QUEENSFERRY and DISTRICT COMMUNITY COUNCIL

THE NEW FORTH ROAD BRIDGE

WILL IT STRANGLE GROWTH IN SCOTLAND?

INTRODUCTION

This is a paper prepared to brief members of the Scottish Parliament on the shortcomings of the proposed new crossing of the Forth and its southern approach roads. Its object is to examine whether or not the approach roads to the bridge on the south side of the Forth provide the best solution to the problems of traffic and of growth in the economy in the longer term, and whether the existing road bridge should be confined solely to use by public transport and taxis.

TRAFFIC GROWTH AND CONGESTION

Traffic across the existing road bridge has grown by almost five times since the bridge was opened in 1964, and this is in excess of traffic growth throughout the UK generally. (SEE FIG 1) One factor in this growth has been the high cost of residential property in Edinburgh, which has meant that the commuter area for the city has grown to include Fife. While there is a railway link across the Forth, one problem with rail is that it is fixed and does not allow for the fact that much of the commuting traffic is heading not for the centre of Edinburgh, but to locations such as Leith and Livingston.

The growth in traffic has inevitably led to congestion on the bridge and approach roads. The theoretical maximum capacity of a 50mph two-lane road is approximately 3,500 – 3,600 vehicles per hour in ideal road conditions. The FRB already operates close to this capacity in both directions simultaneously for a couple of hours each day, (SEE FIG 2) and when this point is reached congestion occurs and spreads back down

the approach roads. Any factors which slow the traffic (eg weather, slow vehicles, accidents or breakdowns on or around the bridge) will also cause congestion. The new bridge will be carrying all the traffic from the old bridge (save buses and taxis) and from its opening day will suffer from traffic demand that is over its maximum capacity.

Over the period, there has been considerable effort by government at all levels to encourage industrial and commercial development in Fife, Tayside and the Highlands. It is essential that if such growth is not to be smothered by poor transport connections, there should be good and reliable crossings of the Forth. (SEE FIG 3 for forecast traffic congestion).

Transport Scotland when presented with these problems had made much the application of intelligent traffic systems, ITS, to the approach roads, but intelligent traffic systems have limitations and cannot create more space through a bottleneck. It is at its best when controlling the traffic flows through a junction where a fixed interval between traffic light changes could allow congestion on one or two routes across the junction, while there is surplus capacity on other routes. It also works when dealing with a route which can provide extra lanes in one direction only at peak periods. The new bridge will not enjoy any significant benefit from ITS. Peak period speed restrictions will only result in traffic tailing back.

The QDCC believes that the new crossing will do nothing to support or sustain economic growth across that vast part of Scotland that lies north of the Forth; that it is bad value and will lead to expensive remedial measures in the longer term, including new roads and junctions all of which will be more expensive and disruptive than an improved design at the outset. In short, we need the present bridge to be kept open to provide both flexibility and in the future avoid traffic being strangled by being confined to a single bridge with no more capacity than exists at present.

This is no ‘pie in the sky’ or fictitious scenario as the Forth Estuary Transport Authority, FETA, states that if current growth rates are maintained, the present bridge will be carrying close to 30 million vehicles in 2010, (SEE FIG 4) even though it was originally planned with a practical capacity of 11 million vehicles per year. Although later, as part of the Forth Trip Study, the capacity of the bridge was re-assessed at 60,000 vehicles per day, or 22 million vehicles a year, but only if it ran at full capacity for every day of the year. The bridge is therefore currently operating well beyond its practical capacity and traffic growth is continuing unabated, while the new bridge offers no increase in capacity.

THE APPROACH ROADS

This paper deals only with the roads on the south side. If the two bridge arrangement is agreed, re-planning of the north approach roads will be necessary. Originally the bridge approach roads were planned to link the bridge directly to the M9, but the specification for both the bridge and the approach roads has been reduced and the new approach roads will utilise the existing M9 link and the A90, with the road running south of the existing A904 with which it will have a grade separated junction known as the Queensferry Junction. This means that traffic heading to Fife on the M9 eastbound will prefer to leave the motorway at Junction 2 and join the new bridge via the B8046 and the A904 through Newton village, and that route in reverse for M9 westbound traffic.

Transport Scotland’s own figures show that traffic, especially heavy goods vehicles, using this route will increase substantially in future and no doubt at some stage it will be found necessary to by-pass Newton.

The existing junction from the M9 for traffic coming from the junction with the A8 and M8, Junction 1A near Newbridge will be re-configured to give access to and from

the M9 West, taking traffic in a huge sweep along the M9 spur to the east and north before reaching the new bridge. If a direct M9 link was constructed, only a partial refiguring of Junction 1A would be required.

There is another serious problem which arises from using the existing M9 link to reach the A90 and then the new approach road to the new crossing. There is neither the capacity nor the space to handle the planned traffic flows just south of the Echline Junction

The solution is that the approach road plans should revert to the original scheme, which was to build a new two-way grade separated junction over the M9, thus allowing motorway traffic from east and west to run directly along a new approach road to the new crossing.

One other benefit from building the direct link is that with proper road separation both north and south of the new bridge (and full use being made of the FRB) it would be possible to omit the Queensferry Junction, and also the re-bridging of the A8000 (under present plans – to facilitate a bus lane). This means that the direct link to the new bridge coupled with continued car and light van use of the existing bridge would also provide some savings to offset any additional costs that might be incurred.

THE EXISTING FORTH ROAD BRIDGE

Under current plans, the existing Forth Road Bridge will remain in use for buses and taxis. This is partly because of the diversion that the buses would have to make to serve Queensferry once the new bridge opens, but it also recognises that the new bridge does not increase cross-Forth capacity at all. The QDCC argues that allowing cars and light vans (made simple if there is a direct M9 link) to continue to use the existing bridge makes economic sense otherwise the existing bridge will become the world's most expensive bus lane. Even at peak periods, there is just a bus every five

minutes, but often the traffic flow is less than that. There are relatively few taxis crossing the Forth because of the distances, and hence the costs, involved.

Closure of the direct route of the A90 to and from the existing bridge under the Echline Junction will mean that bus drivers using the proposed new bus-only route will, in Transport Scotland's words, have to be 'specially trained'. They also suggest that cars may be allowed to use the route if the new bridge is closed by an accident: in which case one wonders where the car drivers will be 'specially trained', or what the bus company operating the services will do if a specially trained driver is not available?

The Scottish Government's brief to Transport Scotland was that there should be no additional capacity across the Forth. It may be fashionable and 'green' today, but in the future traffic congestion will eliminate any supposed environmental benefits.

The railways can't take traffic off the roads as the lines into Edinburgh are busy enough already, and in any case it is the lorry, and for that matter the express coach, that provides through transport between A and B, with flexibility and economy. There has been a considerable effort in recent years to remove heavy freight trains from the railway bridge because they obstruct the paths needed by commuter trains.

The new bridge will have lanes, in effect hard shoulders, for vehicles that break down on the bridge, but it likely that in the not too far distant future these will have to be utilised as additional traffic lanes to meet rising demand.

THE WAY AHEAD

Neither the Scottish Government nor its agency, Transport Scotland, has been held to account on this matter. The lack of good road connections not just to Edinburgh but onwards to major English centres will mean that much of the money invested in developing the economies of Fife, Tayside and the Highlands will be wasted. The

inability to make the right decisions now will mean that extra costs and disruption will be imposed on the country in the future, and the outcome will be more expensive and less satisfactory than getting matters right at the beginning.

The best way forward is for MSPs to challenge the assumptions made by the Scottish Government and Transport Scotland. The combination of retaining the existing bridge and its approaches in use for cars and light vans as well as buses and taxis and building a direct link accessible with equal ease from east and west between the M9 and the new bridge will be the most cost-effective means of resolving the issues of capacity now and into the longer term. In the event of a serious accident or a vehicle breakdown on either bridge, there will be the flexibility to keep traffic moving, albeit with some delays. The alternative is to divert traffic to the new Clackmannan Bridge, causing congestion on its approaches.

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FIG 1

Indexed Traffic Growth 1966 to 2005 – Forth Road Bridge and GB (1966 =1.00)

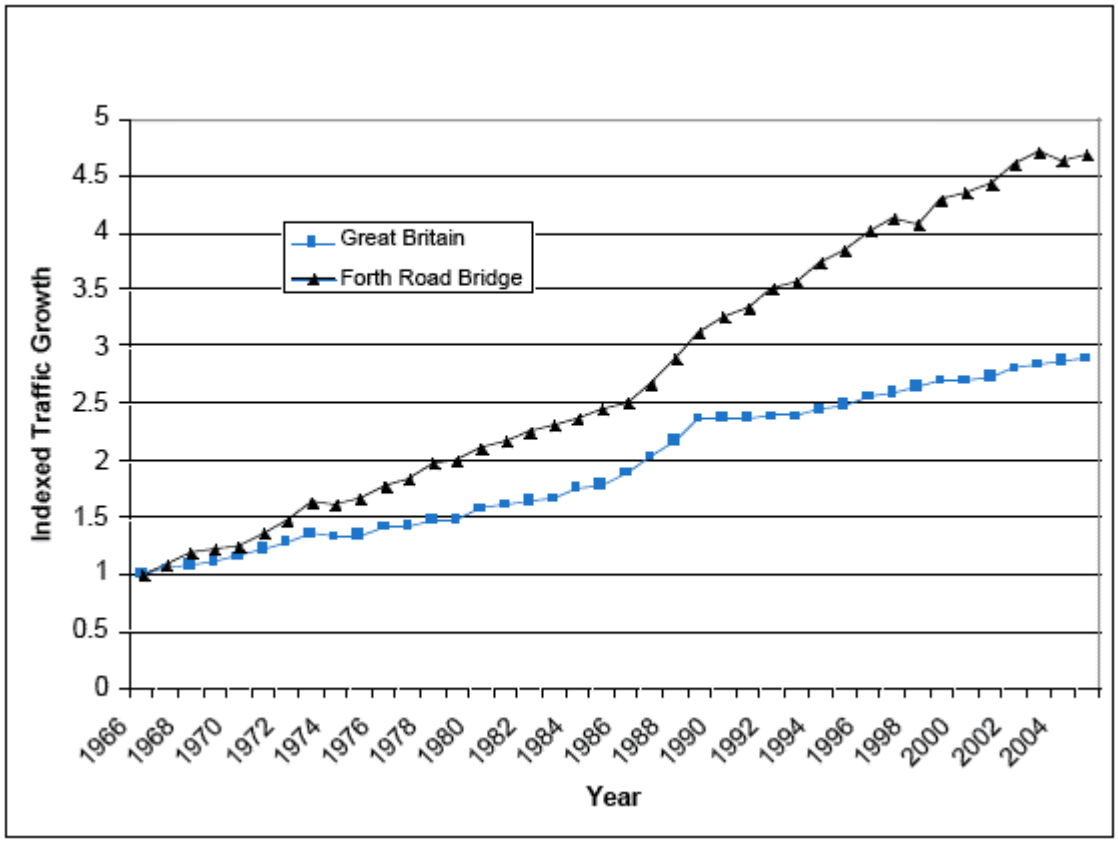

Figure 6.5 above shows the indexed comparison of traffic growth between the Forth Road Bridge and Great Britain. Since 1966 traffic levels on the Forth Road Bridge have increased to approximately 4.7 times that of the 1966 level, while in the GB the levels are just under three times their 1966 levels. This again reflects the above average increase in traffic on the Forth Road Bridge when compared with national traffic growth.

Source : Forth Replacement Crossing - Report 1 - Assessment of Transport Network

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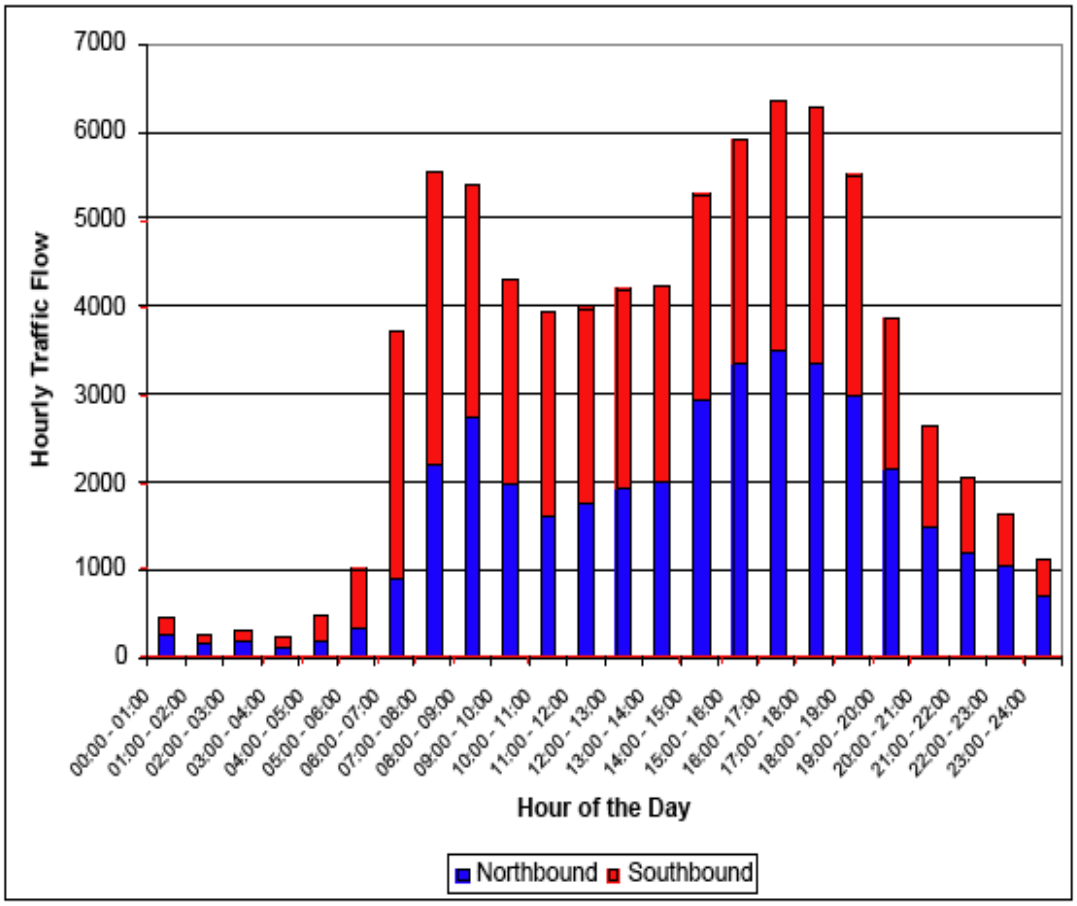
FIG 2

2006 Busiest Day of the Year (28 April) Hourly Traffic Flow – Two Way



Please note these figures are for 2006, and if traffic growth is just 1% per annum, by 2016 these figures will be higher – indicating a widening of the congestion hours shown here

Source : Forth Replacement Crossing - Report 1 - Assessment of Transport Network

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FIG.3

FORECAST TRAFFIC AND CONGESTION

1. There is very little growth in traffic on the Forth Road Bridge in the peak directions, indicating that it is already **at or beyond maximum** capacity;

2.The inter-peak period experiences the highest rates of growth, as the peaks are already constrained by capacity

3. Forecasts of congestion indicators show that congestion is predicted to worsen significantly;

4. Road journey times in the peak to Edinburgh significantly increase in duration, though this is largely due to congestion in Edinburgh itself;

5. Road journey times across the Forth Road Bridge to non-Edinburgh locations do not worsen significantly, indicating that it is already operating at or near capacity in the peak hours. However, the modelling does not take the growth and decay of queues into account;

6. Average road speeds across the SEStran region are forecast to decrease, with Edinburgh experiencing a drop of over 20 per cent by 2022;

7. There is forecast to be little change in the pattern of origins and destinations of those using the Forth Road Bridge;

8. CO2 emissions from transport in the SEStran region is forecast to increase by 26 per cent by 2022

9. Growth in rail patronage is forecast to be modest;

10. Bus patronage is forecast to decline; and bus journey times will lengthen as road congestion worsens.

Source : Forth Replacement Crossing - Report 1 - Assessment of Transport Network

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FIG 4

3 TRAFFIC GROWTH

3.2 Annual Traffic Growth

3.2.1 Traffic growth has been experienced on the Forth Road Bridge since it was opened in 1964 and has continued almost unabated until the present day.

3.2.2 The current traffic volume in the northbound direction increased by 2.7% from 2002 to 2003,resulting in 12.0 million vehicles in the one direction. This equates to over 24 million vehicle trips per year across the Forth Road Bridge.

3.2.3 **IF THESE GROWTH RATES ARE MAINTAINED THEN THE BRIDGE WILL BE CARRYING CLOSE TO 30 MILLION VEHICLES IN 2010**.
The last 3 years' traffic growth have been 2.0%, 3.4% and 2.7% respectively. The bridge was originally expected to have a practical capacity of 11 million vehicles per year. Later, as part of the Forth Trip Study, the capacity of the bridge was further reviewed and it was established that the practical capacity of the bridge was equivalent to 60,000 vehicles per day, i.e. 30,000 vehicles per day in a northbound direction, which equates to 22 million vehicles a year, if it ran at full capacity for all of the 365 days.
THE BRIDGE IS THEREFORE CURRENTLY OPERATING WELL BEYOND ITS PRACTICAL CAPACITY AND TRAFFIC GROWTH IS CONTINUING UNABATED.

Ref – FETA Final Local Transport Strategy Pg 13 of 122 June 2005