

Forth Road Bridge: Can we fix it? Yes we can!

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Friends of
the Earth
Scotland

Introduction

The Scottish Government announced their intention to build a second Forth Road Bridge on 19 December 2007¹. Friends of the Earth Scotland is concerned at the likely increase in traffic, congestion and greenhouse gas emissions from an additional bridge. The existing Forth Road Bridge can and should be repaired, hence our message: “Can we fix it? Yes we can!” This briefing, prepared for the Transport, Infrastructure and Climate Change Committee meeting of 15 January 2008, sets out our position.

A second Forth Road Bridge – additional or replacement?

The Scottish Government has referred to the new crossing as a replacement crossing. This is potentially misleading, since the final report of the Forth Replacement Crossing Study indicates that any new crossing is likely to be additional². Meanwhile, a report adopted by the City of Edinburgh Council in September 2007 states, in relation to the Forth Replacement Crossing Study, “The study explicitly recognises the possibility (now increasingly appearing to be a probability) that **any new crossing will not in reality replace the existing one, but will operate alongside it.**”³

Meanwhile, although the Scottish Government has estimated the cost of demolishing the current bridge as £128.57m⁴, commentators agree this is not a realistic option since the bridge is a category A listed structure. The Scottish Civic Trust describe demolition as “almost inconceivable”⁵. Meanwhile FETA have confirmed their intention to continue operating the current bridge.

A second Forth Road Bridge – impacts

The September 2007 Edinburgh Council report states that the impacts of an additional crossing, “... are likely to include **large increases in cross Forth traffic** with the associated environmental and congestion impacts, **regardless of whether a new crossing is ‘multi modal’ or not.**”⁶

Meanwhile a study commissioned by Sustran found an additional bridge would cause a 55% increase in traffic over 10 years; a **190% increase by 2026** and that by 2031 all additional road capacity would have been used up⁷. This scenario assumed that bridge tolls remained in place on both the new and existing bridges, and increased in real terms each year. This is now unlikely, so the future increases in traffic levels could be greater than even the Sustran study suggests.

The Standing Advisory Committee on Trunk Road Assessment (SACTRA) has concluded that new roads – particularly estuary crossings – generate new traffic and congestion⁸. It seems clear from the evidence that the effect of a second Forth Road Bridge will be an increase in traffic, congestion and associated CO₂ emissions. Building this bridge would take Scotland in the wrong direction as far as our 80% target for cuts in greenhouse gas emissions by 2050 is concerned.

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Repair of the existing bridge – can it be done?

The report on main cable inspection, commissioned by the Forth Estuary Transport Authority (FETA) in 2006, concluded that, although the bridge, “currently has an acceptable factor of safety”⁹, if corrosion levels in the main cable continue at previous rates, an unacceptable factor of safety could be reached between 2014 and 2020. This would necessitate closure of the bridge, initially to HGVs and then to all vehicles. However, two options for retaining or increasing cable strength exist.

Dehumidification

The FETA-commissioned report on the main cable inspection found that dehumidification (drying out the main cable) has been successfully used on a number of suspension bridges around the world. The report states, “There is strong evidence that these systems are very beneficial in drying out the cable, and by reducing the moisture content below a critical level the rate of corrosion will diminish to a very low level, or may even cease.”¹⁰ The report continues, “The dehumidification system should greatly extend the life of the cables by radically slowing down the rate of corrosion.”¹¹

Replacement or augmentation of the main cable

However, in the unlikely event that dehumidification is not successful, the option of replacement or augmentation of the main cable remains. The preliminary cable repair study published by FETA in June 2007 concludes, “**The replacement or augmentation of the main cables of the Forth Road Bridge presents significant engineering challenges but is achievable.**”¹² Three options are given: replacement cable above the existing cable; augmentation above the existing cable; and augmentation with a new cable to the side. The traffic impacts for the first two options would include temporary closures, while the latter would involve 66 weeks of contraflows spread over three years and “discreet carriageway closures for specific tasks”¹³, but **no complete bridge closure.**

Conclusion: Can we fix it? Yes we can!

It is clear from the evidence that the impact of a second Forth Road Bridge in terms of traffic, congestion and greenhouse gas emissions would be unacceptable and would be contrary to existing and pre-announced Government policy. The studies commissioned by FETA show that the strength in the existing bridge cable can be retained or added to without excessive traffic impacts. To commit up to £4.22bn on an unnecessary bridge is not, in our view, prudent use of public money and would lead to serious environmental consequences.

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¹ Secretary for Finance and Sustainable Growth statement to parliament on 19 December 2007:

<http://www.scotland.gov.uk/News/This-Week/Speeches/Weather-and-Fairer/forthcrossing>

² Transport Scotland (2007) *Forth Replacement Crossing Study, Report 5, Executive Summary*

<http://www.transportscotland.gov.uk/uploads%5Cdocuments%5CFRCS-Report5-Non-Technical-Summary26-06-07.pdf>

³ City of Edinburgh Council (25 September 2007) *New Forth Crossing Options - Proposed Council Response*

⁴ Faber Maunsell, 14 June 2007, *Forth Road Bridge - report on deck replacement - information note*

obtained under freedom of information legislation from Transport Scotland

⁵ Sunday Herald, 23 September 2007, *Transport chiefs may demolish Forth crossing*

<http://www.sundayherald.com/news/heraldnews/display.var.1708372.0.0.php>

⁶ City of Edinburgh Council, 25 September 2007, *ibid*

⁷ MVA consultants (2003) *Sestran Integrated Transport Corridors Study - final report*, p.19

<http://www.sestran.gov.uk/SITCoSFinalReport.pdf>

⁸ Standing Advisory Committee on Trunk Road Assessment (1994) *Trunk Roads and the Generation of Traffic*: “where the existing network is sparse and a large change in network quality occurs as a result of a scheme (for example, the Humber Bridge), significant quantities of induced traffic are unambiguously observed.” (p.165, §11.05)

(Induced traffic is the term given to extra journeys generated by the building of a new route.) The research also states that induced traffic is of most importance in “roads in and around urban areas, estuary crossings, and strategic capacity-enhancing inter-urban schemes (including motorway widening).” (p.170, §11.23 and 15.05)

⁹ Faber Maunsell on behalf of the Forth Estuary Transport Authority, 12 June 2006, *Report on Main Cable Inspection*

¹⁰ Faber Maunsell, 12 June 2006, *ibid*, p. 112

¹¹ Faber Maunsell, 12 June 2006, *ibid*, p. 112

¹² Forth Estuary Transport Authority, 1 June 2007, *Feasibility Study for the Replacement (or Augmentation) of the Main Cables of the Forth Road Bridge – Preliminary Findings*

¹³ Forth Estuary Transport Authority, 1 June 2007, *ibid*