Thames Tunnel Consultation
in 14 London Boroughs - see below
Pre planning application Consultation Phase 1

Infrastructure Planning Commission application - pre-application consultation phase 1
Planning Act 2008

The proposal
Construction of a 7.2m diameter tunnel for the collection, storage and transfer of combined sewer overflows (CSOs). The tunnel will extend from Hammersmith Embankment (LBH&F) to Abbey Mills (LB Newham). The tunnel is proposed to have 22 construction sites. Five of these would be main tunnel construction sites combined with CSO connection sites, these would be construction sites for around seven years and are proposed at:

- Hammersmith Embankment
- Barn Elms
- Tideway Walk
- Kings Stairs Gardens
- Abbey Mills

17 of the sites would be smaller, but still significant CSO connection only sites. These would be construction sites for between two and four years.

There are also a number of connecting tunnels to join CSOs to the main tunnel. These extend several miles in some cases and are up to 4.5m in diameter. Therefore these are sizeable projects in themselves although they are less well defined at present.

The construction timeframe is proposed to be 2013-2020.

Affected boroughs
The proposals directly affect the following 14 London Boroughs, and also covers areas of land within the London Thames Gateway Development Corporation area.

<table>
<thead>
<tr>
<th>Ealing</th>
<th>Richmond</th>
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<tr>
<td>Hounslow</td>
<td>Wandsworth</td>
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<td>Hammersmith &amp; Fulham</td>
<td>Lambeth</td>
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<td>Kensington &amp; Chelsea</td>
<td>Southwark</td>
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<td>Westminster</td>
<td>Lewisham</td>
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<td>City</td>
<td>Greenwich</td>
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<td>Tower Hamlets</td>
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<td>Newham</td>
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The applicant
Thames Water Utilities Limited

**Strategic issues**
The principle of the Tunnel is specifically supported in the London Plan and the draft replacement London Plan.

There will be significant construction impacts involving the following issues, for temporary periods of up to 7 years:

- temporary loss of open space (including some Metropolitan Open Land, MOL) and some relatively small permanent losses for ventilation and electrical plant and access hatches.
- impacts on key highways, including parts of the TLRN and SRN and associated bus routes
- works under and close to key London Underground, London Overground, DLR and national rail structures, viaducts and tunnels
- disruption to river passenger services, notably through the removal of Blackfriars Pier
- loss of use of 3 safeguarded wharves for river freight
- impacts on redevelopment opportunities, although in most cases this will be a delay to redevelopment until post construction
- the need to relocate some businesses, both on a temporary and a permanent basis
- the need to divert the Thames Path and National Cycle Route 4
- the need to identify a positive use for the tunnel spoil

The permanent operational phase of the project will

- Comprehensively reduce untreated sewage discharges to the river
- Require significant energy consumption
- Improve river habitat
- Improve river aesthetics
- Reduce river-borne bacteria
- Require a number of relatively small permanent structures up to 10m high and access points to the tunnel
- Present a risk of odour from vent shafts

There will also be opportunities through the project to:

- utilise river transport for bulk construction materials and tunnel spoil
- leave a legacy of operational barges, loading facilities and trained staff to enable further river freight transport
- leave a legacy of river infrastructure such as piers, slipways etc
- improve the Thames Path, National Cycle Network Route 4 and riverside public realm
- create up to 4000 jobs during construction

**Recommendation**
That the Mayor agrees the attached response (Appendices 1, 2 and 3) to Thames Water’s consultation.
Context

1. Thames Water intends to submit an application to the Infrastructure Planning Commission (IPC) for the project outlined above. Section 42 (c) of the 2008 Planning Act places a requirement on applicants of schemes that will be submitted to the IPC to consult with the Greater London Authority. Section 49 of the Act requires the applicant to have regard to any response. Thames Water is currently undertaking the first stage of a consultation exercise on the Thames Tunnel. The consultation is open to the public and closes on 14 January 2011 (put back from the original date of 20 December 2010). The attached reports (Appendices 1, 2 and 3) form the Mayor's response to that consultation. They incorporate the views of Transport for London, Crossrail and the London Development Agency and cover:

- The Mayor's views on the three potential tunnel routes
- General points in relation to the proposals
- The Mayor's views on the construction sites for the preferred tunnel route

2. Once an application has been submitted to and accepted by the IPC the applicant must consult the GLA again (Section 56 (2) (c) of the Act). The GLA can then make representations to the IPC. The IPC is also required to invite the GLA to submit a local impact report (Section 60 (2) (b) of the Act). If the GLA makes representations it may request to appear at a hearing to examine the application.

3. The Localism Bill seeks to abolish the IPC and transfer its functions to the Secretary of State, who will make the final decision on applications. However, it is understood that the role of the GLA in the process will remain.

Background to sewer system

4. The basis of London’s sewerage system was constructed in the mid to late 1800’s to plans set out by Sir Joseph Bazalgette following serious sewage pollution to the Thames. The system was designed to collect both waste water from buildings and rainwater run-off from roofs, roads and open spaces and then transfer these combined flows for discharge to the Thames in east London (Beckton for north London and Crossness for south London). Later sewage treatment works were constructed at Beckton and Crossness to treat the flows before discharge to the Thames.

5. An integral element of the design of the system was the construction of overflow points into the Thames. These were there for times of high rainfall when the capacity of the sewers was overwhelmed, this meant that overflows would discharge to the river rather than streets and properties. As London grew through the later 19th and 20th centuries the system was extended. The density of building in London also increased in many areas and the increased amount of impermeable surface has led to increased rainfall being captured by the combined sewer. This in turn has increased the frequency and volume of overflows into the Thames such that there is now an average of 39million tonnes of combined sewage and rainwater discharged to the Thames each year in around 50-60 events. The European Union has indicated that it believes the system is in breach of the European Urban Waste Water Treatment Directive and has commenced legal proceedings to that effect.
Investigation of the CSO Problem

6 The problem of CSO discharges to the Thames has been around for decades. Until the 1970s/1980s the problem was largely masked by other more continual pollution of the river by industrial processes and lower standard discharges at sewage treatment works. Since then the reduction in pollution has left the Thames as one of the cleanest metropolitan rivers in the world. At the same time however, this has highlighted the impact of the CSO discharges.

7 In 2000 the previous Government established The Thames Tideway Strategic Study to investigate this problem. The group was independently chaired and had membership of Thames Water, Environment Agency, DEFRA, GLA and in its later years Olympics Delivery Authority. The Environment Agency identified that 35 out of the total of 57 overflow structures were actively causing the problems. The group researched the problem and put forward a tunnel concept in 2005. This was further reviewed by the previous Government using consultants Jacobs Babtie before the previous Government announced in March 2007, its in principle support for a tunnel solution. In September 2010, the current Government also confirmed its support for a tunnel solution.

8 The Thames Tunnel is set alongside the other upgrades to London’s sewerage system including the Lee Tunnel which addresses the single largest overflow at Abbey Mills and the £675m upgrades to the five sewage treatment works along the Thames (Mogden, Beckton, Crossness, Riverside and Long Reach in Dartford).

Alternatives to a Tunnel Solution

9 The Thames Tideway Strategic Study examined four strategies for addressing the CSO problem:
   • Interception and transfer – the basis of the proposed solution
   • Sewer separation
   • Rainwater storage
   • In river treatment

10 The investigation, albeit at a high level into the separation of the sewer system revealed that most streets in the inner area of London would need to be dug up and new sewers laid. This would be excessively expensive, considerably more than the current proposal. It would also result in large scale disruption to streets, which are already suffering from large amounts of road works and would take a very long time to implement. This option was therefore discounted. The Mayor remains open to the view that separation may be appropriate in certain locations as opportunities arise and this will help to reduce the amount of surface water entering the combined sewer system. Additionally separated systems also have their own problems of mis-connected sewers causing pollution as is found in many of the outer London tributary rivers where there is a separated sewerage system.

11 Rainwater storage would also be a more expensive option as a very large number of local storage areas would be required. Furthermore it is not feasible to provide enough storage in some of the inner and central areas to alleviate the overflows. This option would also result in the large scale construction works in many open spaces around London and would take many years to become effective. Therefore this option was discounted. The Mayor does however remain convinced that increasing the
permeability of London’s urban fabric will, over time reduce the volume of rainwater entering the combined sewer system and will pursue these options wherever possible in line with the London Plan Sustainable Drainage Hierarchy.

12 The option of in river treatment was quickly discounted as this does not address the problem and given the dynamic tidal nature of the Thames will always be minimally effective.

13 Therefore it seems clear that a tunnel based solution is the most effective way forward. This is why the London Plan expresses specific support for the principle of a Thames Tunnel.

**Cost of the Scheme**

14 Whilst not a planning matter, the Mayor is mindful of the costs of the project. These costs will be borne by increases to water bills of Thames Water customers, both within and outside London. The original costs were estimated at £2-2.5bn, including the Lee Tunnel, which is already under construction. The current scheme has been investigated in more detail and some of the more detailed challenges realised. The current cost estimate from Thames Water is £3.6bn, which includes an undisclosed contingency sum. It is clear from analysis of the sites in Appendix 1 that all of the sites require mitigation measures to limit the construction impacts to an acceptable minimum. In some cases there will be a long list of relatively expensive mitigation measures. Thames Water will need to determine whether these have any further impact on the cost of the project or whether they have been allowed for and the Mayor will be keen to ensure that costs are kept under control.

**Case History**

15 This is the first formal proposal for the tunnel, although as mentioned the concept has been around for approximately ten years and the Mayor has received previous briefings on the issue.

**Current Proposals**

16 The proposals are at a stage where they are still some way from being fully worked up. It is clear that a good deal more work has gone into proving and refining the previous tunnel concept. The proposals show a preferred tunnel route and a series of 22 preferred construction sites. The nature of this consultation exercise may change those preferences. Greater detail and certainty is expected to be forthcoming in the second pre-application consultation phase, planned for summer 2011.

**Strategic planning issues and relevant policies and guidance**

17 The relevant issues and corresponding policies are as follows:

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<thead>
<tr>
<th>Issue</th>
<th>Policies/Strategies</th>
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<tbody>
<tr>
<td>Water quality &amp; sewerage</td>
<td>London Plan, draft National Planning statement on waste water</td>
</tr>
<tr>
<td>Urban design/heritage</td>
<td>London Plan; PPS1</td>
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<td>Open space</td>
<td>London Plan;</td>
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<td>Transport</td>
<td>London Plan; the Mayor’s Transport Strategy; PPG13;</td>
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Climate change  London Plan; PPS1, PPS1 supplement; PPS3; PPG13; PPS22; draft PPS Planning for a Low Carbon Future in a Changing Climate; the Mayor's Energy Strategy; Mayor's draft Climate Change Mitigation and Adaptation Strategies; Mayor's draft Water Strategy; Sustainable Design and Construction SPG

Blue ribbon network  London Plan; Mayor's draft Water Strategy; PPS25, RPG3B, Thames Strategies (Kew-Chelsea, Thames Strategy East and Thames Policy Appraisals for Westminster, City and Lambeth)


Summary of main issues

18 The attached more detailed report (Appendix 1) examines the three suggested tunnel routes. It then sets out the key issues that affect the project as a whole, followed by an examination of how those issues affect each of the 22 preferred construction sites. These issues are summarised in the Strategic Issues section above. There are also more detailed Appendix 2 containing a list of TfL assets that may be affected by the project. (Note this does not include National Rail assets). A further level of detail is given in Appendix 3, which is a letter from Crossrail, where close integration will be required as both projects involve extensive tunnelling and there is at least one point where the tunnels will cross.

Summary of Recommended Mayor’s response

19 Appendix 1 gives the conclusions from a strategic perspective on the basis of the information available at this stage and against the general principle of support for the project.

20 Firstly it identifies that the preferred tunnel route represents the lower impact and lower cost route of the three options, with marginal reduction in operational capacity and hence effectiveness of the tunnel. Therefore it supports the preferred Abbey Mills tunnel route, however the Mayor wishes to see evidence that the proposed tunnelling strategy is the most appropriate in terms of costs and impacts.

21 Secondly, Appendix 1 sets out a range of general issues that will need to be fully addressed in any planning application. It is hoped that further clarity on these will be available at the second consultation stage in summer 2011. These issues are transport, construction impacts (air quality, noise, odour, waste), impacts on open space, public realm and heritage assets, integration with other major construction projects and legacy/re-instatement after construction works. It is clear that all of these issues are major concerns that will need to be addressed in more detail by the time of the second consultation stage. Whilst these may require significant mitigation, monitoring and precautionary works, none of the issues are identified as being fundamental objections in principle to the delivery of the project.

22 Thirdly, Appendix 1 sets out how each of these general concerns and any other specific concerns are likely to arise at each of the 22 preferred sites - on the basis of the information available at present. It is clear that there are no easy sites. All 22 sites
raise issues. The scale of these issues ranges from the generally manageable to some sites where the acceptable management of the impacts will be extremely challenging.

23 Of the 22 sites, 18 are sites where it appears that the preferred site is the most appropriate, provided that a range of mitigation and safeguarding measures are put in place. For two of these sites, the Mayor considers that alternative access arrangements should be examined (Cremorne Wharf Foreshore and Albert Embankment Foreshore).

24 This leaves four sites where the Mayor believes that Thames Water need to re-examine the preferred site in order to identify a lower impact alternative, these four sites are Bell Lane Creek, Tideway Walk, Druid Street and Kings Stairs Gardens. The report states that in each of these cases the preferred site may be able to be made acceptable, but this will be challenging and other options need to be investigated first.

25 Appendix 2 and 3 give more detailed transport related impacts. Appendix 2 refers to sites and structures owned or operated by TfL which may be impacted – note this does not include reference to National Rail assets unless used by TfL services. Appendix 3 is a letter from Crossrail identifying likely impacts on that project.

Public Correspondence

26 There has been a good deal of public interest in the project and inevitably in the particular construction sites identified. A generally common theme appears to be an acceptance of the need for the project but coupled with the concerns about the particular impacts at specified sites. Helpfully, a number of the concerned groups/individuals have identified potential alternative sites.

27 Particular locations where individuals or groups have contacted the GLA include Barn Elms, Kings Stairs Gardens, King Edward Memorial Park and Borthwick Wharf Foreshore.

Local planning authorities’ positions

28 As yet unknown for some affected boroughs, however some boroughs have raised concerns about the principle of the project, notably Hammersmith & Fulham. Other boroughs are known to have raised concerns about particular sites, again Hammersmith and Fulham and also Southwark, Wandsworth and Tower Hamlets. London Councils have also responded to the consultation, providing a balanced viewpoint.

Legal considerations

29 The Mayor supports the principle of a Thames Tideway Sewer Tunnel Project as set out within paragraph 4A.18 of the Draft Replacement London Plan. The Mayor’s comments at this stage will be a formal response to the ongoing consultation.

Financial considerations

30 There are no financial considerations at this stage. However TfL will require funding from Thames Water for the on-going assessment and management of construction impacts in relation to transport assets and services.
Appendices

Appendix 1 Detailed comments
Appendix 2 Spreadsheet of transport impacts
Appendix 3 Letter containing comments from Crossrail

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