Holloway Storm Relief CSO without connecting it to the main tunnel and therefore minimising the amount of excavated materials. • An estimated 16t of construction waste would be generated. This would be managed through measures set out in the <i>CoCP</i>, including the application of a site waste management plan to maximise re-use, recovery, recycling and beneficial use in accordance with the waste hierarchy. • The removal of trees from the site would generate vegetative waste which would be diverted from landfill unless the material would include invasive plants.

- Operational waste would arise from routine maintenance. The amount would be considered minimal and would not affect the objective.

In summary, the site selection makes connection of the Holloway Storm Relief CSO to the main tunnel unnecessary and therefore minimises the amount of excavated material likely to arise. Excavated material and waste arising would be managed through measures set out in the *CoCP* which promote re-use, recovery, recycling and beneficial use in accordance with the water hierarchy.

Further details can be found in the *Environmental Statement*, the *Excavated material and waste strategy* (see *Environmental Statement Vol 3 Appendix A*) and the *CoCP*.

Resources and raw materials

Promote the sustainable use of resources

Appraisal

The objective to promote the sustainable use of resources is most appropriately appraised as a project-wide issue, rather than specifically at the site level. Whilst it would be important to work towards the objective through ongoing considerations towards the further design of sites, the major opportunities would arise by taking interventions across the project as a whole.

A significant volume of materials would be required to support construction. The material specification required are central to the durability of the tunnel and therefore the scope for promoting the sustainable use of resources is limited by engineering requirements. A range of measures are proposed at the project level which support the objective and which would assist to promote the sustainable use of resources. Further details are available within the resources and raw materials section (Appendix A).

Whilst largely addressed at the project-wide level, at the site level, the proposals would support the objective. The following considerations are relevant to the sustainability at the site level:

- It is estimated that 8,000L of water would be used every 24hours during the peak construction period which is estimated to last 7 months in 2020. This is largely accounted for by 4,000L/d required for chamber grout/concrete and by 3000L/d required for mitigation measures such as washdown and dust suppression. The water requirements are within the available water for London as estimated in Thames Water's Resource Management Plan. Consequently, the volume of water used is considered to be sustainable.
- The site selection makes it possible to control discharges from the Holloway Storm Relief CSO without connection to the main tunnel. This would reduce the amount of resources and raw materials required during the construction period.
- The operation of the site is not anticipated to present a large demand for materials, with the exception of those required for routine maintenance and would not affect the objective.

In summary, modification works at the site minimise the requirements for raw materials and resources. The amount of water needed during the construction period is considered sustainable. Consequently the proposals would support the objective.

Further information can be found in the *CoCP*.

Population, human health and equality

Ensure health and safety, and support the well-being of communities in which the project operates;

Encourage equality and sustainable communities

Appraisal

The proposal would support the objective, albeit some impacts relating to noise would occur. The equality and sustainable communities objective is predominantly addressed within the project-wide thematic appraisal (Appendix A). Particular issues of relevance to the site appraisal include Particular issues of relevance to the site appraisal include:

- The construction work would last approximately 7 months and would be undertaken during the standard working hours, ensuring that there would be no disturbance outside business hours and supporting the well-being of the community.
- Significantly negative adverse daytime noise effects are expected on a number of receptors during the set-up works. The *CoCP* includes measures for the reduction of noise effects, however, as no further on-site mitigation would be possible, measures such as secondary glazing and compensation would be in place for affected receptors. Measures would be in place to off-set such effects where applicable. Health and safety would be ensured but well-being could be affected.
- Mitigation measures in the *CoCP* would ensure that health, safety and well-being would not be compromised by vibration resulting from the development.
- The site is located within the London Borough of Tower Hamlets AQMA. Mitigations measures embedded in the proposals would ensure that health and safety of the community would not be affected through construction at the site.
- A temporary partial closure of Bekesbourne Street would be necessary. A footpath diversion would be in place to ensure the safety of pedestrians.
- Control of the CSO would reduce the number of days recreational river users are exposed to pathogens from 36 days to 8 days. Therefore, health, safety and well-being of river users would be supported during operation.
- Encouraging equality and sustainable communities is predominantly addressed at the project wide level. Extensive public consultation has been undertaken to take into account the community's views on the proposals at the site. Consequently, it is considered that the proposals support the objective of equality and sustainable communities.

In summary, mitigation measures relating to noise, vibration and air quality outlined in the *CoCP* would be in place ensuring health and safety of the community. However, noise effects during set-up works cannot be further mitigated on-site. Some surrounding receptors would experience significant adverse daytime effects relating to noise during this set-up period. Measures would be in place to off-set such effects where applicable. However, it is acknowledged that relocation would not support the well-being of affected receptors. Control of the CSO would be beneficial to recreational river users as pathogen exposure would be reduced. Extensive public consultation has helped to encourage equality and sustainable communities.

Further details can be found in the *Environmental Statement* and the *CoCP*.

Economy

Promote a strong and stable economy

Appraisal

The proposed works would have no effect on the economy arising at a local level. Construction and operation at the site would have limited bearing on this objective.

Further details can be found in the *Environmental Statement*.

Environmental protection and enhancement:

Minimise significant adverse environmental effects relating to air quality, noise and vibration and lighting from construction and operation of the Thames Tideway Tunnel;

Protect and enhance the character of landscapes and townscapes;

Protect and conserve the historic environment.

Appraisal

The proposals would support the objectives with some restrictions concerning significant adverse environmental effects relating to noise. Further, there would be some temporary changes to the townscape. Particular issues of relevance to the site appraisal include:

Environmental effects

- Stringent measures set out in the *CoCP* would minimise significant adverse environmental effects relating to noise and vibration. However, significant noise effects would remain at some receptors during site set-up works. Measures would be in place to off-set such effects, where applicable, as no further on-site mitigation would be possible.
- The site is located within an AQMA. Measures outlined in the *CoCP* would ensure that no significant adverse environmental effects relating to air quality would arise from the development.
- No significant adverse environmental effects would result from lighting at the site.
- The proposals would consequently support the objective as they would minimise significant adverse environmental effects where possible.

Landscape and townscape

- The townscape would temporarily be altered through removal of trees, parking bays and installation of construction facilities. Replacement of trees and reinstatement of the site after the construction period would protect the current character of the townscape. The proposals would therefore support the objectives, albeit with some temporary alterations.
- Due to the low height and size of the above ground structures as well as to the reinstatement of the construction site after completion, there would be no operational effects on the townscape.

Historic environment

- There are no nationally designated historic assets on site and no effects would be expected on nearby listed buildings during the construction or operational

period.

- The potential for buried heritage assets is low. Archaeological watching briefs prior to and during construction would allow preservation by record if necessary.

In summary, the proposals would support the objective as they would minimise significant adverse environmental effects where possible. However, some receptors would experience significant effects relating to noise during site set-up works despite mitigation measures embedded in the *CoCP*. The character of the site and surrounding townscape would be altered during construction. Reinstatement of the site after construction would support the objective. Historic environment and assets would not be affected through the development.

Further details can be found in the *Environmental Statement* and the *CoCP*.

Land use

Efficient and sustainable use of land and buildings

Appraisal

The proposals would support the objectives. Particular issues of relevance to the site appraisal include:

- The use of this brownfield site and modification of existing sewerage structures would make efficient use of existing developed land and structures. Therefore the proposals would support the objective.

Further details can be found in the *Environmental Statement* and the *Site Selection Report*.

Sustainable transport

Minimise the detrimental impacts associated with the transport of construction materials and waste on communities and the environment, by prioritising the use of sustainable transport

Appraisal

The proposal would support the objectives. Particular issues of relevance to the site appraisal include:

- As the site is remote from the Tidal Thames and the volumes of material to be imported and exported are relatively small, it would not be practicable to transport materials through use of river transport. However, detrimental impacts associated with additional road traffic would be minimised through measures set out in the *CoCP* such as provision of a traffic management plan. It is estimated that 10 HGV movements per day would be necessary during the peak construction period which would last 1 month. On average there would be approximately 4 HGV movements per day during the construction phase at the site.
- The PTAL for the site has been classified as 6b, indicating an excellent level of accessibility via public transport. Measures in the *CoCP* such as only allowing vehicles necessary to undertaking works on site would help minimise additional road traffic and therefore would minimise detrimental effects on communities and environment.
- The objective refers to impacts associated with transport during the construction

period and is therefore not applicable during operation.

In summary, the proposals would support the objective as they promote public transport and have embedded measures to minimise detrimental impacts associated with the transport of construction material and waste.

Further details can be found in the *Environmental Statement* and the *CoCP*.

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