

Image courtesy of Thames Tideway Tunnel  
([www.tideway.london](http://www.tideway.london))

# Thames Tideway Tunnel

September 2016

## PROJECT OVERVIEW

**The GBP 4.2bn Thames Tideway Tunnel (“TTT”) project, a 25km tunnel to run beneath the River Thames in the centre of London, is the largest sewer improvement project to be conducted in the UK for over a century.**

TTT will be connected to 34 existing combined sewer overflows running along the River Thames which are owned and operated by existing water utility Thames Water.

Once completed, Thames Water will operate the tunnel as an integral part of the London sewerage network, while Thames Tideway will be responsible for its day-to-day maintenance. Thames Water’s wastewater customers will pay for the TTT through their bills.

Due to the significant scale and complexity of the TTT, the potential for impact on Thames Water’s core business services and the fact that Thames Water already had an extensive capital works program of maintaining and updating its existing infrastructure, it was decided to procure the tunnel via a separate provider, which would become a new utility regulated by Ofwat (the Water Services Regulation Authority for England and Wales).

A competitive procurement process was conducted to select an independent infrastructure provider to finance, build and maintain the tunnel based on the lowest bid Weighted Average Cost of Capital (“WACC”), other commercial factors and deliverability. Bazalgette Tunnel Limited (“BTL”), subsequently known as “Tideway”, was the successful bidder and was granted by Ofwat a project licence to design, construct, finance, test, commission, own and maintain the TTT.

## PROJECT HIGHLIGHTS

Thames Tideway Tunnel is widely considered to be a landmark project and it has received broad recognition for some of its leading features. Some of the project highlights are considered to be:

- An innovative example of a substantive operating utility business contracting out a significant bolt-on project rather than undertaking the project itself.
- Competitive tender process for cost of capital achieved benefits for customers in an uncertain regulatory environment.
- Funding for the tunnel sourced via an additional charge to Thames Water customers estimated to be approximately GBP 20-25 (down from an initial estimate of approximately GBP 70) annually by the mid-2020s. The annual cost will be determined by the final Regulated Capital Value (“RCV”).
- Parallel procurement processes for construction contracts and the infrastructure provider ultimately linking them together.
- Construction arrangements contain an underspend / overspend arrangement between the three construction consortia, Thames Water, Thames Water sewage users and Tideway.
- Tideway will start generating revenue from day one of construction, coming from Thames Water wastewater customers based on the return from the RCV.
- Not all project debt secured at financial close due to length of construction funding period.
- Mechanism for Financing Cost Adjustment, to provide partial protection against movements in the cost of debt when secured, with some of the cost / saving to be passed on to Thames Water wastewater customers under certain circumstances.

*Project Highlights continued...*

### PROJECT HIGHLIGHTS CONTINUED

- Bespoke hybrid contractual and regulatory structure.
- Bespoke government support package purchased by Tideway as an “insurer of last resort” to manage certain key project risks.
- Strong private public working partnership between the private sector project participants and various Government departments.

### PROJECT TIMELINE

A committee to consider solutions to limit the sewage discharge into the River Thames from the Thames Water sewerage network was set up in 2001 and reported on potential solutions in 2005. While awaiting the report, in 2004 the European Commission initiated ‘infraction’ proceedings against the UK for breaching the EU Urban Waste Water Treatment Directive. Further assessment of options continued in 2006 and the UK Government confirmed support for the proposed solution in March 2007. Community consultation on the solution, tunnelling routes and shortlisted sites continued until 2012.

Key dates in the procurement timeline are shown below:

- **October 2012:** Section 48 (publication of proposed application for comment) closed. This process lasted 12 weeks and was the last opportunity for the public to have their say on the proposal.
- **November 2012:** Infrastructure market participants consultation exercise launched.
- **November 2013 – April 2014:** Tender of short listed contractors by Thames Water (on behalf of the yet to be formed Tideway) for construction contract.
- **June 2014:** Tender for equity investment formally launched.
- **September 2014:** UK Government planning approval of TTT.
- **November 2014:** Initial bids from prequalified equity consortia due.
- **February 2015:** Successful contractors for the three main tunnelling contracts announced.
- **July 2015:** BTL announced as preferred bidder.
- **August 2015:** Financial close achieved.
- **August 2015:** BTL received its licence from Ofwat as a new regulated utilities business and announced its trading name of Tideway.



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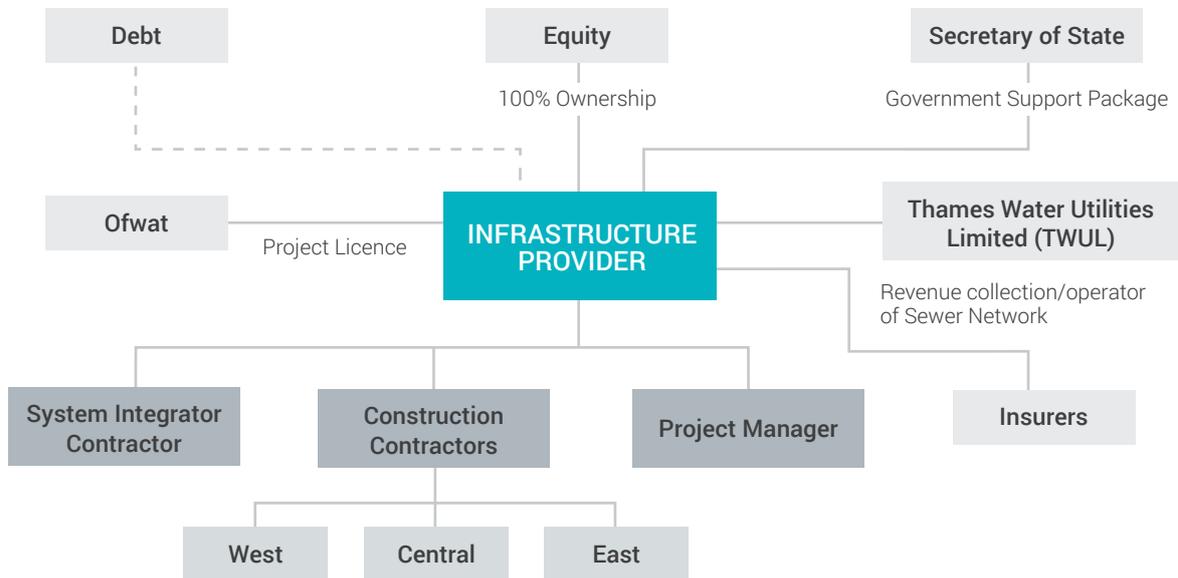
### THAMES TIDEWAY TUNNEL PACKAGE – WHAT DID BIDDERS BID ON?

As the majority of the Tideway structure was pre-set by Thames Water before the competitive equity tender, equity bidders were not permitted much scope to propose changes or adjustments to the mechanics of the deal. As part of the equity bidding process, the successful bidder received the following:

- The Thames Tideway Tunnel Limited entity – a separate, dedicated company created by Thames Water for the purposes of the project. As part of the deal, the ownership of Thames Tideway Tunnel Limited was transferred to the winning bidders so that BTL became the 100 per cent owner of Thames Tideway Tunnel Limited.
- Thames Water’s project preparation works, including design, project approvals and geotechnical and other due diligence.
- Dedicated Thames Tideway Tunnel Limited executive team with lengthy involvement in the project.
- A project manager firm, involved in the project since 2008, competitively procured by Thames Water and subsequently employed by Thames Tideway Tunnel Limited.
- Competitively procured construction contracts (by Thames Water and Thames Tideway Tunnel Limited) which had been announced in February 2015.
- A fully negotiated project licence and suite of project contracts and government support documents.
- Development Consent Order (planning permission).

## CONTRACTUAL STRUCTURE

Diagram acknowledgment: Linklaters



## FINANCING BREAKDOWN

The GBP 1.27bn equity was provided by Allianz Capital Partners (Infrastructure), Dalmore Infrastructure Investments LP, DIF Infrastructure III (DIF III), DIF Infrastructure IV (DIF IV), International Public Partnerships (INPP) and Swisslife.

The total debt to be raised by the business in the construction period is anticipated to be in the order of GBP 2.6bn. A GBP 1.0bn, 10 year, revolving credit facility was raised on financial close. The debt was provided by Credit Agricole CIB, Lloyds Banking Group, Mitsubishi UFJ Financial Group (MUFG & BTMU), Royal Bank of Canada (RBC), Santander and Sumitomo Mitsui Banking Corporation (SMBC). A proportion of the required debt has been sourced from the European Investment Bank (EIB), however at financial close the amount or terms of this debt were unknown.

## CONSTRUCTION

Construction of the tunnel has been split between three construction contracts (West, Central and East) and is expected to take up to 7 years to complete. The construction consortia were procured in parallel with the equity tenders, with construction contracts signed between the initial and final equity bids. Due to the timing, there was no scope for equity holders to carry out any adjustments relating to the construction program or contracts before license award.

As part of the construction contracts procured by Thames Water, on behalf of Thames Tideway Tunnel Limited, a shared construction cost underspend / overspend schedule was agreed for amounts below / above the agreed level of construction costs.

Subsequently, additional incentives have been added for the alliance participants to reward completion in a shorter timeframe than originally contracted.

## BESPOKE CONTRACTUAL AND REGULATORY REGIME

On 24 August 2015, Tideway received its project licence from Ofwat, with the main works preliminary construction beginning in early 2016. The project licence was adapted from the usual water industry utility licences, so it is familiar to investors in the UK water industry, but contains project specific adaptations from the standard existing regulatory regime.

The tunnel is being funded via an additional charge to Thames Water wastewater customers as part of the regular Thames Water billing process. Tideway will be paid by Thames Water on a pay when paid basis (this means when Thames Water collects the payment from customers, the proceeds will be passed on to Tideway). Tideway's revenue is based on the WACC applied to its RCV, with the revenue increasing each year as the RCV increases. The cost per Thames Water sewage user is expected to be around GBP 20-25 annually by the mid-2020s.

For the first time, a competitive tender process was run to establish the cost of capital for the new utility, rather than the WACC being determined by Ofwat (as is the case for other UK water/sewerage utilities through the periodic price review process). As part of the competitive process, the bidders bid a fixed WACC up until 31 March 2030 or the next 31 March date following the post construction review, whichever is earlier ("the reset period"). After the earlier of either of these dates, the WACC will be set by Ofwat in line with the typical UK water/sewerage industry periodic price review practice. Some regulatory guidance was obtained during the process to assist in understanding the factors that will likely be taken into account by Ofwat in making future WACC determinations.

Up until the reset period, the RCV is to be adjusted annually to reflect Tideway's actual historical expenditure for the project and the latest estimates of project. At the reset period, the RCV may be increased / reduced based on the shared construction cost underspend / overspend below / above the agreed level of construction costs (as applicable).

As not all required debt was raised at the project inception, Tideway's licence allows for a finance cost adjustment which, in certain circumstances, will provide an increase or decrease in Tideway's revenue if the market cost of debt raised later increases or decreases (as applicable).

## GOVERNMENT (CONTINGENT FINANCIAL) SUPPORT PACKAGE

A government support package was procured to cover areas the private sector could not reasonably commercially cover (during construction) to mitigate exceptional risks faced by equity and debt:

- Supplemental compensation for claims beyond commercial insurance policy limits / risks beyond commercially available insurance cover.
- A GBP 500m market disruption financing facility in case access to commercial debt / markets becomes restricted.
- Compensation to debt and equity for government cancellation of project.
- Contingency funding (equity of last resort) above agreed capital expenditure limit (approximately 30 per cent of construction overspend threshold before government support).
- "Special administration offer agreement", whereby the UK Government offers to purchase Tideway shares or discontinue the project if Tideway is in special administration for more than 18 months.



Image courtesy of Thames Tideway Tunnel ([www.tideway.london](http://www.tideway.london))

## RISK ALLOCATION

Main project risks are being assumed by:

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<b>Thames Water wastewater customers</b>	<ul style="list-style-type: none"><li>• Part of the risk of cost overruns up to a defined aggregate total spend / threshold outturn (the main works contractors and Tideway also share this risk).</li><li>• Some additional charges required as a result of any finance cost adjustment.</li></ul>
<b>Thames Water</b>	<ul style="list-style-type: none"><li>• Thames Water was responsible for preparing the project technically and remained responsible until the government formally approved the scheme and the project licence was granted to Tideway by Ofwat.</li><li>• Thames Water is responsible for connecting the 34 combined sewer overflows to the Tideway Tunnel.</li></ul>
<b>Construction consortia</b>	<ul style="list-style-type: none"><li>• Individual construction firms are responsible for cost overruns up to a certain level.</li><li>• Beyond the certain level, the three construction consortia share the cost overruns, along with Tideway and Thames Water wastewater customers.</li></ul>
<b>Tideway</b>	<ul style="list-style-type: none"><li>• Responsible for the construction and delivery of the tunnel once the project licence is granted by Ofwat.</li><li>• Financing construction overruns up until an upper ceiling expenditure limit. Funding of these overruns is split between Thames Water wastewater customers, Tideway and the construction consortia.</li><li>• Return on equity capital from 2030 (in accordance with a WACC determined by Ofwat as part of the periodic price review process).</li><li>• Maintenance of the tunnel.</li></ul>
<b>UK Government</b>	<ul style="list-style-type: none"><li>• The contingent financial support package. Full details are listed above.</li></ul>

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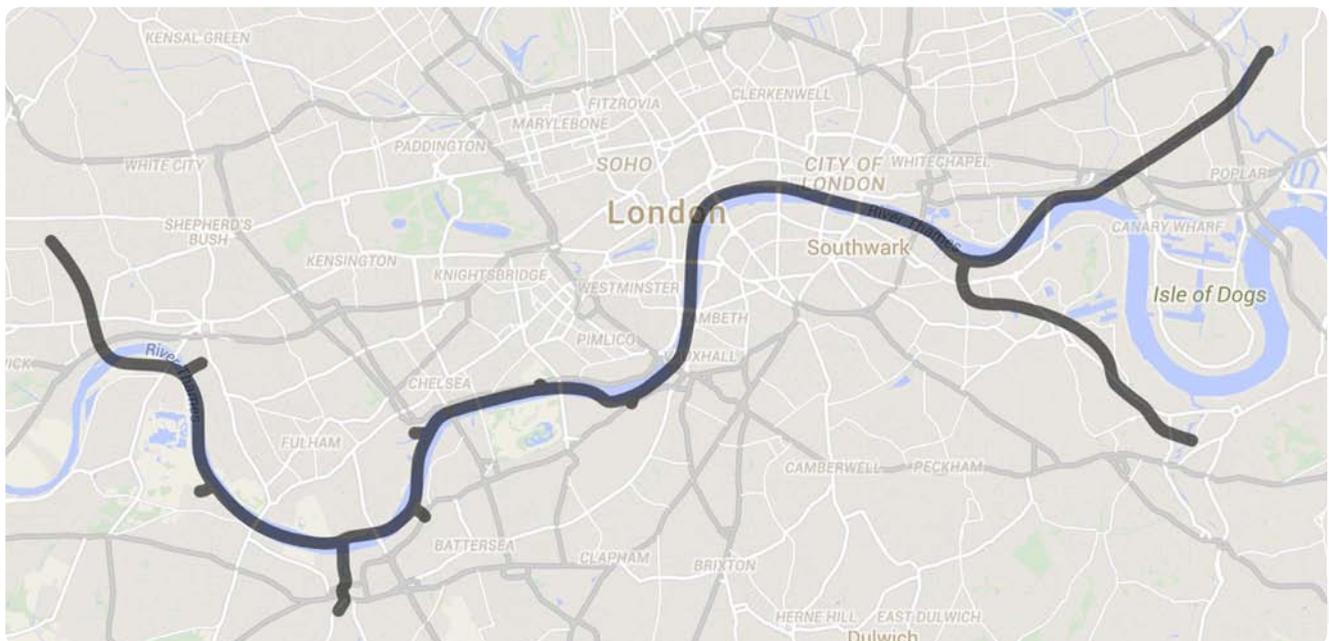
## APPENDIX – DETAIL OF PROJECT

London's Victorian sewers lack the capacity to meet the demands of the vastly increased population in London. The existing sewerage system was designed, when the population was around 2.5 million in London, for a maximum population of 4 million residents. London now has over 8.5 million residents and combined sewer overflows discharge directly into the River Thames more than once a week on average. As little as 2mm of rainfall can trigger a discharge. Designed to connect to an existing sewerage system which is more than 150 years old, the tunnel will connect to 34 of the most polluting combined sewer overflows. The new Thames Tideway Tunnel system is expected to reduce the number of discharges

to a maximum of four annually. Along with other improvements collectively known as London Tideway Improvements, the Thames Tideway Tunnel will assist in reducing an annual estimated discharge of 70 million cubic metres in a typical year by 2020, to 2.6 million cubic metres.

The tunnel will have a 7.2m diameter and will run 25kms (15 miles) from 30m below Acton in the west of London to 70m below Abbey Mills in the east, generally running below the river Thames in London. From Abbey Mills the sewage will enter the existing sewerage Lee Tunnel for transportation to Beckton Sewage Treatment Works where the recycled clean water is then released into the River Thames.

### Thames Tideway Tunnel Route



Additional details on the project and the requirements for the tunnel can be found at:

[www.tideway.london](http://www.tideway.london)

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