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Tunnelling study casts doubt over repair cost

It would be cheaper to drive a new Queensbury Tunnel than repair the existing one at the price put forward by the body that looks after it. That's one of several surprising findings contained in a study of tunnelling costs published by the Queensbury Tunnel Society (QTS) which is campaigning for the historic structure to be restored so that it can eventually become the centrepiece of a cycle path network connecting Bradford, Halifax and Keighley.

However the future of the disused railway tunnel is currently under threat because of abandonment plans being progressed by Highways England's Historical Railways Estate (HRE) which examines and maintains it on behalf of the Department for Transport (DfT). Last year Jacobs, HRE's consulting engineers, produced a report on future asset management options for the tunnel which put the cost of abandonment at about £3 million, compared with £35.4 million for repair. Unsurprisingly Robert Goodwill, then Minister of State at the DfT, ruled out repair as too expensive.

Subsequently, a review of Jacobs' report by specialist tunnel engineers found a number of basic and substantive errors, as a result of which the Society asked the Department for Transport to prevent any further abandonment work being carried out until a full and robust examination of options for the tunnel has been undertaken. The DfT has not responded to that request; neither has it made any comment on the "pragmatic and proportionate" remediation scheme - costed at £2.81 million - put forward by the same specialist tunnel engineers.

Norah McWilliam, who leads the Queensbury Tunnel Society, said: "Having ruled out repair on the basis of a deficient report with questionable costings, the Department for Transport now seems to have pulled the shutters down, refusing to even acknowledge a robust repair plan developed by a specialist engineering team which demonstrates that the tunnel could be made safe for public use at a price comparable with abandonment. Our new study provides clear insight into just how inflated that initial costing was. Why did HRE not recognise that? They have serious questions to answer about Jacobs' report, the process that resulted in it being accepted and their subsequent use of it."

The new study has found that, in 2009, another report by Jacobs' put the cost of repairing Queensbury Tunnel's lining at just £1.2 million. The firm's latest figure of £35.4 million therefore represents an increase of 2,850% in seven years and a cost per linear metre of £15,470; that is 24% or 29% more than HS2 expects to spend constructing its new bores (£11,000 or £12,500 per metre, depending on the type of machine used) despite 89% of Queensbury Tunnel being in 'fair' condition. Using unit costs developed for three tunnelling projects in Scotland, the study also estimates that a new Queensbury Tunnel could be constructed for an upper-bound figure of £25.6 million, almost £10 million less than Jacobs' repair cost.



Graeme Bickerdike, who co-ordinated the study on QTS' behalf, said "Right from the outset, everyone we've spoken to about HRE's £35.4 million repair figure - engineers, consultants, contractors, mining specialists - have all regarded it as being 'off the scale'. The work we've just completed has crystallised that view. A secondary, spray concrete lining could be installed from one end of Queensbury Tunnel to the other (2,501 yards/2,287 metres) for less than £10 million; an entirely new tunnel could be driven for about £25 million. How then can Jacobs and HRE seriously believe that it would cost more than £35 million to repair the existing tunnel which, for the most part, is in fair condition?"

HRE's designers are already making progress with the abandonment scheme although physical works are not expected to start until next year. Meanwhile the Society has reiterated its view that all such activity should be halted because the basis upon which the abandonment decision was made - the report produced by Jacobs - was substantially flawed.

The Society would like anyone who shares its vision for the tunnel - and the associated development of a local cycle path network - to sign its ePetition on *change.org* (tiny.cc/QueensburyTunnel).

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The Society invites journalists to ask the Department for Transport why it felt able to rule out the repair of Queensbury Tunnel on the basis of a flawed and inflated costing, but has refused to enter into any dialogue about a robust costing developed by a specialist tunnel engineering team which demonstrates that repair could be carried out for a cost comparable with abandonment.

The Society also invites journalists to ask the Historical Railways Estate whether it still believes that:

- ...most of the northern half of Queensbury Tunnel was driven using a tunnel boring machine in 1877?
- ...the linings of shafts 1, 2, 4 and 8 have structural connections into the surrounding ground, making them almost unique nationally but potentially saving £750,000 in abandonment costs by eliminating the need for concrete support plugs beneath the shafts, as previously specified by Jacobs?
- ...the loading model used by Jacobs to carry out numerical stress analysis of the lining around one of the partial collapses was sufficiently representative of Queensbury Tunnel?
- ...the abandonment of the tunnel's seven construction shafts can be completed for £2 million?
- ...repair of Queensbury Tunnel would really cost £35.4 million?
- ...two ventilation shafts would have to be reopened in order for members of the public to walk/cycle through it safely?



The full tunnelling Cost Comparison report can be downloaded from:

www.queensburytunnel.org.uk/reports/

A collection of high-resolution photos for Media use is available from:

www.queensburytunnel.org.uk/media/imagery.shtml

More general information on the campaign is available from:

www.queensburytunnel.org.uk/

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Notes for editors

Queensbury Tunnel was built by the Great Northern Railway between 1874 and 1878 as part of the Halifax, Thornton & Keighley Railway. At least ten navvies lost their lives during the work which was initially expected to take two years but was delayed significantly by two of the seven construction shafts having to be abandoned due to water ingress.

The tunnel, which is 2,501 yards (2,287 metres) long, opened to freight traffic in October 1878 and passenger trains in December 1879. The line between Holmfield and Queensbury, which included the tunnel, was officially closed on 28th May 1956. Lifting of the tracks took place in 1963.

Queensbury Tunnel would be the longest in the UK to host a shared path if the proposal to reopen it for such a purpose is successful. Currently Combe Down Tunnel in Bath holds that position at 1,829 yards (1,672 metres). The longest in Europe is the 2,931-yard (2,680 metres) Uitzu Tunnel on the Plazaola Greenway in northern Spain. However plans are being developed to restore Rhondda Tunnel in South Wales for cycle path use; this has a length of 3,443 yards (3,148 metres).

The Historical Railways Estate (HRE), part of Highways England, is responsible for inspecting, maintaining and limiting the associated liability from around 3,200 disused railway bridges, abutments, tunnels, cuttings and viaducts. HRE's remit was formerly fulfilled by British Railways Board (Residuary) until its abolition 30th September 2013.