

Two-tunnel option: How to halve the cost of the Thames Tunnel scheme



Chris Binnie was Chairman of the Thames Tunnel Strategic Study Group (2000-2006) which originally recommended the long, single tunnel solution to Thames Water. Five years later, Mr Binnie believes that the benefits of this scheme no longer justify the huge costs and that there may be a solution that can deliver sufficient benefits to the river at half the cost.

EXCESSIVE COST

- The estimated cost of the Thames Tunnel Scheme has increased from £1.7billion in 2006 to £4.1billion today. This rises to £4.7billion when the £600million cost of the Lee Tunnel is added.
- The Urban Waste Water Treatment Directive (UWWTD) states that the design, construction and maintenance of collecting systems should be undertaken in accordance with the use of 'best technical knowledge not entailing excessive cost' to limit pollution of receiving waters.

WATER QUALITY STANDARDS

There are three key indicators of river water quality: Dissolved oxygen content; health risks from bacteria, and aesthetics. The Environment Agency sets the water quality standards to be achieved. Are the standards that it has chosen too stringent in relation to costs?

- The sewage treatment works upgrades (cost £0.7billion) and the Abbey Mills to Beckton (Lee or East) tunnel (cost £0.6billion) are already being built and will improve river water quality across all three criteria

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- The upper Tideway (in the West) has 7 of the 10 combined sewer overflows (CSOs) from which spills cause failure of the dissolved oxygen standards that can lead to fish kills. One of the remaining other three is Abbey Mills which is being dealt with by the Lee (East) tunnel.

TWO SEPARATE TUNNELS

- The upper Tideway has limited ability to dilute any CSO discharge. In Binnie's view only the West tunnel, starting at Acton and finishing at about Heathwall, would solve the issues in this section. The West tunnel, therefore, is a necessity in his view.
- The West tunnel is likely to cost around £1.9billion. Connecting the west and east tunnel, which is Thames Water's current single tunnel solution, would cost about a further £2.2billion. However, the East/West tunnels, at a combined cost of about £2.5billion, reduce spill by a quoted 72%.
- The two-tunnel scheme would save around £30 per household every year.

GREENWICH & DEPTFORD

- This solution leaves two CSOs, down river at Greenwich and Deptford, that cause significant dissolved oxygen sags and aesthetic concerns.
- The dissolved oxygen content can be addressed by 'bubblers', as employed very successfully in Cardiff Harbour. The aesthetics of the discharges at these CSOs can be improved by the use of screens, where possible, and skimmers.
- With these localised solutions, much of the benefit of the full tunnel could be achieved by the East/West tunnels.
- The full tunnel would cost an extra £2.2billion for just 22% of additional spill reduction. Surely this extra expenditure amounts to "excessive cost" under the UWWTD or "disproportionate cost" under the Water Framework Directive?

