

TOLLED BRIDGES REVIEW

PHASE ONE REPORT

29 OCTOBER 2004

FOR THE MINISTER FOR TRANSPORT

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Executive Summary

Background

1. The Tolled Bridges Review is a commitment in the Partnership Agreement – A Partnership for a Better Scotland. This report is the result of Phase One of the Review and has focused on the tolling regimes on the Forth, Tay, Erskine and Skye road bridges. Phase Two will commence in November 2004, and be completed in the summer of 2005. It will consider the broader operational and management issues associated with each toll bridge in Scotland.
2. The Review was undertaken by Scottish Executive officials, in consultation with bridge experts and local authority officials associated with each tolled bridge, as well as a number of interest groups. There was no clear consensus amongst consultees' responses on the future of tolled bridges: some respondents felt all tolls should be removed; some felt tolls should only be levied until construction costs had been repaid; others felt the tolls should be continued or increased, to pay for maintenance, and address congestion and growing traffic trends.

Current Policy

3. Tolls on each bridge were originally set up to pay for the construction and/or ongoing maintenance and operations of each bridge. However, each tolled bridge is unique in terms of its usage, traffic levels, tolling regimes, environmental issues, management arrangements and maintenance requirements. A common approach to tolling (i.e. setting all tolls at the same level or blanket removal) is therefore not appropriate.
4. The Review has been undertaken during a time of public concern about the implications of traffic growth and congestion on the economy and the environment. The Review has thus focused on the strategic implications of various tolling regimes in terms of finance, environment, economic issues, congestion and the impact on connecting road and transport networks.
5. Forth, Tay and Erskine Bridges all have significant commitments that must be funded to meet current and future maintenance and upgrading work. The maintenance requirements for Skye Bridge are considerably lower. Known future costs run to well in excess of £100m for some individual bridges and any consideration of changes in tolling should make provision to ensure that future funding (to meet essential maintenance and capital expenditure) is secure. Any significant reduction in tolling income would therefore increase the demand for direct Scottish Executive funding support.
6. The Transport Model for Scotland (TMfS) was used to model a range of tolling scenarios for Forth, Tay and Erskine Bridges. The scenarios ranged from removing tolls, through to significantly increasing them. Modelling results – covering traffic flows, revenue, congestion, and emissions – are best read as indicative and relative rather than using the absolute values to predict what could actually happen in practice. Given the PA commitment to Skye Bridge, the Review did not consider variations in toll levels beyond removing them.

7. Changes to tolls can affect travel patterns e.g. by encouraging new, additional or longer journeys; and this in turn affects both congestion levels and emissions of greenhouse gases and air pollutants that affect local air quality. Motorists making journeys on congested roads cause delays both to themselves and to other vehicles on that road and the surrounding network. The costs are borne, both by the individual motorist, and by other road users, in the form of increased journey times, safety problems, and pollution. Longer journeys with unpredictable delays add to the cost of industry and commerce. As such, congestion is a significant cost to the economy.
8. Emissions from road vehicles are the largest single cause of local air pollution in Scotland. The Executive has set air quality objectives to be met throughout Scotland by dates ranging from 2003 – 2010. Road transport also accounts for about 11% of Scottish carbon dioxide emissions. The Executive has several commitments to tackling climate change, including working with the UK Government to meet the UK Kyoto target of reducing 1990 levels of greenhouse gas emissions by 12.5% by 2008-2012.
9. Changes to tolls that increase traffic levels, increase congestion or divert traffic into areas of poor air quality could have a detrimental effect on air quality and economic growth objectives.

Forth Road Bridge

10. Opened in 1964, the Forth forms an important link for commuters between Fife and Edinburgh as well as providing a major connection linking routes on the road network in Scotland. Since April 2002 its management, maintenance and operation has been the responsibility of the Forth Estuary Transport Authority (FETA), a Joint Board comprising Fife, City of Edinburgh, West Lothian and Perth & Kinross Councils.

Financial performance

11. The initial tolling period was set until 28 May 1995 and tolls collected were used to service and repay loans and to pay for the operation, maintenance and repair of the bridge. Within this initial tolling period, loans associated with the bridge's construction were repaid, and tolling extensions have since been granted to finance major structural upgrading and ongoing maintenance and operation costs. Tolling income is also now used to support schemes to reduce traffic congestion on the bridge.
12. The bridge requires continuous maintenance and the current rolling programme of bridge maintenance up to 2018 is estimated to cost £112m. These costs should be met through FETA's revenue reserves together with future tolls collected and borrowing.

Environmental issues

13. There are no specific air quality problems immediately around the Forth Road Bridge. However the bridge is a major generator of traffic into Edinburgh with 12% of morning trips across the bridge destined for Edinburgh's city centre. The City of Edinburgh Council has declared an Air Quality Management Area (AQMA) covering the city centre. Any tolling regime on

the Forth Road Bridge which could help reduce congestion in Edinburgh could potentially have a positive impact on the city centre's air quality.

Potential effects of changes in the tolling regime

14. The Forth Road Bridge has the greatest volume of traffic of all four bridges with a daily average of 65,800 vehicles. It operates at its maximum capacity at peak times and consequently suffers severe congestion problems over lengthy peak periods.
15. Decreasing or removing tolls on the Forth has the potential to attract additional traffic, principally from Kincardine Bridge. Additional traffic would increase congestion, extend the length of queues and the duration of the peak periods. Any decrease in tolling income would severely limit FETA's ability to support cross-Forth transport improvements and increase dependency on external financing, including from the Scottish Executive, for bridge maintenance.
16. Significant increases in tolls on the other hand could possibly divert traffic to the Kincardine Bridge, which already experiences severe congestion at peak periods, although the new Upper Forth Crossing may ameliorate this in due course. Results of modelling higher toll increases on the Forth suggest that traffic flows could be sensitive to differential tolls (e.g. higher tolls during peak periods) being used for demand management purposes at peak times as long as viable alternatives (bus, rail and car sharing) were provided to encourage people to switch to more sustainable modes of transport. Toll revenues would increase if tolls were increased although there is not a significant difference between a slight increase in tolls and a major increase due to the drop in traffic levels from the latter scenario.

Tay Road Bridge

17. The Tay Road Bridge spans the estuary of the River Tay between Dundee City and Newport-on-Tay in Fife and its northern exit leads directly into the centre of Dundee. Opened in 1966, the administration, management, maintenance and operation of the Tay Road Bridge is the responsibility of the Tay Road Bridge Joint Board, comprising six councillors from Dundee City Council, five from Fife Council and one from Angus Council. Unlike FETA, the Tay Road Bridge Joint Board has no remit for improving local transport or contributing to other schemes to reduce congestion across the bridge although enabling powers for doing so have been made in the Transport (Scotland) Act 2001.

Financial performance

18. Two-way tolling was replaced with southbound only tolling in December 1991 and tolls, other than for buses, have not increased since then. Around 50% of tolling income is absorbed by finance charges and a significant proportion of the remainder is spent on bridge operations. Legislation requires debts associated with the bridge – approximately £16.6m – to be repaid by 2016/17. However, the current tolls alone are insufficient to repay the loans on time. The capital maintenance programme to 2024 is £28.6m, and enhancements to the bridge are funded through the Board's general reserve or capital grants

from the Executive. Short term maintenance costs to be funded from tolling income.

Environmental issues

19. The Tay Road Bridge is located close to areas of poor air quality, with Dundee considering declaring the city centre an AQMA. These air quality problems are associated with transport air related pollutants. The Tay toll regime could be used to decrease transport over the bridge into the city centre hotspots if the tolls were increased and analysis is currently underway of tolling traffic northbound instead of southbound to help ease the congestion in the city.

Potential effects of changes in the tolling regime

20. The Tay Road Bridge currently handles some 23,800 vehicles per day and suffers congestion during short peak periods due in part to the Northern Toll Plaza's close proximity to Dundee city centre.

21. Modelling shows that removing or decreasing tolls on the Tay has the potential to attract additional traffic principally from Friarton Bridge near Perth and potentially exacerbate the problem Dundee experiences with short spells of congestion at morning and evening peaks. Reducing the toll income would also increase the dependence on Scottish Executive funding and may limit the ability to pay for operations. Removing tolls altogether would result in a loss of income of £3.4m per annum and £15m of loans to be serviced and/or repaid from other sources.

22. Increasing the tolls on Tay diverts traffic to the Friarton bridge. Results of modelling higher toll increases suggests that traffic flows could be sensitive to differential tolls being used for demand management purposes at peak times as long as viable alternatives were provided. Increasing the tolls may offer the possibility to employ surpluses for local transport improvements.

Erskine Bridge

23. The Erskine Bridge, crossing the River Clyde some nine miles west of the centre of Glasgow, was opened in 1971. It is the only tolled bridge run directly by the Executive. The flat rate toll for all vehicles across the Erskine Bridge does not reflect the relative cost of the damage to the fabric of the bridge caused by heavy vehicles.

Financial performance

24. The 1968 Erskine Bridge Tolls Act set an initial 20 year period for the collection of tolls extendable by one or more periods of five years. Schedule 2 to the Act requires that total tolls collected should not exceed the total sum of the capital costs (with interest) of the bridge, the ongoing costs of operating, maintaining and renewing the bridge both during the tolling period and afterwards, and interest on annual shortfalls. Tolling policy at Erskine has been to recover a reasonable contribution to these costs while taking account of the economy of the area, the levels of traffic flow and the close proximity of alternative non-tolled routes, notably the Clyde Tunnel.

25. The accounts for the year to 31 March 2003 shows that tolls collected since the bridge opened have fallen some £260m short of the cap provided by Schedule 2. An analysis of tolls collected and maintenance costs incurred since the bridge opened in 1971 shows surpluses have been registered in most years since 1985. Maintenance expenditure is expected to increase as the bridge gets older and the current estimate of future maintenance expenditure to 2018 is £30.7m. Current projections of income less operational and maintenance costs over the next fifteen years is still expected to be an overall surplus. However expenditure relative to the bridge has to be spread over the lifetime of the bridge and contribute to its future renewal. Income from the tolls is credited to the Executive's transport budget and covers the bridge's maintenance and operational costs.

Environmental issues

26. Any additional traffic flow on the bridge (e.g. generated by reducing or removing tolls) would mean an increase in emissions on the bridge and the southern M8 approach. Conversely if tolls were to increase to the extent that traffic was diverted to alternative routes through Glasgow City, then emissions would increase in the city centre. Whilst there are no specific air quality problems around the bridge itself, Glasgow City Council has declared an AQMA in the city centre.

Potential effects of changes in the tolling regime

27. The bridge currently handles some 26,200 vehicles per day. Traffic flows are more sensitive to changes to toll levels than the other bridges because of close alternative routes – the Clyde Tunnel, the Kingston Bridge, and Great Western Road/Clydeside Express.
28. Modelling carried out so far suggests that removing or decreasing tolls at Erskine could attract traffic from these routes and ease congestion on them. Erskine has some capacity to cope with this increase although depending on the proportion of heavy goods vehicles (HGVs) diverting, would require strengthening to be undertaken at an estimated cost of £20m. Toll revenues would obviously cease, which would have serious implications for the Executive in terms of funding future bridge maintenance.
29. Increasing the tolls would have the opposite effect, with traffic diverting to alternative routes. Modelling of a slight increase in the tolls for HGVs and a slight decrease for non HGVs showed a marginal increase in traffic and similar revenue to the current regime. Further work in Phase Two will consider the more detailed impact of changes to the toll regime, and particularly the consideration of differential toll by vehicle type.

SKYE BRIDGE

30. The Skye Bridge was opened in 1995 between Kyleakin and Kyle of Lochalsh. Following an initiative by the former Highland Regional Council, the then Scottish Office signed a contract in 1991 for the design, build, financing and operation of the Skye Bridge with the developer Skye Bridge Tolls Ltd (now Skye Bridge Ltd).

Financial performance

31. The total cost of the Skye Bridge project was £39m (1991 prices) of which some £15m was publicly funded. The Concession Agreement allows the concessionaire to charge and collect tolls for 27 years or until total tolls collected cover the “agreed costs” as set out in the Agreement (a formula based on achieving £23.64m at 1991 prices). The current estimate of when this sum would be reached is 2012.
32. The Scottish Executive also makes annual payments to Skye Bridge Ltd to compensate for shortfalls in income arising from previous Ministerial decisions to increase discounts for frequent users (1997), freeze tolls at 1999 cash levels and the introduction of VAT on tolls from 2003. This is currently £1.7m p.a. Annual maintenance costs (met by the Bridge Concessionaire) are low in comparison to other bridges and not detailed here as they are commercially confidential.
33. The financial implications of ending the tolling regime are subject to confidential commercial negotiations and therefore not summarised in this report.

Environmental issues

34. There are no air quality problems associated with Skye Bridge.

Potential effects of changes in the tolling regime

35. Some 2,100 vehicles currently cross the bridge each day. Research shows there would be a limited increase in traffic across the bridge with the tolls removed, and no significant effect on the Mallaig - Armadale ferry route, though there are anecdotal local concerns that the removal of tolls could divert coach and other tourist traffic away from the ferry to the bridge. We have not considered the impact of increasing the tolls on the bridge, given the Partnership Agreement commitment to ending the tolling regime.
36. There are no congestion issues associated with Skye Bridge.

PHASE TWO

37. The tolled bridges are major transport assets and are vitally important to the people, local businesses and communities they serve as well as providing strategic links for users of the road network. The White Paper ‘Scotland’s Transport Future’ made a commitment to examine “the broader issues, relating to the management, operation and maintenance of the tolled bridges. This will include an assessment of how tolled bridges relate to the new regional and national transport arrangements.”
38. Ensuring that the bridges operate and are managed in a way that provides optimum benefits at a national and local level will be the main focus for Phase Two. In addition, we will also take the opportunity, where appropriate, to consider issues emerging from Phase One which contribute to the achievement of this objective.

Phase Two terms of reference will include:

39. Management structures and objectives:

- Relationship of bridges to new Regional Transport Partnerships and national Transport Agency
- Consideration of wider remit for management body for each tolled bridge where appropriate

40. Charging principles and objectives:

- Consistency of arrangements for discount schemes (including for high occupancy vehicles), Blue Badge holders and other exemptions (including for public transport)
- Differentiating between heavy vehicles and other vehicles on the basis of damage done to bridge surfaces

41. Procedures for adjusting Tolls or Charges:

- Review of legal procedures

42. Maintenance provision:

- Review of funding arrangements

43. Technological developments:

- Interoperability of infrastructure charging (possible future local and national road pricing)

44. Bridge Specific Issues:

- Erskine – impact on congestion elsewhere in Glasgow, future funding and operation of the bridge, upgrading of tolling administration
- Tay – how tolling arrangements could help tackle congestion and air quality objectives, including relocating toll booths to southern end of bridge
- Forth – how to achieve shift from single occupancy vehicles to multiple occupancy vehicles through differential tolling regimes.

1. Introduction

1.1 Context for Review

The Executive's Partnership Agreement includes the following commitment:

“We will improve access for our rural communities by reviewing existing bridge tolls in Scotland and entering into negotiations with a view to ending the discredited toll regime for the Skye Bridge^a.”

The Scottish Executive's Transport White Paper published on 16 June 2004 outlined the approach for the review of existing bridge tolls in Scotland:

“There will be a two-Phase review of tolled bridges. The first Phase will deal with all existing tolls. It will assess all existing tolls, including the way in which potential changes to tolls could help achieve our environmental and economic objectives of reducing pollution and congestion. The second Phase will include an examination of the broader issues relating to the management, operation and maintenance of the tolled bridges. This will also include an assessment of how the tolled bridges relate to the new regional and national transport arrangements.”^b

In his letter of 2 July 2004 to Phase One consultees (see section 9 - Appendices), the Minister for Transport added that the information gathered from Phase One would help inform any early decisions that may be taken on tolls and indicated his aim of completing Phase One by the end of the summer. This Report presents the findings of Phase One of the Tolled Bridges Review.

The Tolled Bridges Review has been undertaken during a time of keen interest in the concepts of bridge tolling and road pricing in general. Edinburgh City Council is developing a congestion charging scheme, as part of its Integrated Transport Initiative, London is expanding its congestion charge scheme, and in July 2004 the Department for Transport published a report on the feasibility of a national road pricing scheme across the UK.

The interest in tolling and road pricing reflects a growing awareness that on some parts of the road network, the growth in traffic is causing significant economic, social and environmental problems that need to be addressed. These problems include time delays, unpredictable journeys, noise, poor air quality and motorist frustration. There are also impacts on public transport as buses get caught up in congested areas. It is not only congestion that is a problem, though – traffic growth also has implications for climate change, through its contribution to carbon emissions. Congestion charges and road tolls are thus used for a number of reasons. They can help to tackle congestion, raise transport revenues for infrastructure and address environmental impacts.

^a A Partnership for a Better Scotland, Scottish Executive, May 2003
<http://www.scotland.gov.uk/library5/government/pfbs-00.asp>

^b Scotland's Transport Future, Scottish Executive, June 2004
<http://www.scottishexecutive.gov.uk/library5/transport/stfwp-00.asp>

Bridge tolls are not necessarily the same as congestion charges or national road pricing – their objectives may be quite different. When the tolls were started on the bridges, they were all used to fund the construction and/or ongoing operation and maintenance of the bridges. However, given the traffic conditions we now experience in some parts of Scotland, it is important to consider the bridge tolls in this wider context. This is particularly the case because of the Executive’s aspirational target of stabilising road traffic at 2001 levels by 2021 – which is ultimately about limiting road traffic’s impact on the environment and cutting congestion.

1.2 Terms of Reference

In line with the Partnership commitment and the approach set out in the White Paper, the following Terms of Reference were determined for Phase One of the Tolled Bridges Review, each of which is addressed in a separate section of this report:

- Conduct a stakeholder analysis and develop a consultation process for both Phases of the review; (Phase One: section 2; Phase Two: section 8)
- A summary of existing toll regimes, identifying the history of each toll regime, financial performance and projected costs for future operations and maintenance; (section 3)
- Modelling of the past, current, and future trends of traffic levels, differentiated by time of day/day of week/season (including identification of future developments that may impact on traffic levels) (section 4)
- An analysis of the implications of removing the tolls; reducing the tolls; maintaining the status quo; increasing the tolls; differential toll by time of day, car occupancy, vehicle class etc; (section 5)
- Identification of any significant environmental and economic issues (particularly pollution and congestion), that link to the tolls; (section 6)
- Outline how options for changes to existing toll regimes may impact on Ministerial environmental and economic objectives and commitment to improve access for rural communities; (section 6)
- Summary of the main policy, financial and legal implications of making any change to the tolling regime; (section 7)
- Scope and project plan for Phase Two of the review to cover broader issues relating to management, operation and maintenance of tolled bridges and wider consultation. (section 8)

1.3 Review Team

Phase One of the Tolled Bridges Review was led by the Executive’s Roads Policy and Group Finance Division, with support from Executive officials with expertise in: economics; finance; accountancy; environmental issues; legal matters; road network management; PFI issues; and bridge infrastructure. A Project Manager was employed on a fixed term appointment to co-ordinate activities.

2. *Consultation*

Conduct a stakeholder analysis and develop a consultation process for both Phases of the review

The largely factual and technical focus of Phase One of the Review involved a targeted consultation of three groups of stakeholders:

- Members of the Scottish Parliament
- Bridge and Local Authority Transport Officials
- A number of individuals/organisations with an interest in one or more of the tolled bridges.

On 2 July 2004 the Minister for Transport wrote to all Phase One consultees inviting their participation in the Review and seeking their comments on Phase One (section 9 - Appendices): 129 letters were issued to MSPs with 4 responses; 18 letters were issued to Bridge and Local Authority Transport Officials with 18 responses; 21 letters were issued to organisations with an interest in the tolled bridges with 10 responses. 35 written responses were received in total, including 3 from private individuals.

In addition, Executive officials met with tolled bridges and local authority transport officials associated with each bridge. Executive officials also met with Mobility Access Committee Scotland (MACS) in its role as the Executive's advisers on the interests of disabled people in the formulation of transport policies.

The Review Team learned a great deal from the consultation process and extends its thanks to all who participated, both in writing and in meetings. The comments and information received that are relevant to Phase One have been taken into account in the relevant sections of this report, but we have not attributed these comments to specific groups or individuals.

3. Current Arrangements

A summary of existing toll regimes, identifying the history of each toll regime, financial performance and projected costs for future operations and maintenance

There are four tolled road bridges in Scotland: Erskine, Forth, Skye and Tay. All are operated and managed by different bodies, each with a different set of responsibilities and powers. While the four tolling regimes share some original common purposes – that is, to meet construction costs and/or the costs of operating, maintaining and repairing the facility – there are significant differences in tolling tariffs, the legal framework for tolling, and financial performance.

This section outlines the current position at each bridge.

3.1 Erskine Bridge

3.1.1 Operation and Management

The Erskine Bridge crosses the River Clyde some nine miles west of the centre of Glasgow and was opened on 2 July 1971, having cost £10.7m to build. As a trunk road, the Erskine Bridge is the responsibility of the Scottish Executive and is the only tolled bridge in Scotland run directly by the Executive. Bridge operation and maintenance is presently contracted out to AMEY plc. Toll collection is presently contracted to APCOA Parking (UK) Ltd, though this contract is due to end in early 2005; re-tendering has been postponed pending the outcome of the Tolled Bridges Review. The Executive has the option of extending the contract in the short term until decisions about future tolling at Erskine Bridge have been made.

3.1.2 Tolling Tariff

Tolls at Erskine Bridge are levied at a single rate for all chargeable vehicles and are payable in both directions. The toll for cars has been as follows:

From 2 July 1971	15p each way
From 1 November 1981	30p each way
From 1 August 1989	40p each way
Since 1 April 1992	60p each way

The original 15p toll, if recalculated using the RPI, gives a 2003 value of approximately £1.34.

Tolls were originally levied at differential rates by class of vehicle; the earlier tolling orders were not published but full details of the previous rates can be found on request. There are no changes planned to the tolling regime although the current tolling order will expire on 1 July 2006.

Erskine Bridge's flat-rate toll for all vehicles fails to reflect the relative cost of damage to the fabric of the Bridge caused by heavy vehicles.

Exemptions

Exemptions from tolls extend to Blue Badge holders, vehicles exempt from Vehicle Excise Duty, emergency services vehicles, and vehicles used for the maintenance or operation of the Bridge. In addition, the Scottish Executive may authorise exemption for up to five vehicles at any one time belonging to the Princess Louise Scottish Hospital for Limbless Sailors and Soldiers, Erskine.

Exempt and zero-rated (motorcycle) crossings made up 4.3% of all vehicle crossings in the year to 31 March 2003.^c

Discounts

A discount of 10% (equivalent to 6p per trip) is available to any driver purchasing a book of 50 vouchers in advance at a cost of £27 (full price £30). There is no restriction on when the vouchers may be presented at the toll plaza.

1,095,894 vouchers were presented at Erskine Bridge in the year to 31 March 2003, equivalent to 12.1% of all paying vehicle crossings.

3.1.3 Legal Framework for Continued Tolling

Erskine Bridge was built in response to local demand. In terms of wider transport priorities at the time, a new crossing at Erskine was seen by the Scottish Office as being of relatively low priority and the local authorities supporting the calls to build the bridge agreed at that time that tolls should be charged to guarantee funding.

Section 1 of the Erskine Bridge Tolls Act 1968 gives the Scottish Ministers powers to levy tolls. Section 2 provides that the Scottish Ministers may make an Order as to “the classes of vehicles”, “the scales of tolls” and other provisions in accordance with which tolls are to be levied. Section 4 of The Erskine Bridge Tolls Act 1968 set an initial twenty year period for the collection of tolls from the date the Bridge opened, extendable by one or more periods of five years. Schedule 2 to the Act requires that total tolls collected should not exceed the total sum of the capital costs (with interest) of the bridge, the ongoing costs of operating, maintaining and renewing the bridge both during the tolling period and afterwards, and interest on annual shortfalls.

Tolling policy at Erskine has been to recover a reasonable contribution to the Schedule 2 costs while taking account of the economy of the area, the levels of traffic flow, and the close proximity of alternative, non-tolled routes, notably the Clyde Tunnel. Schedule 2 provides a mechanism for setting tolls against a notional debt figure. Economic changes since the Order was made means that that notional debt figure does not serve as an effective cap on tolling (see section 3.1.4 below).

The Toll Order in force for Erskine is the Erskine Bridge Tolls Order 1992^d. This Order continues in force by virtue of the Erskine Bridge Tolls Act 2001. Section 1(6) enables the Toll Order to be varied or revoked in accordance with the procedures outlined in the 1968 Act. If the Toll Order is revoked it would not be possible to make any further Toll Order in the future without further primary legislation. This is

^c Erskine Bridge Accounts 2002-03, SE/2003/337

^d S.I. 1992/433

because section 4(3) of the 1968 Act provides that Toll Orders can only extend a period of tolling. They cannot be used when there is no Toll Order in existence.

The tolls at Erskine can be increased or decreased by a further Toll Order following the procedures set out in section 3 of the 1968 Act. Before the Order can be made the Scottish Ministers have to prepare a draft of the Order and publish it in at least one local newspaper stating the general effect of the Order and outlining where a draft of the Order can be inspected and a date by which any objection to the Order has to be made. Section 3(3) provides that if there is any objection which is not withdrawn and that objection is from the Local Authority or any of the bodies which are referred to in Schedule 1 of the 1968 Act then an inquiry has to be held. The bodies referred to are generally those with some relevant and substantial interest in the bridge such as commercial undertakings and frequent users of the bridge. In those circumstances the Scottish Ministers have to hold an inquiry. If any other objection is received and not withdrawn then the Scottish Ministers may hold a local inquiry if they think fit.

After holding the inquiry the Scottish Ministers may make the Order either with or without modification. Section 3 of the 1968 Act then makes further provision for publishing the Order after it has been made.

By virtue of the Erskine Bridge Tolls Act 2001, the Erskine Bridge Tolls Order 1992 continues in force. If a further Toll Order is made then section 4(3) of the 1968 Act will apply which means that any future Toll Order will expire after 5 years. The 1968 Act at section 2(2) is however flexible enough to allow for different rates of tolls to be applied in different circumstances including time of day, class of vehicle and probably also the number of occupants of the car.

3.1.4 Financial Performance

Schedule 2 to the Act requires that total tolls collected should not exceed the total sum of the capital costs (with interest) of the bridge, the ongoing costs of operating, maintaining and renewing the bridge both during the tolling period and afterwards, and interest on annual shortfalls. Erskine Bridge annual accounts include a calculation in accordance with Schedule 2 to ensure that tolls collected have not exceeded cap provided by Schedule 2. The Schedule 2 calculation for the year to 31 March 2003 shows that tolls collected since the Bridge opened have fallen some £260m short of exceeding the cap. An annual record of tolls collected and maintenance costs since the Bridge opened in 1971 is provided at Section 9 - Appendices. While surpluses have been registered in most years, it is currently the Scottish Executive's position that expenditure relative to tolls should be spread over the lifetime of the Bridge and contribute to future renewal of the bridge, and that this expenditure will increase as the bridge gets older.

The figures at section 9 - Appendices do not take account of operating costs. Tolls are collected on behalf of the Scottish Executive by APCOA Parking (UK) Ltd, which is paid a monthly management fee for collecting tolls, dealing with accidents and breakdowns on the Bridge and for maintaining Bridge tolling property and equipment. These fees amounted to £0.58m in the year to 31 March 2003.

The income from the tolls is credited to the Executive's transport programme for Scotland. From that same programme, maintenance and operational costs for the Erskine Bridge itself are met.

While the Erskine bridge has consistently generated a surplus (as shown at section 9 – Appendices), it has recorded a loss in years when substantial maintenance or renovation was required. While Erskine may be expected to continue to generate similar levels of revenue, there is no long-term structural maintenance programme in place and so future maintenance costs are unquantifiable. This means that there is no guarantee that the expected future levels of revenue will generate surpluses. The projected expenditure on maintenance for the Erskine Bridge to 2018 is £30.7m.

The value of discounts obtained by Erskine Bridge users in the year to 31 March 2003 through the pre-purchase of tolling vouchers was £65,753.

3.2 Forth Road Bridge

3.2.1 Operation and Management

The Forth Road Bridge was opened on 4 September 1964 and forms an important link for commuters between Fife and Edinburgh, as well as providing a major connection linking routes on the road network in Scotland. Since 1 April 2002 its management, maintenance and operation has been the responsibility of the Forth Estuary Transport Authority (FETA). FETA is a joint board comprising the constituent local authorities of Fife, City of Edinburgh, West Lothian and Perth and Kinross Councils. In addition to the management, maintenance and operation of the bridge, FETA has a wider remit to develop, support and fund schemes and measures which it considers appropriate to reduce traffic congestion on the bridge and local transport infrastructure or to encourage an increase in the use of public transport. FETA replaced the former Forth Road Bridge Joint Board which did not have responsibility for measures to improve cross-Forth travel.

As part of its wider remit, FETA has, amongst other things, agreed to fund an off-line dual carriageway upgrading of the M9 Spur/A8000 as its priority congestion reducing transport scheme, and to contribute £0.5m to extend the Ferrytoll Park and Ride site and £0.8m to replace a railway bridge deck at Ferrytoll on the Rosyth Link Road to encourage modal shift.

3.2.2 Tolling Tariff

The current Forth Road Bridge tolling regime was established on 1 September 1997 when two-way tolling was replaced with northbound only tolling. One-way tolling enabled the former Forth Road Bridge Joint Board to reduce delays on the bridge which were creating significant loading safety issues. The tolling cost of a return round trip journey, however, has not increased since 1986. Since the bridge opened, tolls have been set as follows:

Class	4/9/64 Each way	1/11/69 Each way	2/8/82 Each way	1/3/86 Each way	1/9/97 One way
1	12½p	-	-	-	-
2	12½p	15p	30p	40p	80p
3	12½p	25p-50p	50p	70p	£1.40
4	12½p	50p	80p	£1.00	£2.00
5	-	-	-	-	-
6	12½p	£5.00	£10.00	£13.00	£26.00

Key to tolling classification:

Class	Description
1	Motorcycles
2	Cars, goods vehicles and tractors of less than 3500 Kg, and buses constructed for the carriage of up to 16 passengers
3	Buses constructed for the carriage of more than 16 passengers
4	Goods vehicles and tractors greater than 3500 Kg
5	Exempt vehicles
6	Escorted vehicles (abnormal loads)

The original 12½p toll, if recalculated using the RPI, gives a 2003 value of approximately £1.60. As the tolls are now one-way, this figure could be doubled to give a 2003 comparative value of approximately £3.20, compared to the actual current toll of 80p.

Exemptions

Exemptions from tolls extend to motorcycles, Blue Badge holders, vehicles exempt from Vehicle Excise Duty, emergency services vehicles, and vehicles used for the maintenance or operation of the Bridge.

Exempt and zero-rated crossings made up 2.18% of all northbound vehicle crossings in the year to 31 March 2003^e.

Discounts

The Forth Road Bridge operates a discount scheme for drivers of vehicles in classes 2 (cars) and 4 (goods), but not for buses. Class 2 drivers can obtain a 10% discount (equivalent to 8p per trip) by purchasing in advance a book of 50 vouchers for £36.00 (full price £40). HGV drivers can obtain a much larger 35% discount (equivalent to 70p per trip), despite the greater cost of wear and tear from HGVs, by purchasing in advance a book of 50 vouchers for £65 (full price £100). There is no restriction on when the vouchers may be presented at the toll plaza. No discount is available for buses or other public service vehicles.

2,115,793 vouchers were presented at the Forth Road Bridge in the year to 31 March 2003, representing 15.6% of class 2 trips and 64.6% of class 4 trips.

^e Forth Estuary Transport Authority Accounts for the year to 31 March 2003

Although the Forth Road Bridge tolling tariff reflects, to a limited extent, the relative cost of damage to the fabric of the Bridge caused by heavy vehicles, the availability of the class 4 35% discount significantly reduces the tolling differential for almost two-thirds of heavy vehicles. In its draft Local Transport Strategy^f (LTS), FETA highlights that the level of toll levied on the heavy goods vehicles is not commensurate with the loading that they impose on the bridge and conclude that “*the toll regime should more fairly reflect the impacts of different users in the fabric of the bridge and the consequential maintenance and strengthening programmes*”.

Comment has been made during the consultation process that the absence of a discount scheme for buses runs counter to the aims of modal shift and promotion of high occupancy vehicles. Comment suggests support for surplus revenue being used to improve or promote public transport over estuarial crossings.

Proposed Changes

The Forth Road Bridge is now 40 years old and requires repainting and major strengthening works. FETA’s draft Local Transport Strategy reports that current toll levels are insufficient to meet the anticipated costs associated with the Bridge’s maintenance and strengthening programme. Before the start of the Bridges Review, FETA set in motion the formal process to make an application to Scottish Ministers to increase the toll for class 2 vehicles from 80p to £1. Following an objection to this proposal from a single individual, a Public Inquiry beginning on 6 December 2004 will report to Scottish Ministers who will then decide whether to approve or reject the new Toll Order incorporating the proposed increase.

To enable it to undertake its statutory duties and deliver the aspirations of its Local Transport Strategy, FETA will pursue proposals to have an appropriate replacement charging regime in place by 1 April 2006. The policy set out in FETA’s Local Transport Strategy is to promote and operate a charging regime which provides a stimulus for sustainable modes, particularly public transport, and more fairly reflects the impacts of different users on the fabric of the bridge and the consequential maintenance and strengthening programmes. To support this, and to accommodate the upgrade of the A8000, FETA has plans to construct a new £4.5m tolling plaza.

During the Public Inquiry into the Edinburgh congestion charge, the relationship between that charge and Forth Road Bridge tolls was raised as an issue for people travelling from Fife into Edinburgh via the Bridge. Edinburgh City Council and Fife Council are considering the report from the Congestion Charging Public Inquiry before discussing the nature and scale of any discounts in relation to the Forth Road Bridge toll and the proposed Edinburgh congestion charge.

3.2.3 Legal Framework for Continued Tolling

The Forth Road Bridge Order Confirmation Act 1958 set an initial period for the levying of tolls until 28 May 1995 to service and repay loans, including those in respect of the capital costs of the bridge, and to pay for its operation, maintenance and repair. Within this initial tolling period, loans associated with the Bridge’s construction were repaid. Tolling extensions have since been granted on three

^f Forth Estuary Transport Authority Draft Local Transport Strategy, <http://www.feta.gov.uk/webpages/pdfs/lts.pdf>

occasions to finance major structural upgrading and ongoing operation and maintenance costs. The current order extends tolling to 31 March 2006[§].

3.2.4 Financial Performance

The original cost of the project to build the Forth Road Bridge was £19.5m and was repaid in 1993. Since then, tolling income has been sufficient to meet the ongoing care and maintenance, capital improvement costs of the Bridge and to provide for improvements in cross-Forth crossings.

Tolling income is the sole source of revenue available to FETA to meet the care and maintenance costs of the Forth Road Bridge. Annual tolling surpluses are re-invested in maintaining the integrity of the Bridge and supporting schemes which reduce traffic congestion on the bridge or encourage an increase in the use of public transport. Tolling surpluses are therefore applied directly to benefit Forth Road Bridge toll-payers in terms of reduced journey times and alternative modes of estuarial crossings.

The Forth Road Bridge requires continuous maintenance and over the fourteen years from 2004 to 2018 a rolling programme of bridge maintenance schemes is scheduled with an estimated capital cost of around £112m. Major elements of this programme include suspended span painting, bridge strengthening and more regular resurfacing due to a significant increase in loading on the Bridge. A current inspection of other structural components may identify further areas requiring additional maintenance expenditure over and above the £112m referred to above.

It is expected that these costs, in addition to costs associated with FETA's wider remit, will be met through revenue reserves (£16.5m at 31 March 2003) together with future tolls collected and borrowing.

Capital grants from the Executive of around £2m pa from 2006/07 are linked to the M9 Spur/A8000 scheme which will connect the Bridge to the central Scotland motorway network. There is no central funding of the Forth Road Bridge care and maintenance programme.

The value of discounts obtained by Forth Road Bridge users in the year to 31 March 2003 through the pre-purchase of tolling vouchers was £438,595.

3.3 Skye Bridge

3.3.1 Operation and Management

The Skye Bridge was opened on 16 October 1995 between Kyleakin and Kyle of Lochalsh. Following an initiative by the former Highland Regional Council, the Scottish Office (now the Scottish Executive) Development Department signed a contract in December 1991 for the design, build, finance and operation of the Skye Bridge with the developer Skye Bridge Tolls Limited (now Skye Bridge Limited). The bridge was subsequently built at the expense of the developer who now operates and maintains it and charges tolls to recover the costs incurred, including the financing costs. The Skye Bridge was one of the earliest completed PFI projects.

[§] Forth Road Bridge (Toll Period) Extension Order 1997

3.3.2 Tolling Tariff

As the tolls reflect the previous ferry fares, Skye operates the most complex of Scotland's bridge tolling regimes with eight separate vehicle classes and some seasonal differentials. Tolls are currently charged in each direction as follows:

Effective from 1 January 2000	High (each way)	Low (each way)	Discounted price (each way)
Motorcycle	£2.90	£2.40	£0.67
Car (includes caravans and trailers)	£5.70	£4.70	£1.34
LGV (< 7.5 tonnes)	£10.80	£10.80	£7.84
HGV1 (< 4 axles)	£14.00	£14.00	£10.13
HGV2 (4 or more axles)	£27.90	£27.90	£20.26
Local Service Bus	£16.40	£16.40	£12.26
Midi Coach	£23.70	£15.80	-
Coach	£41.20	£27.90	-

In the above tables "high" means high season being 1st May to 30th September and "low" means low season being 1st October to 30th April.

The original tolling tariff was as follows:

	High (each way)	Low (each way)
Motorcycle	£2.25	£1.85
Car	£4.50	£3.70
LGV	£8.50	£8.50
HGV1	£11.00	£11.00
HGV2	£22.00	£22.00
Local Service Bus	£12.90	£12.90
Midi Coach	£18.65	£12.40
Coach	£32.50	£22.00

Scottish Ministers gave a commitment in Making it Work Together – A Programme for Government^h to freeze Skye tolls at 1999 cash levels for the remainder of the concession period. This took effect from 1 January 2000.

Exemptions

Emergency service vehicles and vehicles exempt from Vehicle Excise Duty are exempt from tolls. Exemption does not extend to Blue Badge holders.

Discounts

Discounts are available to Skye Bridge users on the purchase of 20 non-transferable tickets in the case of a motorcycle or car, and 10 non-transferable tickets in all other eligible cases. Although representing a saving to bridge users, the Skye Bridge discount scheme is underwritten by the Scottish Executive which makes good the value of discounts to the concessionaire so that the period of the concession is not prolonged.

^hPartnership for Scotland, An Agreement for the First Scottish Parliament, May 1999

In the year to 31 December 2003, 58.2% of all chargeable vehicles (including 57.2% of cars) travelled across the Skye Bridge at a discount.

Proposed Changes

The Partnership Agreement includes the following commitment: “*We will improve access for our rural communities by reviewing existing bridge tolls in Scotland and entering into negotiations with a view to ending the discredited toll regime for the Skye Bridgeⁱ*”. Assuming no unforeseen problems arise in discussions with the bridge operator the Executive aims to achieve this by the end of this year.

3.3.3 Legal Framework for Continued Tolling

The tolls on the Skye Bridge are provided for under the general powers for toll roads in Part II of the New Roads and Street Works Act 1991. Using the powers in section 28 of this Act the rights to charge and to collect the tolls have been assigned to Skye Bridge Ltd, known as “the concessionaire”. The Invergarry-Kyle of Lochalsh Trunk Road (A87) Extension (Skye Bridge Crossing) Toll Order 1992 (S.I. 1992/1501)^j (as varied by S.I. 1997/2941 and S.S.I. 1999/196) specifies the maximum tolling tariff.

The concession to charge and collect tolls will end after 27 years, or when the concessionaire has recovered the agreed costs of £23.64m at 1991 prices in accordance with an agreed formula in the Concession Agreement, which is the basis of current negotiations in commercial confidence with Skye Bridge Ltd. Current traffic projections estimate that the bridge will have paid for itself and be free in 2012.

Comment was made in the consultation which questioned the legality of the tolling regime on Skye. Consideration of this question is outwith the terms of reference of the Tolloed Bridges Review.

3.3.4 Financial Performance

The total cost of the Skye Bridge project was £39m (at 1991 prices) of which some £15 million was publicly funded. The remaining £23.64m is the agreed cost at 1991 prices to be recovered through tolling by the concessionaire.

The value of tolls collected (including the value of discounts made good by the Executive) is deducted from the concessionaire’s agreed costs. Tolls collected between October 1995 and June 2003 amounted to £27.2m in cash terms but this is not directly comparable to the 1991 agreed costs, as it is necessary to take account of inflationary and other factors within the concession agreement contract. The detailed terms of that contract are now the subject of commercially confidential negotiations with Skye Bridge Limited and cannot be reported here. However, the agreed costs of £23.64m at December 1991 prices have not yet been recovered.

The Scottish Executive also makes annual payments to Skye Bridge Ltd to compensate for shortfalls in income arising from Ministerial decisions to increase

ⁱ A Partnership for a Better Scotland, Scottish Executive, May 2003

<http://www.scotland.gov.uk/library5/government/pfbs-00.asp>

^j S.I. 1992/1501

discounts for frequent users (1997), freezing tolls at 1999 cash levels and the introduction of VAT on tolls from 2003 (currently c. £1.7m p.a.).

The expected maintenance costs for the bridge for the remainder of the base concession period are expected to be less than £1m.

3.4 Tay Road Bridge

3.4.1 Operation and Management

The Tay Road Bridge spans the estuary of the River Tay between Dundee City and Newport on Tay in Fife and its northern exit leads traffic directly into the centre of Dundee. It was opened to traffic on 18th August 1966. The administration, management, maintenance and operation of the Tay Road Bridge is the responsibility of the Tay Road Bridge Joint Board (TRBJB) as confirmed in the Tay Road Bridge Confirmation Act 1991. TRBJB comprises six Councillors from Dundee City Council, five from Fife Council and one from Angus Council. Unlike FETA, TRBJB does not presently have a wider remit for improving local transport or contributing to other schemes to reduce congestion across the Bridge, although there are enabling powers for doing so in the Transport (Scotland) Act 2001.

3.4.2 Tolling Tariff

The current Tay Road Bridge tolling regime was established on 1 June 1995 when the toll for Class 4 vehicles (buses constructed for the carriage of more than 16 passengers) was increased by 60p to £1.40 to bring it into line with that at the Forth Road Bridge. Class 3 and Class 5 tolls (which together applied to over 95% of southbound traffic in the year to 31 March 2003) have not increased since December 1991, when two-way tolling was replaced with southbound only tolling.

Since the bridge opened, tolls have been set as follows:

Class	2/8/66 Each way	8/3/81 Each way	19/8/84 Each way	1/12/91 One way	1/6/95 One way
1	exempt	exempt	exempt	exempt	exempt
2	5p	5p	10p	exempt	exempt
3	12½p	20p	30p	80p	80p
4		30p	30p	80p	£1.40
5	50p	60p	75p	£2.00	£2.00
6 and 7	Exempt	Exempt	Exempt	Exempt	Exempt

Key to tolling classification:

Class	Description	Toll
1	TRBJB vehicles	Exempt
2	Motorcycles	Exempt
3	Cars, goods vehicles and tractors of less than 3500 Kg, and buses constructed for the carriage of up to 16 passengers	£0.80
4	Buses constructed for the carriage of more than 16 passengers	£1.40
5	Goods vehicles and tractors greater than 3500 Kg	£2.00

6	Emergency services	Exempt
7	Blue Badge holders	Exempt

The original 12.5p toll for a single crossing is recalculated using the RPI to a 2003 value of approximately £1.47. As the tolls are now one-way, this figure could be doubled to give a 2003 comparative value of approximately £3, compared to the actual current toll of 80p.

Exemptions

Exemptions from tolls include motorcycles, Blue Badge holders, vehicles exempt from Vehicle Excise Duty, emergency services vehicles and vehicles used for the maintenance or operation of the Bridge.

Exempt crossings made up 3.79% of all southbound vehicle crossings in the year to 31 March 2003^k.

Discounts

Tay Road Bridge is the only one of Scotland's four tolled Bridges which does not offer a discount to users.

Proposed Changes

On 15 July 2004, the TRBJB applied to introduce a 10% discount voucher scheme for those users purchasing 50 vouchers in advance. The Executive has advised TRBJB that decisions on any future changes to tolls will be taken in the light of the Tolled Bridges Review.

TRBJB is presently reviewing the tolling arrangements on the bridge to renew the toll collection equipment and to reduce city centre traffic queues at peak periods. Options being considered include southbound tolling on a new and widened plaza at the Dundee end of the bridge or northbound tolling located at the Fife end of the bridge.

3.4.3 Legal Framework for Continued Tolling

The Tay Road Bridge Order Confirmation Act 1991 provides for the levying of tolls until all loan charges, and other specified payments, advanced by local councils and the Scottish Executive (and, formerly, the Secretary for State) have been repaid (with interest)^l, provided that the Scottish Ministers are satisfied that adequate provision has been made for the continued administration, management, operation, maintenance and repair of the Bridge.

3.4.4 Financial Performance

The TRBJB's loan debt at 31st March 2004 amounted to approximately £16.6m representing sums owed to Angus Council (£0.7m), Dundee City Council (£7.8m), Fife Council (£5.6m) and the Scottish Executive (£2.5m) in connection with bridge construction and other capital works. The provisions of the Tay Road Bridge Order Confirmation Act 1991 require these debts to be fully repaid by the Bridge's fiftieth anniversary in 2016/17. An analysis of the maturity of the loans debts shows that

^k Tay Road Bridge Joint Board Accounts 2002-03, Traffic Analysis

^l Section 55, Tay Road Bridge Order Confirmation Act 1991

approximately £6m matures between 2008 and 2013 and a further £3m thereafter. Break costs may act as a disincentive to paying off these debts earlier than scheduled.

In addition to financing loan repayments, the TRBJB's capital maintenance programme for the twenty-year period to 2024 amounts to £28.6m. A large proportion of these costs falls in the short term, with around £15m needed to meet the cost of bridge bearing repair/replacement and the replacement of the existing tolling equipment. Around 50% of tolling income is currently absorbed by finance charges, with a significant proportion of the remainder required for bridge operations. Short term maintenance costs are met from tolling income, while work that improves or enhances the bridge is funded by capital grants and the TRBJB's own general reserve.

3.5 Current Arrangements – Key Points

- Different tolling structures operate on each bridge. Erskine has a single year-round rate, charged in both directions. Skye Bridge has twelve different rates which apply according to vehicle type and season charged in both directions. Forth and Tay both have the same three basic year-round charges based on vehicle type, Forth tolling only northbound traffic and Tay only southbound.
- The current tolling cost of a round trip journey has been in place since:

1 March 1986	Forth (all classes)
1 December 1991	Tay (cars and HGVs)
1 April 1992	Erskine (all classes)
1 June 1995	Tay (buses)
1 January 2000	Skye (all classes)

- Tay is the only Scottish tolled bridge without a discount voucher scheme. Elsewhere the availability and value of discounts differ according to Bridge and vehicle type. Savings in operators' cash handling costs are offset by administrative costs and their true cost to operators may be greater than the savings enjoyed by users.
- Heavy vehicles cause the greatest damage to bridge surfaces. This suggests there should be a formal relationship between vehicle type and amount of toll. This relationship is absent at Erskine and diminished at Forth by the well-used class 4 discount scheme.
- None of the Bridges offer discounts or exemptions to buses or rescue and recovery vehicles, although during the consultation process a number of people and organisations suggested that this should be reconsidered on the grounds that such vehicles contribute to reductions in congestion which in turn bring environmental and economic benefits.
- Annual tolling income is applied in different ways at each Bridge: at Forth, tolling income pays for operational and bridge maintenance cost, and for local transport improvements; at Tay, tolling income pays for operational costs and additionally services outstanding loans; at Erskine, tolling income is credited to Scotland's transport programme, from which the Bridge's operational and

maintenance costs are paid; and at Skye, tolling income pays for operational costs and repays the concessionaire's agreed costs of the design, financing, construction and operation of the crossing.

- The Tolled Bridges Review is being undertaken at a time when each Bridge is facing different issues. FETA has just finished consulting the public on its draft Local Transport Strategy. TRBJB is considering options for relocating the tolling plaza. The Scottish Ministers have committed to ending the discredited regime at the Skye Bridge by the end of 2004.

4. Traffic Trends and Growth

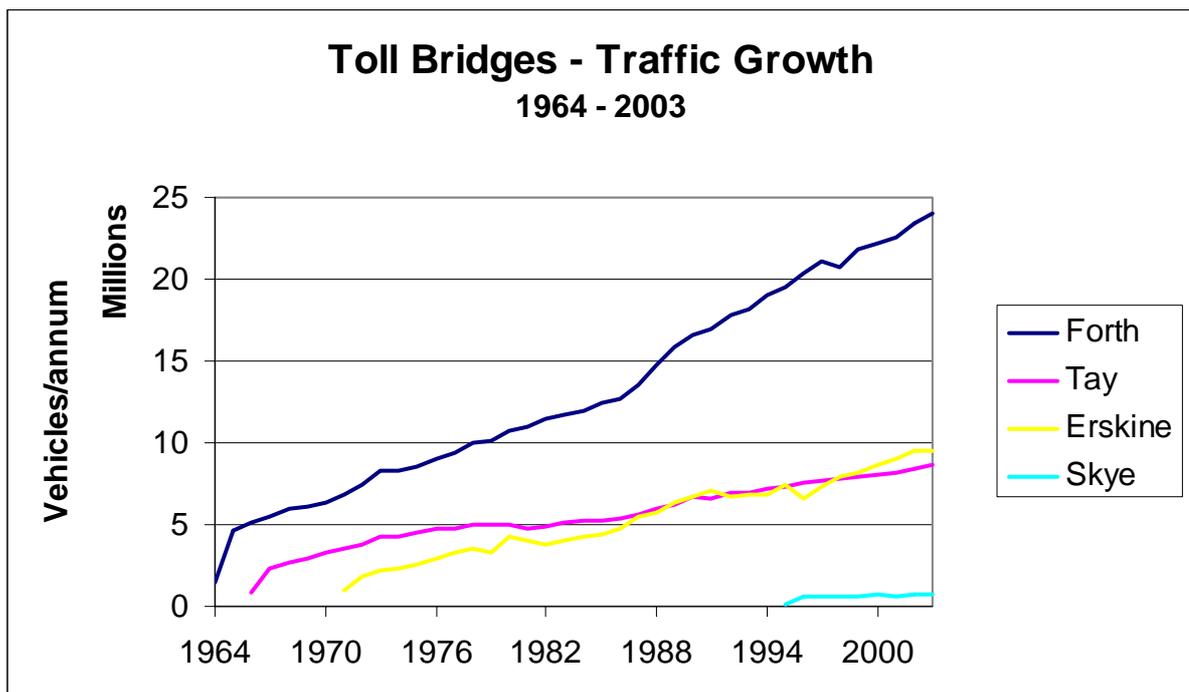
Modelling of the past, current, and future trends of traffic levels, differentiated by time of day/day of week/season (including identification of future developments that may impact on traffic levels)

4.1 Historic Growth Patterns and Traffic Characteristics^m

In this section, information about past, current, and future trends of traffic levels is presented and analysed.

4.1.1 Traffic Growth

Toll collection records have been examined for the four bridges since the respective opening dates and the annual figures plotted to show the traffic growth on each bridge. The figures represent two-way flows and have been adjusted as appropriate to take account of periods when no tolls were collected for various reasons. Where bridges are now tolled in one direction only, the flow in the toll direction has been doubled as a proxy. It is however acknowledged that the non-toll direction can be in the order of 3% - 5% higher in such circumstances.



Generalised observations from this graph are:-

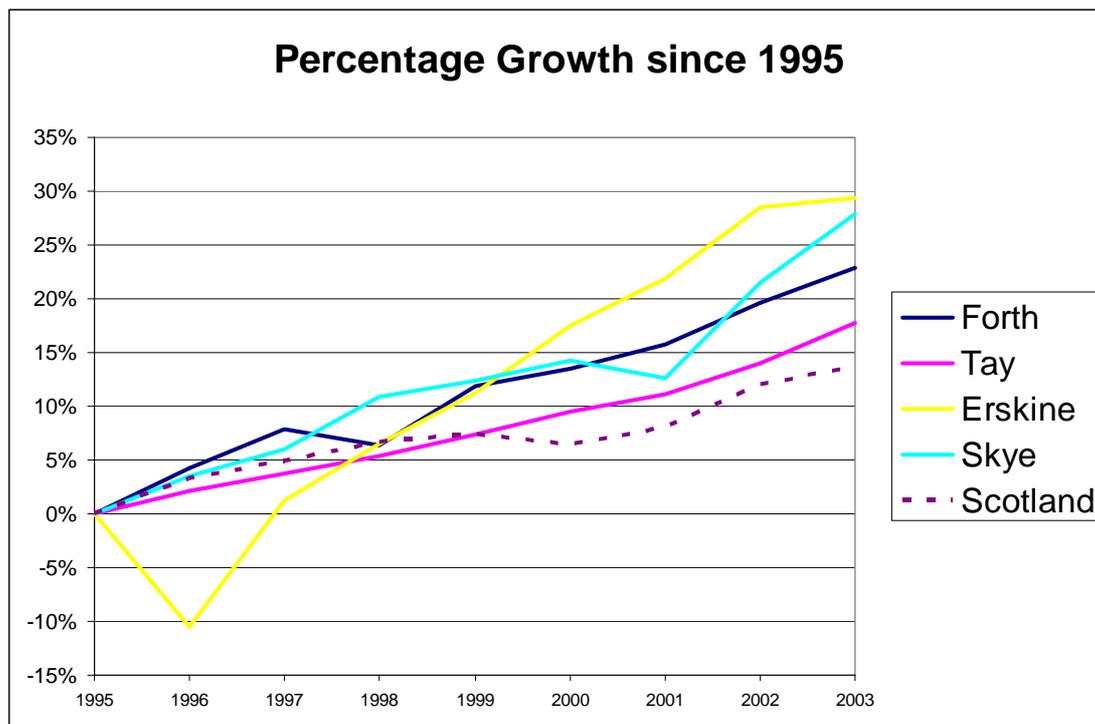
- Steeper gradient indicates faster growth. Therefore Forth is generally growing faster over the long term.

^m Data sources: FETA, Tay Road Bridge Joint Board, Erskine Bridge Toll data and Skye Bridge Toll data.

- The graph indicates the relative scale of the annual flow over the respective bridges. The Skye flow is small in comparison with the other bridges. The flow over the Forth Bridge is more than double the Tay and Erskine flows.
- When Erskine Bridge opened to traffic in 1971 its traffic flow was substantially lower than the Tay Bridge but the position has now changed with Erskine now exceeding the Tay flow, particularly as a result of the increases experienced on Erskine since 1997. The flat part of the Tay Bridge curve in the late seventies/ early eighties reflects the opening of Friarton Bridge and completion of the M90 to Perth. This has had the effect of diverting traffic from the Tay Bridge to the Friarton crossing.

4.1.2 Growth Trends

A more detailed examination of traffic growth trends since 1995, when the Skye Bridge was opened to traffic, is presented below. These curves have been drawn using 1995 as the base and the years plotted as a percentage of the base for each bridge respectively. For comparison the growth recorded for major roads in Scotlandⁿ is also shown.



Generalised observations from this graph are:-

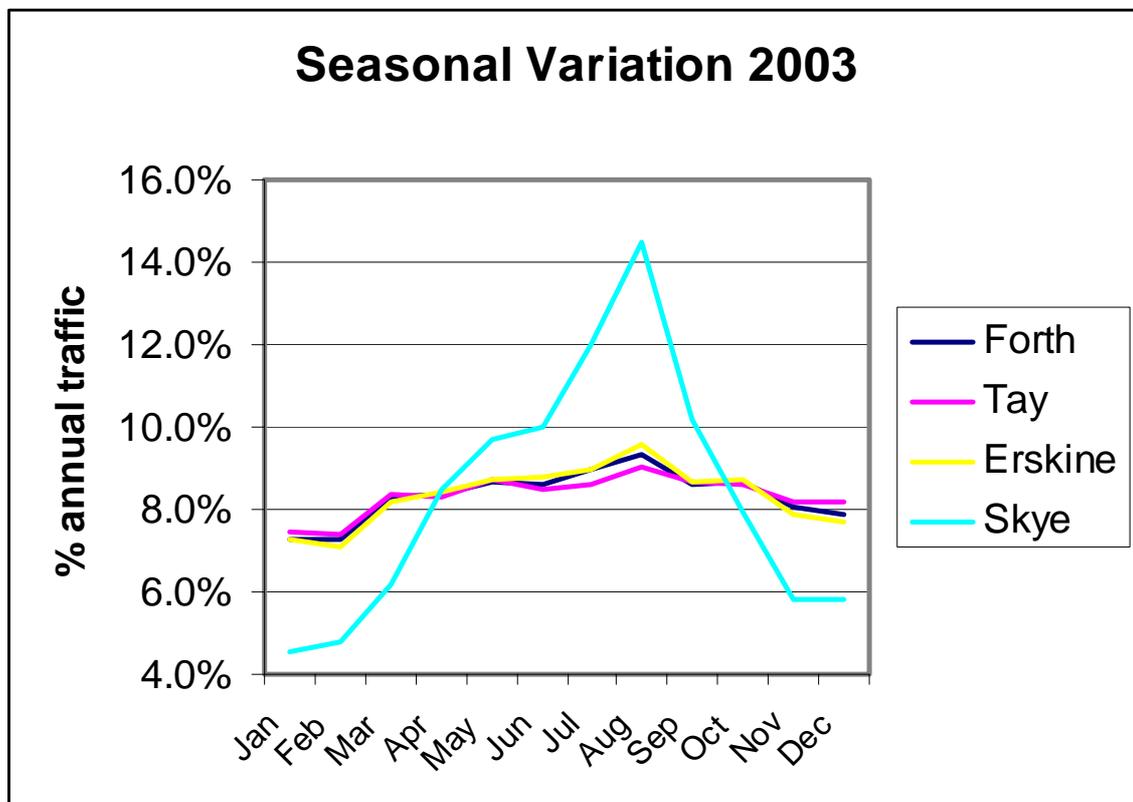
- Skye and Erskine are growing marginally faster than Tay and Forth over the period since 1995, possibly due to a proportionally higher tourism element using these crossings.
- Tay is closest to the growth curve for major roads in Scotland; with Forth, Erskine and Skye showing higher growth than the average for all major roads in Scotland over this period.

ⁿ Scottish Transport Statistics - No.23, 2004 Edition

- The dip in growth experienced generally for all major roads in Scotland due to fuel protests in 2000 is not so clearly reflected in the Bridge flows over the same period.
- The drop in Erskine traffic in 1996 is due to the oil rig collision. Traffic restrictions were in place on the bridge for several months.
- Skye dropped in 2001 due to “foot and mouth” outbreak and the resulting drop in tourism. The effect of this is not noticeable on the other bridges where there is a higher proportion of commuter traffic
- The dip in 1998 on the Forth Road Bridge reflects major roadworks carried out on the bridge during that period.

4.1.3 Seasonal Variation

The monthly values for each bridge have been plotted as a percentage of the respective annual flows, for the year 2003.



Generalised observations from this graph are:-

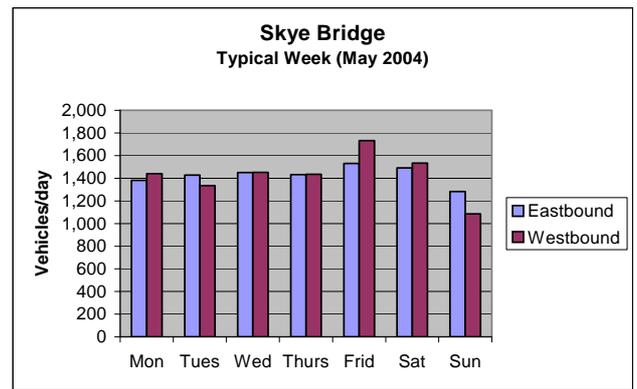
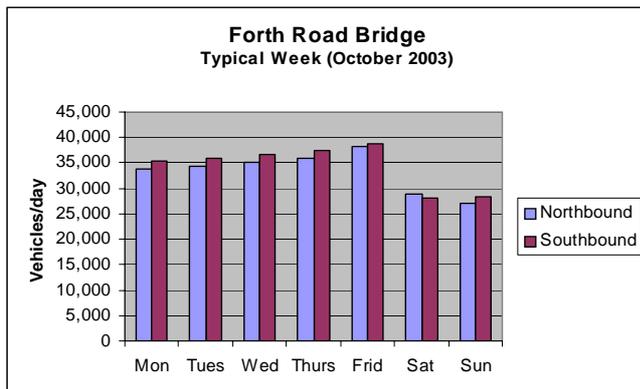
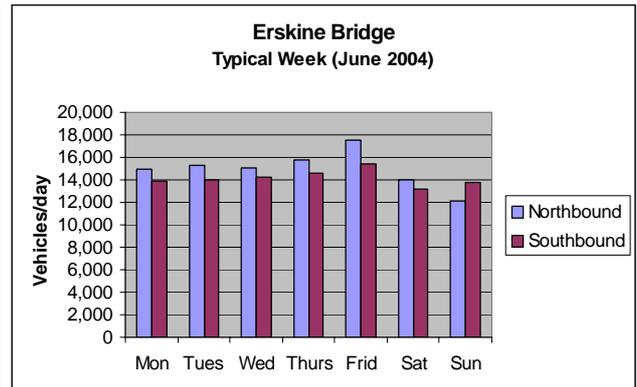
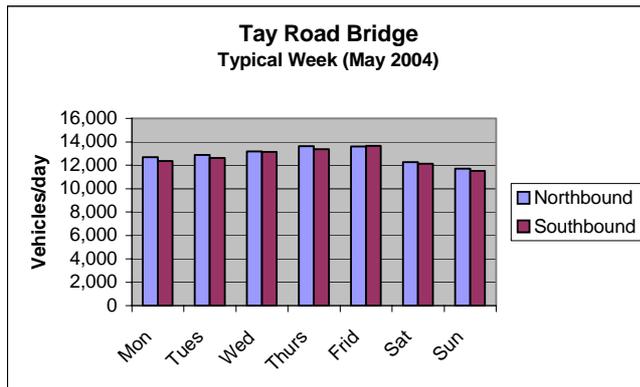
- The Forth, Tay and Erskine curves show similar characteristics, clearly different from Skye, with the peaks in August being less than 10% of the annual flows and the lowest values in February more than 7% of the annual flows, respectively.
- The Erskine, Forth and Skye bridges show highest flows in July and August but the Tay has a much flatter curve with less traffic variation. Although the Tay peaks in August, the May and September flows are both higher than June and July.

- The Skye Bridge shows a marked seasonal variation, with the summer peak being almost three times the lowest winter month. The peak month is almost 15% of the annual flow and the lowest month is less than 5%.

4.1.4 Daily Variation

Typical off-peak months have been chosen to represent neutral conditions.

The four histograms below represent each bridge^o. Note that the scale is different for each bridge.



Generalised observations from these charts are:

- Tay, Erskine and Forth have comparatively lower flows at the weekends than on weekdays. Forth is the lowest in this respect with both Saturday and Sunday flows about 20% lower than weekday flows.
- Flows increase progressively over the working week, peaking on Fridays.
- Skye profile is different to the other bridges with Saturday above the weekday average. However, Sunday is the lowest flow of the week.
- One-way toll bridges have higher flow in the non-tolled direction.
- Erskine and Skye have weekend “tide” – Erskine north on Friday and south on Sunday, Skye west on Friday and east on Sunday.
- On Erskine, more traffic goes north for Monday to Saturday – then the reverse on Sunday.

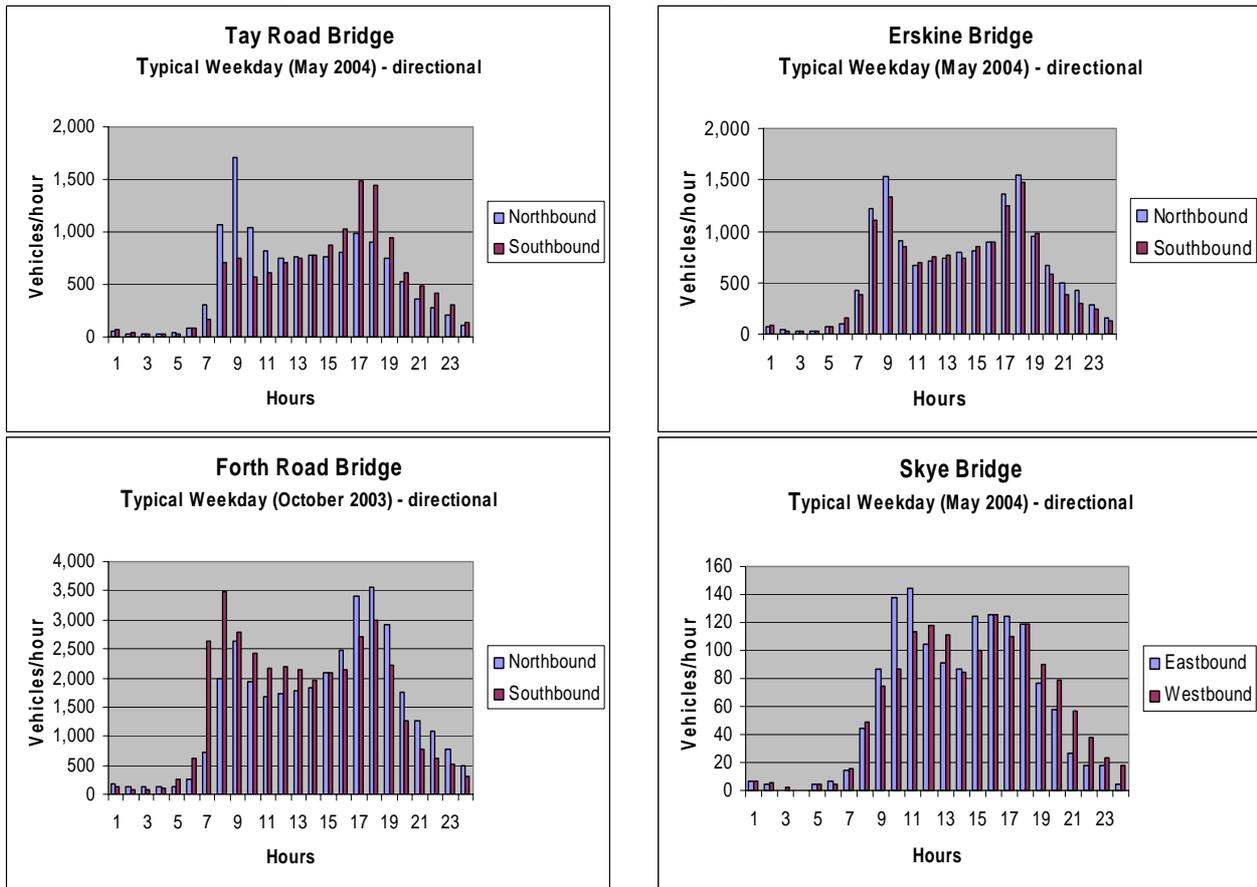
^o Data sources: Dundee City Council, Fife Council and SRTDb automatic traffic counter data.

- Skye has equal flows in each direction over the whole week.

4.1.5 Weekday Hourly Variation

Dates in neutral months of May and October when tourist traffic is less predominant and weekday commuting patterns are more apparent.

Figures are shown on four histograms below^p. Again, note that the scales for each bridge are different. Note that the Tay bridge tolls only in the southbound direction; Forth tolls only northbound; and Erskine and Skye both toll in both directions.



Generalised observations from these charts are:

- Erskine has similar traffic-generating attractions on both sides of the Clyde Estuary.
- Tay has a large attraction on the Dundee side, promoting “tidal” flow.
- Forth has an early southbound peak. At 8-9am the peak is fairly even in each direction due to attractions on both sides of the Forth Estuary during that period. The evening peak is predominantly northbound.
- Skye has a delayed “tidal” morning peak with traffic leaving Skye much later than the other bridges, over an extended period from 8-11. Traffic returns to Skye over a similarly prolonged evening period.
- Erskine and Tay are very peaky, especially in the morning. Forth shows peak spreading and in-filling of the interpeaks. Consequently, the peaks for the Forth cover an extended period.

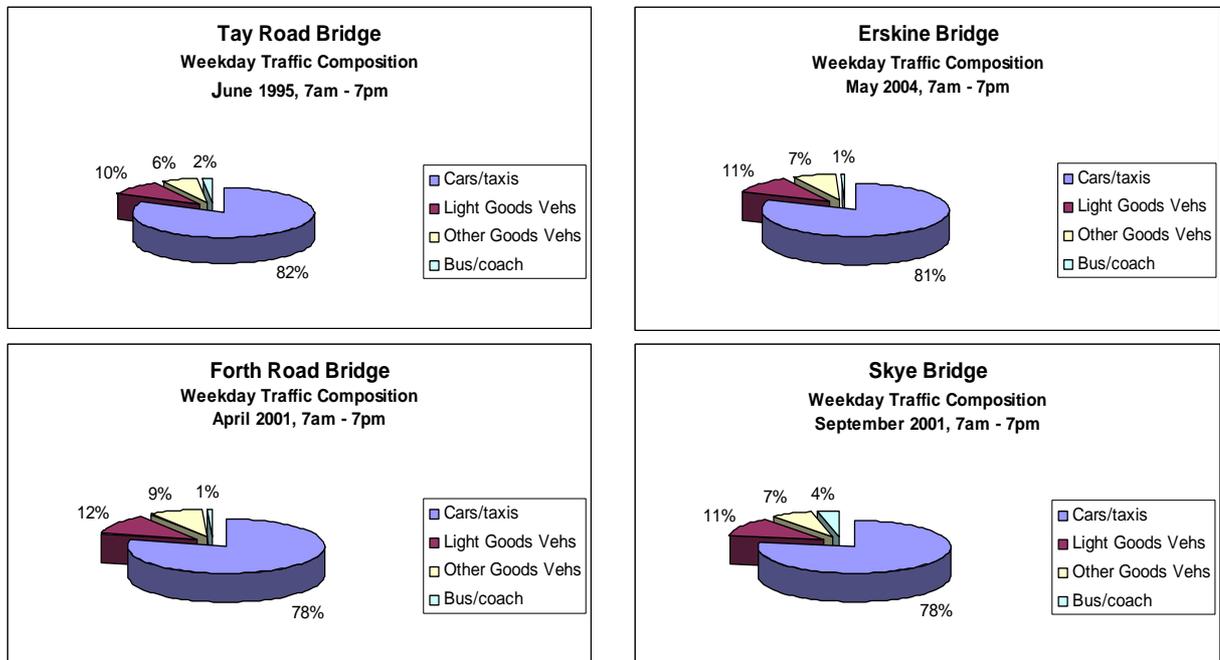
^p Data sources: Dundee City Council, Fife Council and SRTDb automatic traffic counter data

- Skye shows quite a different pattern with the am and pm peaks less predominant and much flatter. There is little interpeak drop indicating relatively more activity during the middle of the day with a lunch time lull between 1-2 pm.

The characteristics of the Skye Bridge indicate a different manner of use, reflecting all-day activity. The other bridges patterns indicate a heavy commuter use and less relative activity during the interpeak.

4.1.6 Traffic Composition^q

Due to a lack of availability of consistent data using the same classification system, the data has been drawn from different years. Data is for a typical out of season weekday between the hours of 7 am – 7 pm. Data is from neutral months i.e. April/May/June and September. Note that proportions will change at different times of the year with car proportions increasing for 24 hour flows and at weekends.



Generalised observations from these charts are:

- Comparatively large number of buses on Skye at 4% which includes tourist coaches and local shuttle bus.
- Proportions are generally very similar during the working day. cars and light goods vehicles are about 90% (89%-92%); other goods vehicles and buses are about 10% (8%-11%).

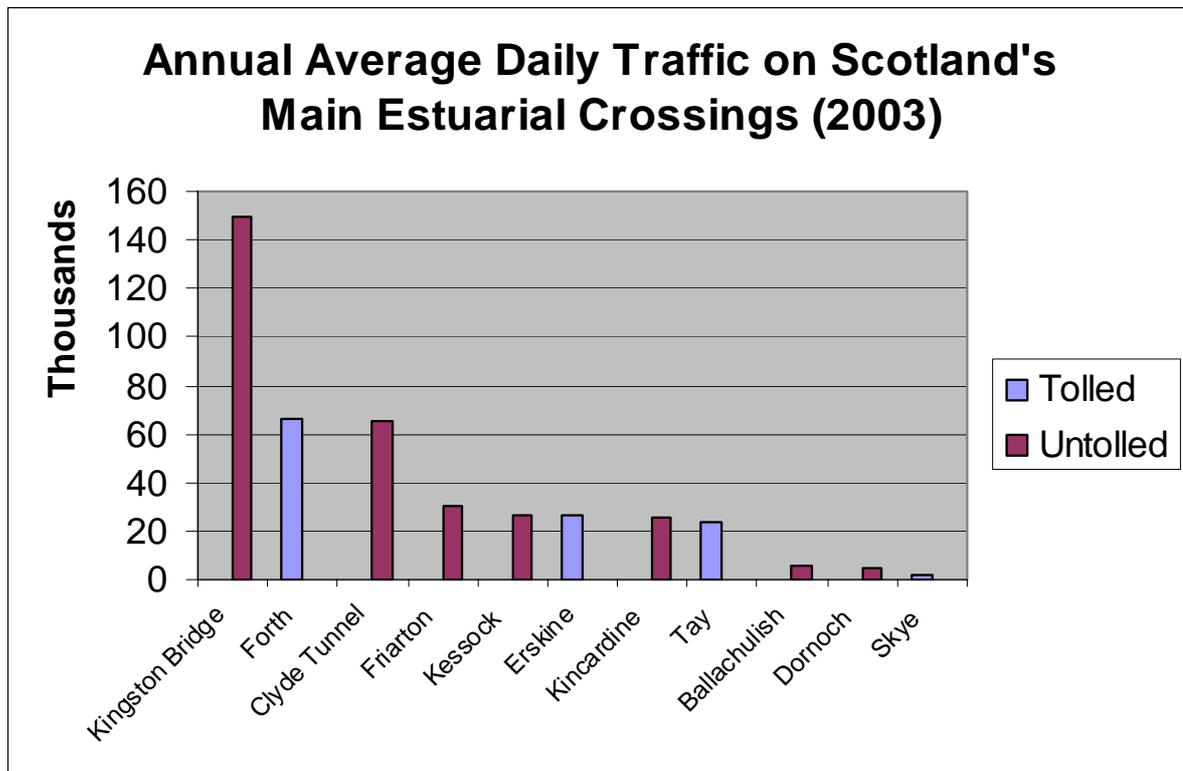
4.1.7 Comparison with other Estuarial Crossings^r

A graphical comparison of the relative daily traffic flows for each of the major estuarial (or river) crossings in Scotland is shown below. The total annual traffic flow in each direction for 2003 has been estimated and divided by the number of days in

^q Data source: DfT Link Based Rotating Census/ SRTDb manual classified count data

^r Source: SRTDb and Toll Bridge data collection statistics.

the year to derive the average daily flow at each location. The tolled bridges are distinguished by blue colouring.



All the two-lane single carriageway bridges have flows under 20,000 vehicles per day, except for Kincardine which currently experiences capacity problems at peak periods. Above 60,000 vehicles per day the dual two-lane carriageways also experience congestion at peak periods. Kingston Bridge has dual five-lane carriageways and is clearly in a different category at the centre of a busy urban conurbation, being one of the busiest bridges in Europe. Friarton, Kessock, Erskine and Tay are all dual two-lane carriageways and experience relatively little congestion although the access roads in Dundee experience peak hour congestion to the north of the Tay Bridge.

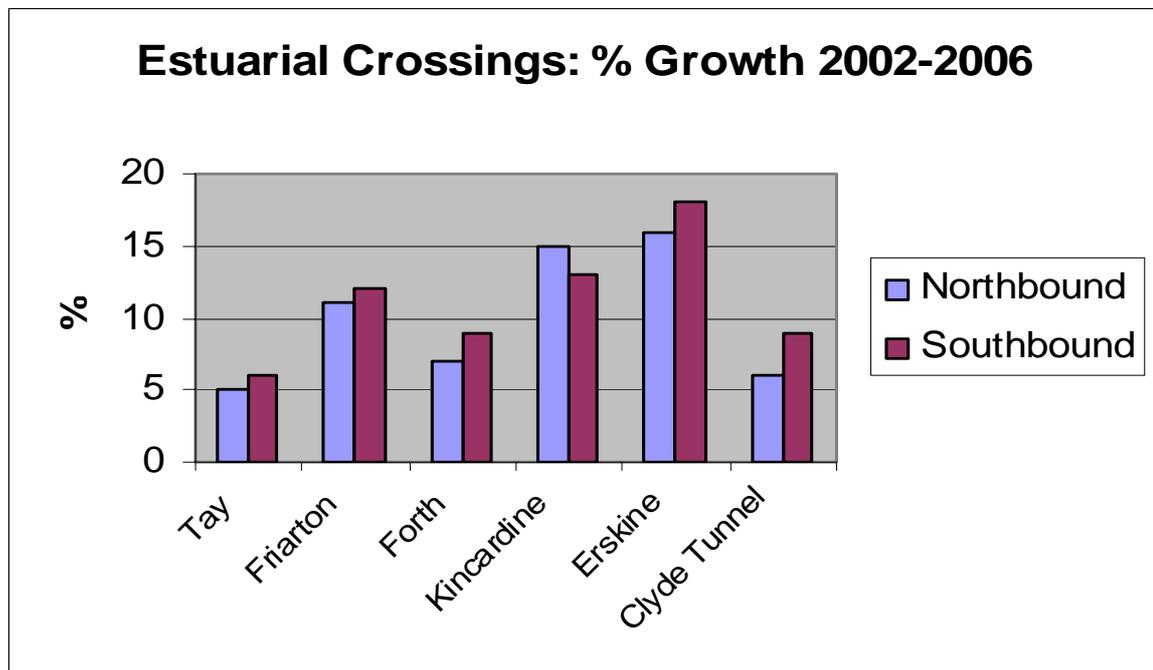
4.2 Future Trends

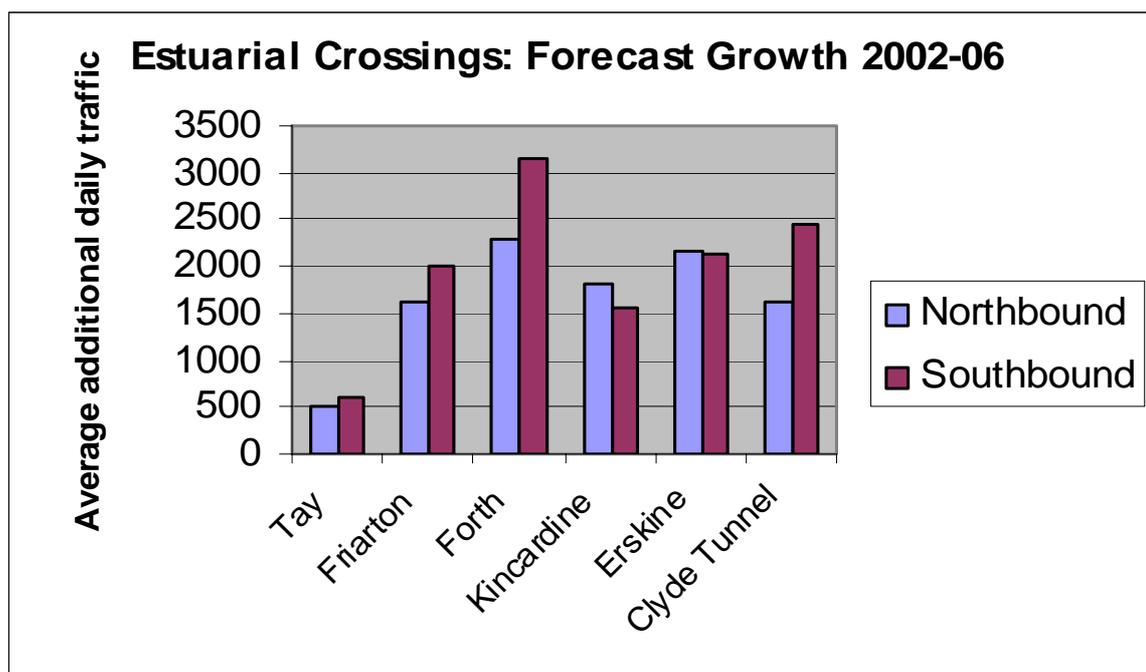
The growth trends discussed in section 4.1.2 indicate that traffic on the tolled bridges has grown faster in the period 1995 to 2003 than it has generally grown on major roads in Scotland. Reasons for this are presently unclear. Recognising that national growth projections alone may not adequately reflect future tolled bridge traffic levels, MVA was commissioned to prepare forecasts using the Transport Model for Scotland's Demand and Land Use Models which take account of local population, household and employment projections based on local authority planning data. Due to time constraints within Phase One and the increasingly speculative nature of longer term planning data underpinning TMfS traffic forecasts, MVA was asked only to analyse changes in traffic levels from the base year (2002) to the forecast year (2006) assuming tolls remain unchanged.

As Skye Bridge lies outside the boundary of the TMfS modelled area, Scott Wilson Scotland Ltd was appointed to review the recent traffic trends and to develop a forecast of future traffic growth.

The full MVA report and supporting documents covering Erskine, Forth and Tay Road Bridges are available on request. Key results are summarised below.

The charts below reflect the forecast growth at Clyde, Forth and Tay estuarial crossings. They show that while Friarton, Kincardine and Erskine Bridges are forecast to experience a higher rate of growth in the period 2002-2006 in percentage terms, the greatest additional traffic volumes will occur at Friarton and Forth, with Erskine and Clyde Tunnel experiencing about the same additional traffic numbers.





4.2.1 Implications for Forth Crossings

As Fife and Falkirk grow in terms of households, population and employment, a higher level of percentage traffic growth over Kincardine Bridge is predicted by 2006. In terms of actual additional average daily traffic, however, the Forth Road Bridge is predicted to attract the majority of additional traffic in 2006. The traffic growth on both Forth crossings has consequences for congestion on the bridges and their approach roads. The additional congestion surrounding the Forth Road Bridge is especially high in the southbound direction where the Bridge is already approaching capacity in 2002. Delays on the A8000 also increase by 2006 with the forecast increases in Forth Road Bridge traffic. The park and ride facility at Ferrytoll is currently being upgraded to hold double the number of cars; this may have an impact on congestion.

4.2.2 Implications for Tay Crossings

As Perth and the surrounding areas grow in terms of households, population and employment, this is reflected by the growth in traffic over Friarton Bridge by 2006. As Friarton Bridge is less congested than other bridge crossings, traffic growth is less restricted. This is in contrast to the Tay Road Bridge where a general decline in population and constraints of congestion result in relatively low growth rates. The congestion analysis indicates an increase in delays over the Tay Road Bridge with Friarton remaining relatively free of congestion. The A90 (Kingsway) passing through Dundee also shows signs of increased congestion in 2006, predominantly due to increased traffic at Friarton and the increase in employment forecast around this area.

4.2.3 Implications for Clyde Crossings

Areas to the north of the Clyde are forecast to grow in terms of households. Although these areas do not show any significant rise in population (apart from further north) this increase along with a rise in car ownership creates an increase in demand over

Erskine Bridge. Employment is also set to rise on both sides of the Clyde creating further growth from new households. At present Erskine Bridge has spare capacity in the peak periods, therefore any additional traffic is less restricted, especially compared to the Clyde Tunnel which is presently congested within the peak periods and where any additional demand is suppressed by congestion levels. The majority of additional congestion is shown on approach roads to the north west of Erskine Bridge and to the north of the Clyde Tunnel.

4.2.4 Implications for Skye

The Scott Wilson forecast (see section 4.2) is based on an analysis of the observed vehicle carryings as recorded by the operators, a comparison with national trends adjusted to reflect conditions generally within Great Britain, Scotland and the Highlands for car-based trips, and an examination of the principal alternative route via the Mallaig-Armadale ferry crossing.

The report concludes that the most likely scenario is that future traffic levels on the bridge will continue to extrapolate from recorded trends whilst reflecting general longer term national growth predictions.

4.3 Traffic Trends and Growth – Key Points

- Each tolled Bridge has a unique set of traffic characteristics, including differences in bridge user numbers and the time and duration of peak usage. This must be taken into account if and when considering any changes to tolls.
- Traffic volumes in 2003 (in both directions) were equivalent to a daily average of:

Forth Road Bridge	65,800
Erskine Bridge	26,200
Tay Road Bridge	23,800
Skye Bridge	2,100
- The busiest Scottish estuarial crossing route is Kingston Bridge (untolled). The Forth Road Bridge (tolled) is the second busiest, although only slightly busier than the Clyde Tunnel (untolled). Average daily traffic levels at Erskine and Tay Bridges (tolled) are similar to Kessock and Kincardine Bridges (untolled).
- Forth, Erskine and Tay profiles show a similar seasonal distribution of traffic, with small peaks over the summer period. Skye shows very marked seasonal variation.
- Erskine and Skye Bridge traffic flows on a typical off-peak week show weekend ‘tides’ with a respective increase in northbound and westbound traffic on Fridays, returning over the weekend.
- During peaks the number of vehicles travelling towards the Forth Road Bridge is greater than the bridge can accommodate. This leads to congestion as drivers queue to cross the Bridge. To avoid this congestion, drivers adjust their time of travel. This is known as ‘peak spreading’ as the troughs between the morning and evening peaks start to fill up.
- Skye shows a slower build up of traffic, predominantly leaving Skye throughout the morning and peaking between 10-11am, with a lunchtime lull. This profile indicates a more steady use throughout the day, quite different

from the very peaky morning and evening commuter patterns observed on the other toll bridges.

- Household, population and employment changes forecast for the short term are likely to result in more traffic at Erskine, Forth and Tay Bridges and their main alternative river crossing routes, with further congestion implications for the Forth and Tay Road Bridge and the Clyde Tunnel.

5. *Alternative Tolling Regimes*

An analysis of the implications of removing the tolls; reducing the tolls; maintaining the status quo; increasing the tolls; differential toll by time of day, car occupancy, vehicle class etc

5.1 Assessment Methodology

Erskine, Forth and Tay Road Bridges

MVA was commissioned to model the strategic response to changes in toll levels at Erskine, Forth and Tay Road Bridges using the Transport Model for Scotland (TMfS). TMfS is a multi-modal, strategic demand and assignment model which takes account of traveller responses to change.

The results discussed in this report are derived from the model base year of 2002 and provide a good indication of how travel patterns would settle to a state of equilibrium based on changes to existing tolling regimes. Results therefore do not take account of traffic growth but do incorporate suppressed and induced journeys which significant changes to tolls may generate. All results are relative to the “status quo” scenario only i.e. they are only indicative of expected changes between the scenarios modelled.

Each of the tests run by MVA was analysed to provide a general understanding of the likely effects of changes to the toll regimes at each of the three tolled bridges. The analysis is limited to more general effects as opposed to specific junction delay or link effects at each bridge or principal alternative route. For this reason there can be some variation in the detail when comparing TMfS results with results from traffic models that have been specifically designed to evaluate local traffic conditions. Accordingly, TMfS results should be read as indicative predictions only and interpreted in this report as being relative rather than absolute values.

The MVA report analyses the operational effects to the highway network at the morning peak with respect to changes in levels of traffic flow at each bridge and their principal alternative routes, changes in annual average daily tolling revenue, changes in route and mode choices and changes in congestion and emissions.

The mode choice analyses assume no change in the highway and public transport networks and assume adequate public transport capacity to absorb any increase. This is important from a policy perspective. Further analysis of transport implications would be needed if tolling changes are proposed at Erskine, Forth or Tay.

As all of the analysis is undertaken for the base year (2002) actual magnitudes of changes in congestion levels are relatively low, particularly at Erskine where there is less congestion in the peak hours. Actual congestion values (in vehicle minutes per km) were not included in the analysis which makes it difficult to gauge the true magnitude of potential congestion problems under each test. Further analyses could be undertaken to provide a more detailed assessment if required.

The modelling work did not take account of discounts available at Erskine and Forth Bridges thus results assume all vehicles are charged at the full rate appropriate to their classification.

Skye Bridge

As Skye Bridge lies outside the boundary of the TMfS modelled area it is not possible to use TMfS to assess alternative tolling regimes on that bridge. Research was commissioned from Scott Wilson to undertake a review of traffic trends and to forecast of future traffic growth for the Skye Bridge.

5.2 Scope of alternatives assessed

The terms of reference specified an analysis of the implications of removing the tolls; reducing the tolls; maintaining the status quo; increasing the tolls; differential toll by time of day, car occupancy, and vehicle class.

For each of the four tolled bridges, the status quo was modelled to provide base results against which alternative tolling scenarios could be compared. As circumstances are very different at each bridge, different tests were run in respect of each Bridge.

Alternative tolling scenarios were modelled as follows:

General scenarios – concurrent tests:

- ‘no tolls’ for all four bridges. In line with the Partnership Agreement commitment to ending tolls at Skye, this was the only alternative scenario modelled for the Skye Bridge.
- ‘reduced tolls’ set at 50% of current tolling levels for Erskine, Forth and Tay
- ‘increased tolls’ equating to a £2 return-trip toll for cars on all three bridges, with a corresponding percentage increase for HGVs

Specific scenarios – independent bridge tests:

- As Forth and Tay tolls already incorporate differentials for vehicle class, modelled increases and decreases took this into account.
- A differential tolling scenario of 50p for cars and £1.00 for HGVs (both each way) was modelled for Erskine where currently all vehicles pay 60p in each direction. The differential tolls modelled for Erskine were chosen to a) test easier toll payment (one coin required rather than two) and to b) find a balance in increasing HGV tolls without diverting these vehicles to the already-congested Clyde Tunnel
- As TMfS was not sufficiently developed to model toll differentials by time of day during Phase One^s, a high toll was modelled for Forth and Tay to obtain an indication of sensitivity to peak hour charging. The scenarios modelled (£5 for cars/£7 for HGVs at Forth, £4 for cars/£6 for HGVs at Tay) were chosen following discussions with Bridge and Local Authority Transport officials. A

^s The current version of TMfS is unable to model differential tolling based on time of day or vehicle occupancy rates. If considered appropriate TMfS can be enhanced in this respect and this matter could be addressed by carrying out more detailed modelling in Phase Two.

larger increase was not modelled for Erskine as it does not have a congestion problem.

- As a result of discussions with bridge and local authority transport officials, the effect of one-way tolling at Erskine Bridge was tested. Two scenarios were run: one at £1.20 (northbound only) to test the effect of a change from two-way to one-way tolling keeping the cost of the return journey the same, and another at £2.00 (northbound only) to additionally test the effect of an increased toll. This latter one-way test provides a direct comparison of results with the previous test of £1.00 in each direction. As with Forth and Tay positive traffic control can be exercised by collecting tolls prior to the traffic crossing the structure and consequently northbound rather than southbound tolling was tested for Erskine.

5.3 Results

Modelling results indicate that changing tolling regimes can have significant local and strategic effects on the network as well as immediate financial implications. Key results are summarised below:

5.3.1 Interaction of Traffic between Tolled Bridges

The modelling results show a small amount of interaction between Tay and Forth Road Bridges in the northbound direction with around 8% of northbound Tay Road Bridge traffic having arrived via the Forth Road Bridge. For trips involving both these bridges, MVA anticipates that any change to tolls which would influence a shift in route choice further west for the first estuarial crossing would also be felt at the subsequent crossing. For example a route choice to Dundee involving Kincardine Bridge rather than the Forth Road Bridge is more likely to involve Friarton Bridge rather than the Tay Road Bridge, even though the Tay Road Bridge is toll-free in the northbound direction. The same effect is predicted for southbound journeys.

There is no interaction with the Tay and Forth Road Bridges from Erskine Bridge.

5.3.2 Erskine Bridge

There are three strategic crossings of the River Clyde: Erskine and Kingston Bridges and the Clyde Tunnel. The distance between the Kingston Bridge and the Erskine Bridge is 13 miles. Between these two bridges are the Clyde Tunnel which provides a strategic connection between the A8 and M8 in the south, and the A814 and A82 in the north. Other River Clyde crossings are all to the east of the Kingston Bridge. Both the Kingston Bridge and Clyde Tunnel are currently subject to significant congestion problems, particularly at peak times. Changes to Erskine Bridge traffic levels will impact on these two alternative routes and therefore on levels of congestion within Glasgow City and on the motorway network.

The majority of origins and destinations to Erskine Bridge at the morning peak are either within 30 miles of the bridgehead area or more strategic but focused on the West of Scotland.

Traffic flows on the Erskine Bridge are more sensitive to small changes in tolls than traffic on the Forth and Tay Road Bridges. MVA attributes this to the much closer alternative route choices, mainly the Clyde Tunnel and also the Great Western

Road/Clydeside Express as an alternative route for traffic originating in the northwest and bound for Central Glasgow (or beyond in North or South Lanarkshire).

Removing or decreasing the toll at Erskine Bridge has the potential to attract traffic from these (and other) alternative routes. As the least congested of the three tolled bridges analysed by TMfS, Erskine Bridge has capacity to cope with increases in traffic to a better degree than either Forth or Tay Road Bridges, which are already congested at peak times. Increasing the toll has the opposite effect and results indicate traffic diverting to alternative routes.

Modelling of tolling in the northbound direction only resulted in an increase of traffic in the toll-free southbound direction and a reduction in northbound traffic. These changes were significant even where the toll for a return trip across the Bridge did not increase from the current £1.20. The changes were even more marked when the northbound-only toll was set at £2.00.

A slight increase in Erskine traffic resulted from the differential toll by vehicle type although, as expected, this masks a slight decrease in HGV traffic.

Mode choice effects apparent in all the Erskine Bridge tests were minor.

5.3.3 Forth Road Bridge

The morning peak analysis indicates that 70% of traffic travelling north across the Forth Road Bridge has an origin in Edinburgh and almost half of these trips has a destination in Fife. In the southbound direction, which is the dominating commuter corridor into Edinburgh from the north in the morning peak, 60% of traffic has a destination in Edinburgh, although only 12% has a destination in central Edinburgh.

Removing or decreasing tolls at the Forth Road Bridge has the potential to attract additional traffic, principally from Kincardine Bridge. As the Forth Road Bridge is already heavily congested in the morning and evening peaks, additional traffic would further increase journey times and extend the duration of the peak periods.

Increases in tolls resulted in traffic diverting to Kincardine Bridge. Kincardine Bridge and its junction with Kincardine village already experiences severe congestion in the peak periods. A new Upper Forth crossing, together with improvements to the approach trunk roads and the existing Kincardine Bridge,^t have been included in the Executive's investment programme. A public local inquiry (PLI) will be held during November and December 2004 and a decision is expected by spring 2005. If the PLI approves the proposal, construction of a new bridge could commence in 2005/06 with completion expected by 2008/09. The project will involve a new bridge and refurbishment of the existing bridge at a combined estimated cost of £100m.

Results of the largest increase (to £5 for cars and £7 for vehicles) suggest that traffic flows may be sensitive to higher tolls employed for demand management purposes. However the effects of this type of tolling regime on travelling choices such as mode, route and time of journey have not been tested. It is hoped that TMfS will be

^t www.upperforthcrossing.com

sufficiently developed to undertake such analysis during Phase Two of the review, if required.

When tolls are removed or reduced there is only a minor change in public transport patronage. The modal shift is more marked when tolls are increased although MVA suggest that further increases may be expected if additional public transport infrastructure or improvements were put in place.

5.3.4 Tay Road Bridge

The morning peak analysis indicates that around 80% of northbound Tay Road Bridge traffic has an origin in Fife, two-thirds of which have a destination in Dundee. In the southbound direction, 87% of traffic has a destination in Fife, half of which originates in Dundee.

Removing or decreasing tolls at the Tay Road Bridge has the potential to attract additional traffic, principally from Friarton Bridge. As the northern exit of the Tay Road Bridge leads traffic directly into Dundee City centre, Dundee already experiences short spells of congestion at morning and evening peaks. Additional traffic re-routed from Friarton at these times would add to this problem.

Increases in tolls resulted in traffic diverting to Friarton Bridge.

As with the Forth Road Bridge, results of the largest increase (to £4 for cars and £6 for heavy goods vehicles) suggest that traffic flows will be sensitive to higher tolls employed for demand management purposes. It is re-emphasised that the wider effects of this type of tolling regime have not been tested.

When tolls are removed or reduced there is only a minor change in public transport patronage. The modal shift is more marked when tolls are increased although MVA suggests that further increases may be expected if additional public transport infrastructure or improvements were put in place. This suggestion was supported by some consultees.

Interest was also expressed in modelling of northbound tolling. The Tay Road Bridge Joint Board are presently considering options for relocating the tolling stations to the south end of the bridge to facilitate northbound tolling and ease congestion and pollution in Dundee City centre.

5.3.5 Skye Bridge

As the Skye Bridge lies outside the TMfS modelled area, it was not possible to model traveller responses to removing the tolls using this model. However as Skye Bridge operates well below capacity it can clearly accommodate significant increases in traffic without affecting the free flow of traffic.

The Scott Wilson forecast of future traffic growth at Skye considers the likely effects of removing the tolls. At the basic level, removal of the tolls will increase the attractiveness of the Skye Bridge route as a means of travelling between Skye and the mainland. However the extent to which this will generate additional vehicle trips is largely dictated by the potential for trip reassignment from alternative routes, namely the Mallaig-Armadale ferry, the potential for new trips following the release of any

suppressed demand due to the reduction in travel costs and the opportunity for trips to switch to different vehicle classes. The Executive has no plans to withdraw the Mallaig-Armadale ferry service as a consequence of its commitment to end the discredited toll regime on the Skye Bridge.

Around 43,000 vehicles used the Mallaig-Armadale ferry in 2003, with 95% of trips taking place between April and October. Scott Wilson conclude that it is likely that current travellers whose route choice is dictated by travel costs already use the bridge, and those travellers who wish to experience the ferry route (mainly tourists) will continue to do so. The numbers of vehicles likely to divert from the ferry to the bridge are unlikely to have any significant impact on the free flow of traffic on the bridge.

5.4 High Occupancy Vehicles

5.4.1 FETA's Draft Local Transport Strategy

The executive summary of FETA's draft LTS includes objectives which highlight FETA's commitment to increasing vehicle occupancy – “To optimise the potential number of public transport person trips across the Forth” and “To increase car occupancy across the Forth Road Bridge”.

5.4.2 SESTRANS Single Occupancy Vehicle (SOV) Reduction Target

The SESTRANS Regional Transport Strategy 2003 sets a target of achieving, by 2022, a reduction in the percentage of people commuting to and from Edinburgh by SOV, by 10% from each authority to a 2001 base, e.g. Fife to reduce from 76% in 2001 to 68% by 2022.

5.4.3 High Occupancy Vehicle Lanes / Single Occupancy Vehicle Tolling

Forth faces serious congestion during the morning and afternoon peak periods and FETA has asked consultants to consider the possibility of HOV lanes or SOV tolling. The possibility of using high-occupancy vehicle (HOV) lanes or charging a higher toll for single occupancy vehicles (SOVs) is potentially attractive because of the opportunities it may offer to reduce the volume of single occupancy vehicles crossing a bridge during the peak period – which can exceed 70%.

Other tolled bridges in Central Scotland do not face the same volumes of traffic nor suffer comparable levels of congestion. There is little congestion on the Erskine Bridge and limited peak hour congestion on the Tay Bridge so that the benefits of HOV lanes or SOV tolling may be less significant from a traffic management perspective, but remain desirable in terms of promoting sustainable transport.

Technical consultants have examined options for reducing the number of SOVs on the Forth. The advice from these studies has been consistent in suggesting that HOV lanes present a range of operational issues (see details in the section on HOV lanes below) which are difficult to resolve given the physical and technical constraints of the Forth Road Bridge structure. Currently attention is likely to focus on schemes levying higher tolls or charges for SOVs.

5.4.4 *Single Occupancy Vehicle Tolling*

Setting a higher charge for SOVs should encourage an increase in travel by HOV vehicles, such as car sharing and buses, which should help in reducing the number of vehicles crossing the bridge during peak periods.

FETA plans to replace the existing manual toll booths with a new 'state of the art' automatic electronic plaza based on vehicles using electronic tags. The key benefit of electronic 'tag' tolling through the new automatic toll booths will be that vehicles with tags do not need to stop at the toll booths. This will allow for free flowing traffic and a reduction in queuing.

At present fully automatic electronic tolling is not capable of distinguishing between HOVs and SOVs so it would be necessary to operate a manual tolling approach in identifying HOVs and SOVs.

It is recognised, however, that the uptake of electronic tolling will take some time to build up and that FETA will need to continue providing manual tolling during this period and beyond for drivers who insist on cash payment. Experience on newer crossings with electronic tolling, such as the Dartford bridge, suggests that a large proportion of drivers still prefer to use cash payments despite the option of electronic tolling which avoids the need to stop at the toll booth.

This provides an opportunity to explore the implementation of manual tolling of SOVs alongside electronic tolling of other vehicles in the short to medium term. Research and development of experimental systems is being undertaken to try to develop a reliable automatic system for identifying vehicle occupancy. Should these developmental technologies reach a stage where they are viable the design specifications of the new toll plaza and its supporting systems will be capable of allowing it to be upgraded to accommodate the new technology.

One of the factors which needs to be weighed in the balance is whether manual based SOV tolling would be detrimental to the free-flowing benefits of electronic tolling. This is a significant consideration as SOVs currently make up more than 70% of the vehicles crossing the bridge during peak periods.

5.4.5 *Dedicated HOV Lanes Issues*

FETA has considered the possibility of a dedicated HOV lane for passenger vehicles (buses and minibuses) in addition to private cars with two or more occupants. This approach would involve physically separating the two lanes over the bridge and to direct HOVs through HOV toll booths to access the dedicated HOV lane.

The Forth Road Bridge is limited to two lanes in each direction with no hard shoulder. Consistent advice from technical consultants employed by FETA has identified problems with this approach.

Estimates suggest that more than 70% of traffic on the Forth is made up of SOVs and it will take some time to reduce this level. Currently each all-purpose lane handles 50% of the traffic (HOVs and SOVs) and the bridge is already at its capacity limit during peak periods.

The diversion of SOV traffic from the dedicated and more lightly trafficked HOV lane to the non-HOV lane would, inevitably, increase the level of traffic on the non-HOV lane well above its current 50% volume of traffic which would then create greater delay, queuing and congestion for traffic using that lane. Estimates suggest that even with a 50% increase in HOVs using the dedicated lane the diversion of remaining SOV traffic onto the all-purpose lane would generate queues of more than 7km.

5.4.6 Construction of new dedicated HOV lanes

On a land based roadway, construction of an additional HOV lane might be a cost-effective option, but this would be too costly and difficult technically on the Bridge. Consideration was given to running vehicles on the side access routes and via the central reservation, but this proved to be neither a technically viable (the bridge structure could not support the additional loading) nor a cost effective solution and was rejected^u.

5.4.7 Traffic Management

On a bridge with only two lanes, separation of a dedicated HOV lane from an all-purpose lane would involve managing potentially hazardous weaving of traffic between lanes (to access the correct lanes for crossing and leaving the bridge). Handling accidents and breakdowns without disrupting the free flow of traffic would be difficult. Ensuring an adequate level of lane discipline would be essential to the provision of dedicated HOV lanes. The operation of Police motorbike patrols was previously considered, but because the bridge has no hard shoulder to pull over offenders it was considered to be impractical. Other approaches to ensure appropriate lane discipline would need to be considered to support dedicated HOV lanes.

These constraints work against HOV lanes being an optimum solution for the immediate future, but the alternative of applying higher differential tolls or charges on SOVs does offer a possible way forward in achieving FETA's objective of increasing car occupancy across the Forth Road Bridge.

5.4.8 SOV Reduction Measures – Further Work

FETA are also examining proposals to encourage local employers to negotiate car sharing schemes which could be policed by employers and which would attract discounted rates for crossing the bridge.

Consideration should be given to engaging consultancy time, within the Executive's consultancy framework arrangements, as part of Phase Two of the Bridges Review. The purpose of this consultancy project would be to provide Ministers with the benefit of objective technical advice on the most cost-effective options for achieving FETA's objective of increasing car occupancy across the Forth Road Bridge.

5.5 Alternative Tolling Regimes –Key Points

Modelling results should be read as indicative predictions only and interpreted in this report as being relative rather than absolute values.

^u Forth Road Bridge: Radical Measures Study

- Currently operating below capacity, Erskine Bridge has the potential to offer some measure of relief to high levels of congestion in Glasgow. Removing tolls completely had the biggest impact on this. One-way tolling, keeping the cost of a return journey at current toll prices (i.e. £1.20 for a one-way trip instead of 60p each way), produced a significant increase in southbound (toll-free) traffic but caused traffic to divert to Glasgow to avoid tolling in the northbound direction. Total traffic levels increased slightly when the vehicle differential scenario was tested although there were indications of some heavy vehicles diverting to Glasgow.
- The traffic characteristics and future growth discussed in section 4 strongly indicate that the current tolling regime does not provide FETA with adequate means of managing its peak demand while significant general tolling increases had negative impacts on existing congestion at Kincardine and the Forth Road Bridge itself respectively. Differential tolling by time of day may offer FETA the opportunity to address congestion without adverse effects for Kincardine and it is recommended that this be further explored during Phase Two of this review.
- The situation at the Tay Road Bridge is similar to that at Forth although to a lesser extent. There is a clear need to manage peak hour traffic to improve congestion and air quality and the likely impact of relocated tolling stations should be evaluated during Phase Two of this review to establish whether further demand management measures are desirable.
- Skye Bridge can accommodate significant increases in traffic without affecting the free flow of traffic.
- FETA is committed to promoting increased use of high occupancy vehicles. Although FETA's consultants have given serious consideration to the possibility of HOV lanes and SOV tolling, they concluded that FETA's overall objectives are best served by getting all vehicles over the bridge during the morning peak as quickly as possible. Nevertheless, options leading to the introduction of some form of higher SOV tolls will be actively considered. It is likely that these will be based on manual tolling in the short to medium term, with the possibility of migrating to automatic or electronic vehicle occupancy tolling if and when reliable systems become available in future.

6. Environmental, Economic and Accessibility Issues

Identification of any significant environmental and economic issues (particularly pollution and congestion), that link to the tolls; outline how options for changes to existing toll regimes may impact on Ministerial environmental and economic objectives and commitment to improve access for rural communities

6.1 Environmental Issues

One of the aims of the Review is to assess how changes to the Bridge tolls would contribute to the Executive's environmental objectives. Changes to the tolls could influence travel patterns and, in turn, greenhouse gas emissions and air quality.

Changes to the tolling regime are most likely to have a positive environmental impact if they decrease the number of vehicle kilometres travelled, divert traffic away from areas of poor air quality, encourage the use of more environmentally-friendly modes of travel and/or reduce congestion.

A number of consultees have highlighted the need for positive support for public transport on these crossings as a means of reducing congestion and pollution. Some consultees have suggested that consideration should be given to discounts or exemptions from tolls for buses. There is general support for replacing tolls with road user charging schemes and some indication that this should be set within the context of a national road pricing framework.

6.1.1 Climate Change Objective

Carbon dioxide is the major greenhouse gas which contributes to climate change. Road transport accounts for about 11% of Scottish carbon dioxide emissions. The Executive is committed to tackling climate change and is working with the UK Government to meet both the UK Kyoto target of reducing 1990 levels of greenhouse gas emissions by 12.5% by 2008-2012 and the domestic goal of reducing UK carbon dioxide emissions to 20% below 1990 levels by 2010. Beyond this, there is an objective to put the UK on a path to reduce carbon dioxide emissions by some 60% by around 2050.

Should changes to the tolls affect travel patterns by, for example, encouraging new, additional or longer journeys, or increased congestion, this could affect emissions of greenhouse gases.

Calculating changes in carbon dioxide emissions resulting from network changes (such as changes to tolls) requires predictions about the amount and type of road fuel used (based on frequency, routes, modes of journeys and any increases or decreases in numbers of trips) before and after the change. Modelling has shown that tolling changes at Erskine, Forth and Tay Bridges will result in vehicles diverting to or from these Bridges but without an in-depth study of vehicle origins and destinations it is difficult to gauge the impact on the amount of road fuel used. However, for all

bridges and scenarios considered in the Review, the indicative changes in Scottish carbon dioxide emissions from road transport, in comparison to the baseline scenario range from a decrease of 0.15% to an increase of 0.36%.

At Skye, however, it is much easier to predict the effect of removing the tolls due to the nature and location of alternative crossing means. Taking an extreme view of traffic growth^v, the forecast indicates that additional traffic generated by removing Skye's tolls will generate a minimal increase in carbon dioxide emissions. Although the increase is negligible (approximately 0.007%) compared with overall emissions from road transportation in Scotland it nevertheless represents an increase in the context of Executive's efforts to reduce emissions.

6.1.2 Local Air Quality

Emissions from road vehicles are also the largest single cause of local air pollution in Scotland. Local air quality is a measure of the direct impact of emissions of air pollutants on the local populations and is therefore primarily local in nature and varies by time of day and by season.

The Executive has set air quality objectives to be met throughout Scotland by dates ranging from 2003-2010. Local authorities have a duty to review and assess the current, and likely future, air quality in their areas. Where a local authority considers that one or more of the air quality objectives is not likely to be met by the relevant deadline, it must declare an Air Quality Management Area (AQMA), covering the area where the problem is expected. It must then draw up an action plan setting out the measures it intends to take in working towards achieving the air quality objectives.

Any changes to the tolls that increase traffic levels, increase congestion or divert traffic into areas of poor air quality could have a detrimental effect on progress to achieve air quality objectives.

The analysis carried out for Phase One covering Erskine, Tay and Forth Road Bridges could only look at expected changes in emissions of nitrogen oxides (NO_x) for each scenario considered (reference MVA report, 2004). A detailed consideration of the effects of these changes on ambient concentrations of pollutants could not be undertaken within the scope of this study. However, using information gathered by Local Authorities it is possible to comment on particular air quality aspects for each Bridge.

Erskine Bridge

When tolls are removed from Erskine Bridge the largest increases in NO_x emissions occur on Erskine Bridge and its southern approach (the M8). This situation is reversed when tolls are increased on Erskine bridge – as there are increases in tolls to cross Erskine Bridge, traffic may change route to use the next alternative; therefore there are reductions around Erskine Bridge, but increases around the approach roads and on the Clyde Tunnel.

^v based on high traffic growth plus an extra 10% for new journeys induced by removal of the tolls

Looking beyond the Clyde estuary, there are marginal changes in emissions along the A80/M80 to suggest that a degree of strategic (i.e. non-local) traffic (heading to North Scotland) would be affected by a change in toll.

Whilst there are no specific air quality problems in the area around the Erskine Bridge itself, Glasgow City Council has declared an Air Quality Management Area (AQMA) in the city centre due to transport related air pollutants. Glasgow City Council is currently consulting on a draft Air Quality Action Plan which sets out a programme of work to reduce pollutant concentration within the AQMA. Any shifting of traffic away from Erskine Bridge towards the city centre could exacerbate an existing air quality problem in that area. In other words: any increase in tolls could discourage some current Erskine Bridge users in favour of the Clyde Tunnel with unwelcome congestion and air quality consequences for the city centre.

Tay Bridge

When tolls are removed from the Tay Bridge, there is an increase in NO_x emission on the Tay Bridge and its approaches. Consequently, there is a reduction in emissions from Friarton Bridge towards Dundee and around the Kingsway. When tolls are increased considerably (to cars £2/HGVs £5 and cars £4/HGVs £6) the largest decrease in NO_x occurs around the Tay Bridge and its approaches; there is also an increase in emissions from Friarton Bridge towards Dundee.

The northern exit of the Tay Bridge is close to Dundee city centre. Dundee is currently assessing air quality and may declare an AQMA adjacent to the bridge as it is considered that there is a risk of exceeding the air quality objectives due to transport related emissions within the city centre. The Council has reported to the Review Team that congestion/pollution is very time specific during peak hours and that air pollution is greater in enclosed street areas rather than the open bridgehead. Any change to the existing toll regime which alleviated this congestion would have a positive impact on Dundee's air quality.

Forth Road Bridge

When tolls are removed from the Forth Road Bridge, there is an increase in NO_x emission across the Forth Road Bridge and its approaches in line with an increase in traffic using the Forth Road Bridge. Consequently, there is a reduction in emissions on Kincardine Bridge. This situation is reversed when tolls on the Forth Road Bridge are increased (to cars £2/HGVs £5 and cars £5/ HGVs £7) thus there are reduced levels of emissions (and traffic) on the Forth Road Bridge and increases at Kincardine. There are also increases in emissions along the M9 and A985 which run parallel to the south and north banks of the Forth Estuary.

There are no specific air quality problems immediately around the Forth Bridge. However the bridge is a major transport link and generator of traffic into Edinburgh - 12% of morning trips are destined for Edinburgh City centre. The City of Edinburgh Council have declared an AQMA which covers the city centre and have published an action plan which sets out the measures they intend to put in place to help them achieve the air quality objectives. As with the Tay, a tolling regime on the Forth bridge which could help reduce congestion in Edinburgh could potentially have a positive impact on the city centre's air quality.

Skye Bridge

There are no specific air quality problems around the Skye Bridge. An assessment of roadside air quality on the bridge (reference TRL 2004, DMRB modelling) indicates that concentrations of the air pollutants considered^w are currently, and are projected to remain, exceptionally low and well below the corresponding air quality objectives. Using forecast traffic levels, we can predict increases in concentrations associated with removing the tolls at Skye Bridge. These results indicate that there would be hardly any effect on roadside air quality.

6.1.3 Traffic Stabilisation

The Executive has an aspirational target of stabilising road traffic at 2001 levels by 2021, which is ultimately about limiting road traffic's impact on the environment and cutting congestion. However, this is a very challenging area given increasing road traffic levels year on year. In-depth research into road traffic reduction will be reported to Ministers over the next few months.

The Executive is committed to stabilising road traffic volumes by encouraging modal shift from private car to walking, cycling and public transport. This includes initiatives stimulating behavioural change like the current "Choose Another Way" travel awareness campaign, which is targeted at those travelling by car in the three largest Scottish cities - as well as improving public transport services, massive investment in new public transport infrastructure and the promotion of cycling and walking as healthy, non-polluting alternatives. The Executive is also committed to helping local authorities reduce traffic levels and has commissioned work to evaluate and review guidance to local authorities on achieving road traffic reduction.

Consultation comment includes the suggestion to introduce variable tolling arrangements which would favour less polluting vehicles and high occupancy vehicles. There is support for electronic tolling to improve the flow of traffic and reduce congestion. However, one consultee noted that differential peak period pricing could be unfair to long distance traffic.

6.1.4 Discount Schemes

Erskine, Forth and Skye all offer discount schemes where a book of vouchers for travel can be purchased in advance at a discounted price. Selling books of tickets in advance has 2 main advantages for the bridge operator:

- It reduces the need for cash handling at the booths, both for the traveller and for the booth operator. Simply handing over a voucher significantly speeds up the transaction time.
- It reduces the need to handle cash in the office, which saves money in terms of staff time, reduced chances of fraud/theft etc, and banking charges.

However, discount schemes could be considered to offer a "reward" for making a higher number of journeys which runs counter to the Executive's targets on traffic stabilisation and may have an environmental impact.

Tay offers books in advance but without a discount. On 15 July 2004, the TRBJB applied to introduce a 10% discount voucher scheme for those users purchasing 50

^w CO, benzene, 1,3-butadiene, NO₂ and PM₁₀.

vouchers in advance. The Executive has advised TRBJB that decisions on any future changes to tolls will be taken in the light of the Tolled Bridges Review.

6.2 Economic Issues

6.2.1 Economic impacts - Congestion

An important aim of the Review is to look at the congestion impacts of the bridge tolls and assess how these would be affected by changes to the tolls.

Motorists making journeys on congested roads cause delays to other vehicles on that road and the surrounding network. The costs are borne both by the individual motorist and by other road users, in the form of increased journey times and any associated pollution.

Longer journeys with unpredictable delays add to the cost of industry and commerce. As such, congestion is a significant cost to the economy. Although various estimates have been made of the cost of congestion at the UK level these are difficult to value with any degree of accuracy as the impacts are complex and not easily quantified.

In terms of Scotland's toll bridges, there are already congestion problems on the Forth and Tay bridges. Although the Erskine Bridge does not currently suffer from congestion it is part of the Glasgow network, which does have congestion problems. Congestion is not an issue for the Skye Bridge.

The results described here are those from the TMfS work outlined in section 6.1 and the same details given there apply to the descriptions in this section.

The modelling work on the different toll regimes gives us information on the changes to traffic flows on the bridge and to congestion on the roads surrounding the bridge. The results are presented in relative terms, i.e. low-high levels of congestion and to show increases and decreases in those levels as a result of changes to the tolling regime.

As all of the analysis is undertaken for the base year (2002) actual magnitudes of changes in congestion levels are relatively low, particularly at Erskine where there is less congestion in the peak hours. Actual congestion values (in vehicle minutes per km) are not included in the analysis which makes it difficult to gauge the true magnitude of potential congestion problems under each test.

As such, the analysis here provides only a basic picture of congestion problems on and surrounding the toll bridges and how changes in tolls might impact upon congestion. Further analyses could be undertaken to provide a more detailed assessment if required.

6.2.2 Erskine Bridge

The Erskine Bridge currently carries around 26,200 vehicles per day. Traffic levels on the bridge have been increasing steadily in recent years but the bridge still has substantial spare capacity at current levels.

While congestion is not a significant problem on the Erskine Bridge itself, changes to traffic levels on the bridge do impact on the whole of the Glasgow network, in particular in the Clyde Tunnel and the Kingston Bridge. Both of these routes suffer from congestion problems particularly in peak periods, with traffic levels significantly higher than Erskine. Given the closeness of these alternative routes, traffic is relatively sensitive to changes in toll costs. The impact on traffic to these other routes must be considered when examining the results of modelling changes in the tolls.

Removing the tolls from Erskine has a significant impact on the number of vehicles crossing – nearly doubling the total in both directions. This is mostly due to traffic being re-routed away from the Clyde Tunnel. This results in an increase in congestion on the Erskine Bridge, although the bridge has some capacity to cope with this, and a fall in congestion in the tunnel. The impact on the areas surrounding the bridge itself is less significant than that found for the Forth and Tay analyses. In terms of the network as a whole, the impact is mixed with decreases in delays on the north bank of the Clyde but increases elsewhere.

Halving the toll shows very little impact on congestion compared with the current situation, although traffic levels do increase. Increasing the toll to £1 shows traffic levels falling by around a third in both directions. As in the case of removing the tolls, this affects the Clyde Tunnel, with traffic increasing on this route. In terms of congestion we again see the opposite picture, with delays reducing around the bridge area and some increases around the north bank routes and the Clyde Tunnel.

Looking at existing tolls only, modelling for 2006 shows increased congestion on and around the Erskine Bridge. However the increase in journey times is relatively small compared with the increase in traffic levels. This reflects the levels of spare capacity on the bridge.

6.2.3 Forth Road Bridge

Traffic levels on the Forth Road Bridge are currently around 65,800 vehicles per day. The bridge operates at maximum capacity at peak times, and although there is some spare capacity inter-peak this is filling. Traffic levels on the bridge generally increase year on year and the Forth has grown faster over the long term than the other bridges.

High traffic levels on Forth cause significant congestion problems on the bridge itself, particularly in peak periods, and also delays on the roads in the surrounding areas. There are also very significant existing congestion problems in Edinburgh, although the relationship between that congestion and the Bridge is not analysed here.

The Kincardine Bridge provides an alternative route to the Forth Road Bridge, particularly for traffic making longer journeys (the diversion would be significant for traffic travelling from Fife into Edinburgh) and this bridge and the local area also experience congestion and delays.

Modelling the removal of tolls from the Forth leads to increases in traffic levels in both directions, mostly due to traffic switching from using the Kincardine Bridge. This causes further increases in delays on the bridge and extends the length of the peak period. There is a corresponding fall in congestion on the Kincardine Bridge.

Modelling halving the toll to 40p for cars shows an increase in traffic of around half that of removing the tolls.

Two different increases in tolls were modelled – to £2 and £5. Both show falls in traffic in both directions, with a much larger effect on northbound traffic. In the case of a £5 toll, northbound traffic falls by over two thirds. This decrease in traffic reduces delays on the bridge and increases congestion on Kincardine and approach roads on the north bank of the Forth, more significantly in both cases for the large increase in toll.

Were current toll levels to remain in place, the expected traffic growth to 2006 is expected to result in higher levels of congestion on the Forth than other bridges. This reflects the lack of spare capacity on this section of the road network. Modelling shows increased journey times over both Forth and Kincardine. The increase in congestion is particularly high for southbound traffic on the Forth.

6.2.4 Tay Road Bridge

Around 23,800 vehicles cross the Tay Bridge per day. Traffic levels on the bridge have steadily increased in recent years, although the bridge still has substantial spare capacity.

Congestion related to the Tay Bridge currently occurs both on the bridge and in surrounding areas at peak times, in particular on the north side of the Tay in Dundee itself.

Removing tolls on the Tay leads to large increases in traffic levels on the bridge, particularly in the southbound direction. As a result the alternative route of Friarton Bridge experiences a reduction in daily traffic levels. This leads to a slight increase in congestion and hence delays around the Tay Bridge area, but some decreases in West Dundee as a result of less traffic approaching the city from using the Friarton Bridge.

As with the other bridges, halving the toll has similar effects to removing the tolls but of much less magnitude.

Two increases in tolls were modelled – to £2 and £4. Both lead to decreases in traffic levels, particularly in the southbound direction. This decrease in traffic means reductions in congestion on the bridge and approach roads and increases in delays in west Dundee as a result of traffic switching to use the Friarton Bridge. The impact on congestion is greater for the larger increase in tolls.

Modelling for 2006, at current toll levels, shows that delays increased on the Tay Bridge and to the west of the city, although Friarton was expected to remain relatively congestion free, despite increased traffic levels.

6.2.3 Skye Bridge

As previously discussed, traffic levels on the Skye Bridge are such that congestion is not a current problem nor is likely to become one in the future. However the presence of the bridge would be expected to have some impacts on the local area. A socio-economic study looking at the impact of the Skye Bridge was carried out for the

Scottish Office and published in 2000^x. The study found that the opening of the bridge had led to growth in traffic to Skye. The socio-economic impacts of the bridge were found to be modest, although the report acknowledged that the bridge had been operating only a few years and that it may take some time for the effects of the bridge to be fully realised. A 2002 report commissioned by Highland Council found the tolls had considerably reduced the positive impact of the bridge on the local economy. The Scottish Executive had concerns about the methodology used in this report and questioned the robustness of the results.

Although no new research has been carried out for this Review we can draw on previous work to make an assessment of the likely impacts of removing tolls from the bridge. Removing tolls is likely to result in:

- more trips across the bridge by local residents;
- a possible increase in tourism, although this might be offset by a switch from long-stay to short-stay tourism;
- a slight benefit to local businesses through a reduction in travel costs; and
- a slight dis-benefit to the local economy through the loss of jobs at Skye Bridge Limited.

Overall, this assessment suggests that there may be a slight benefit to the Skye economy as a consequence of removing the tolls. This benefit would probably be limited to the local economy and could result in alternative tourist attractions in the Highlands being adversely affected. There is unlikely to be any significant net impact at the Scotland level.

6.3 Accessibility Issues

6.3.1 Rural Access

The Executive is committed to ensuring that people living in rural Scottish communities are not disadvantaged and are able to have access to a wide range of services.

Each of Scotland's four tolled Bridges provides a valuable network link. The importance of the bridges to their users depends on the journey purpose and the availability, frequency, reliability and cost of alternative links between origins and destinations.

Unlike the Skye Bridge, Erskine, Forth and Tay Road Bridges are located in or beside large urban areas^y where a choice of road and rail alternatives are available. Travellers wishing to cross the Firths of Forth and Tay may do so by car, via the toll-free Kincardine and Friarton Bridges respectively, or by public rail or bus services. Cross-Clyde travellers have a number of nearby toll-free road alternatives as well as public transport options although alternative routes involve travelling through or close to Glasgow City Centre.

^x Skye Bridge: Socio Economic Impact Evaluation by DTZ Pieda Consulting

^y Areas with populations of over 125,000

Travellers to and from Skye have no rail alternative. While a ferry service allows cars to transfer between Mallaig and Armadale, the return cost is £34.25^z and the mainland docking site is approximately 114 miles by road from the mainland end of the Bridge at Kyle of Lochalsh. The ferry crossing also takes longer and is timetable and weather dependent. The only road-based alternative to crossing by car is the half-hourly shuttle bus which runs between Kyle and Kyleakin, operated (and subsidised) by Highland Council, or on foot or by bicycle.

Although a detailed study of tolled bridge users' origins and destinations has not been undertaken, it is apparent that all journeys across Skye Bridge have either a rural origin or destination (or both). While seasonal traffic variations suggest that tourism accounts for a sizeable proportion of Skye Bridge crossings in the high season^{aa}, the fact remains that those who live on Skye have more limited transport choices than other tolled bridge users to access services on the mainland.

6.3.2 Access for Disabled Travellers

Exemptions apply on all four bridges to vehicles exempt from Vehicle Excise Duty, which includes vehicles registered to qualifying disabled drivers or their nominees. In addition, Erskine, Forth and Tay Road Bridges offer toll exemptions to vehicles carrying Blue Badge holders. Blue Badge holders are drivers or passengers with severe walking difficulties, severe upper limb disabilities or who are registered blind. As public transport is often not a viable option for people with such disabilities, Mobility Access Committee Scotland (MACS) is strongly in favour of exemptions from bridge tolls for Blue Badge holders and believe the same principle should apply at Skye Bridge.

MACS also reported that claiming the exemption is not always a straightforward matter. For some travellers it is simply a matter of presenting the Blue Badge to the toll collector, but for others who have not pre-registered, it involves completing a form before crossing. This can disrupt the smooth passage of vehicles through the toll booths and prolong the overall journey time for the disabled traveller and other vehicles in his or her wake. MACS informed the Project Team that this sometimes results in people foregoing their exemption rights to avoid causing a delay. Although Forth Road Bridge users can download the relevant form from the FETA website^{bb} for pre-completion and can apply for books of exemption vouchers to minimise the transaction process at the toll booths, many Blue Badge travellers are unaware of these options or how to access them.

^z using a 5-day return saver for a car plus driver

^{aa} see section 4.1.3

^{bb} www.feta.gov.uk

6.4 Environmental, Economic and Accessibility Issues – Key Points

Environmental Issues

- Tolls can have a positive environmental impact if they decrease the number of vehicle kilometres travelled, divert traffic away from areas of poor air quality, encourage the use of more environmentally-friendly modes of travel or reduce congestion.
- An increase in tolls at Erskine Bridge could exacerbate existing congestion and air quality problems for Glasgow City centre, while a decrease could have the opposite effect.
- Dundee is concerned about its city centre air quality which is linked to peak hour traffic on the Tay Road Bridge. A tolling regime designed to reduce or spread this peak could have a positive effect on air quality and congestion.
- Although there are no specific air quality issues around the Forth Bridge, 12% of morning trips are destined for Edinburgh City centre where an AQMA has been declared. As with Tay, a tolling regime designed to reduce or spread this peak could have a positive effect on the city centre's air quality and the Bridge's congestion.
- There are no air quality issues around Skye Bridge.

Economic Issues

- Congestion has an important economic effect, although this is not easily quantifiable.
- Each of the Bridges has a different relationship to areas of congestion:
- Forth and Tay both experience congestion already.
- Erskine does not experience heavy congestion but has a link to congestion in Glasgow city centre, given its close proximity to other non-tolled crossings
- There are no congestion problems associated with the Skye Bridge.

Accessibility Issues

- Residents of Skye have much less choice of alternative routes or modes of transport than other tolled bridge users
- There is inconsistent operation of toll exemptions for Blue Badge holders in Scotland. The procedures applying to Blue Badge holders can create delays.

7. *Implications of Change*

Summary of the main policy, financial and legal implications of making any change to the tolling regime

7.1 Policy Implications

There is a commitment in the Partnership Agreement to ending the discredited tolling regime at Skye. However, there is no commitment to making any changes to the existing toll regimes at the Forth, Tay or Erskine bridges.

When the tolls were introduced on the bridges, they were all used to fund the construction and/or ongoing maintenance of the bridges. However, given the traffic conditions we now experience in some parts of Scotland, it is important to consider bridge tolls in the wider context of congestion charging and road pricing. Account also needs to be taken of the Executive's aspirational target of stabilising road traffic levels at 2001 levels by 2021 – which is ultimately about limiting road traffic's impacts on the environment and cutting congestion.

Road pricing is used for demand management purposes where demand outpaces supply (i.e. demand for scarce road space) which results in congestion and pollution. It provides an economic incentive for motorists to either pay the charge for their journey, or change their route, mode or time of travel to avoid the charge. Road pricing can also raise revenues for transport infrastructure and services, and address environmental impacts.

Bridge tolls can be seen as a sub set of road pricing – although their objectives may be considerably narrower (as with the historical reasons for the tolls). Care needs to be taken with setting toll levels, however. In a perfect world, the toll would be set at an optimum level which meets the objectives for the area, road or bridge. In the case of tolled bridges this is likely to be a balance between addressing access, demand management (if this is required), ensuring efficient use of the associated road and public transport network, and funding the ongoing maintenance requirements of the bridge. However, decision makers also need to take account of what is deemed publicly acceptable, and toll levels may be lower in practice than this optimum level. Given the relatively broad nature of this review, we did not seek to find this optimum toll level for each bridge. We have simply considered some of the likely outcomes of making changes to the tolling regimes.

Responses to the consultation during this review expressed no consensus on the future of tolling at the four bridges. Some respondents felt that all tolls should be removed. Others felt that the tolls should end once construction costs had been repaid. Yet others supported the continued levying of tolls as a means of managing congestion, encouraging modal shift, funding maintenance costs and funding local transport projects.

The review has found that all the bridges operate in a different traffic context with some bridges suffering severe congestion (Forth and Tay), others suffering little or no

congestion (Erskine and Skye). Reduction or removal of the toll on Erskine offers the potential opportunity to relieve some congestion in the associated city centre^{cc}. Removing the tolls on one bridge, therefore, does not imply that this would be appropriate for any of the other bridges.

While each bridge is different, and toll levels should not necessarily be set at the same price, the review has flagged up a number of issues where a more cohesive approach could be taken. This could amount to a set of principles being applied to Scotland's tolled bridges – that would provide more certainty for bridge users, and better reflect the environmental and economic issues associated with bridge management.

Principles that require further consideration in Phase Two should include:

- The treatment of Blue Badge holders
- The use or otherwise of discount schemes
- The classification of vehicles
- Treatment (exemptions or discounts) of public transport vehicles and high occupancy vehicles
- Whether toll levels should have a direct relationship to the level of wear and tear on the bridge caused by different vehicle type.

7.2 Financial Implications

Tolling revenue is the product of the tolling tariff and the number of paying vehicles. As the tariff changes, the tolled route becomes more or less attractive and the number of paying vehicles will increase or decrease accordingly. Using traffic flows from the tolling scenarios modelled by MVA, the impact of changes on current tolling income was assessed for Erskine, Forth and Tay Road Bridges.

7.2.1 Erskine Bridge

Tolls from the Erskine Bridge contribute around £5m pa to the Executive's transport programme and any change to the tolls will have an impact on that figure; removing the tolls completely would remove that £5m contribution from the transport programme.

The results of modelling work conducted in Phase One indicate that only a marginal increase in tolling income would be gained by increasing the 60p each-way toll to £1, as significant numbers of vehicles would divert to alternative routes.

Although additional traffic was generated by the 50% reduction in tolls, tolling income reduced significantly. As it presently costs around 7p to collect each 60p toll, the cost efficiency of toll collection costs would be eroded by a reduction in tolls levied.

A significant decrease in tolling income resulted from changing the 60p each-way toll to a £1.20 northbound only toll, as significant numbers of northbound vehicles would divert to alternative routes.

^{cc} This would require strengthening of the bridge at an estimated cost of £20m.

No significant change in tolling income resulted from the tolling differential by vehicle type, with cars paying 50p in each direction and HGVs paying £1 in each direction.

Although not modelled by MVA, a decrease of around 25% in tolling income may be expected by removing tolls at weekends based on daily flows at Erskine Bridge shown in section 5.1.

7.2.2 Forth Road Bridge

Any changes to the tolling regime will affect the amount of revenue available for FETA to meet the ongoing care and maintenance costs of the Forth Road Bridge and to provide funding for schemes to improve cross-Forth crossings.

The results of modelling work conducted in Phase One indicate a significant increase in tolling income would be generated by increasing the current northbound-only tolls from 80p to £2 for cars and from £2 to £5 for HGVs, despite a sizeable reduction in northbound vehicles. The increase in revenue is no greater when tolls are set at £5 (cars) and £7 (HGVs) as the model shows even fewer vehicles using the Bridge. An increase in tolling income would enable projected costs to be met independently of external financing but cannot exceed sums required to operate and maintain the bridge and pay for cross-Forth transport improvements.

Halving the level of the tolls led to a significant fall in revenue, despite some increases in traffic levels. A decrease in tolling income would severely limit FETA's ability to support cross-Forth transport improvements and increase its dependency on external financing, including direct support from the Executive, for bridge maintenance and, possibly, bridge operations.

7.2.3 Skye Bridge

The financial implications of achieving the Partnership Commitment to ending tolls at the Skye Bridge are currently being discussed in negotiations with Skye Bridge Ltd. Those negotiations are commercially confidential and are not discussed further here.

7.2.4 Tay Road Bridge

Any change to the current tolling regime will affect the amount of tolling income available to the Tay Road Bridge Joint Board to meet its financial obligations.

The Tay Road Bridge Joint Board is confident that, with the capital maintenance programme funded mainly by capital grants, current tolls are sufficient to meet the debt-free requirement by 2016/17.

The results of modelling work conducted in Phase One indicate a significant increase in tolling income would be gained by increasing the current southbound-only tolls from 80p to £2 for cars and from £2 to £5 for HGVs, despite a reduction of approximately one-third of southbound vehicles. The increase in revenue did not significantly increase further when tolls were set at £4 (cars) and £6 (HGVs) as the proportional fall in vehicles using the bridge was different.

Any reduction in tolling income will increase dependence on Executive funding to meet maintenance costs, and may additionally limit the Joint Board's ability to provide for Bridge operations. Removing the tolls altogether would lead to a loss of around £3.4m per annum based on 2003 tolling income and resultant dependence on the Executive both for repaying loans and for bridge operations and maintenance.

Reducing the toll to 40p for cars and £1 for HGVs led to a large fall in revenue, although there was an increase in traffic. While increases in tolling income would reduce dependence on Executive funding to meet maintenance costs, increased revenue will not necessarily lead to the early repayment of loans where current loan terms would make this unfavourable. Within their current remit, the Tay Road Bridge Joint Board is unable to employ annual surpluses for local transport improvements in the same way as the Forth Estuary Transport Authority.

7.3 Legal Implications

The tolling regimes on each bridge were set up under different Acts and using different tolling orders which all have different criteria for modifying or removing tolls. The following sections summarise the legal steps needed to make any changes to tolls at each bridge.

7.3.1 *Erskine Bridge*

The Toll Order currently in force at Erskine is the Erskine Bridge Tolls Order 1992^{dd}. This sets the level of tolls at the Bridge. The Erskine Bridge Tolls Act 2001 extended the tolling period to 1 July 2006.

Section 1 of the Erskine Bridge Tolls Act 1968 enables the Scottish Ministers to levy, vary or revoke tolls and Section 2 provides that the Scottish Ministers may make an Order as to "the classes of vehicles", "the scales of tolls" and other provisions in accordance with which tolls are to be levied. Tolls for the Erskine Bridge can be levied at different rates and by reference to different circumstances such as the day of week, time of the day and probably also the number of occupants of the car.

Before a varying Order can be made the Scottish Ministers must publish a draft of the Order and specify a period for objections. The Scottish Ministers must hold an inquiry if an objection is pursued by a Local Authority or bodies with a substantial interest in the bridge (such as commercial undertakings and frequent users of the bridge). If any other objection is received and not withdrawn then the Scottish Ministers may hold a local inquiry if they think fit. After holding the inquiry the Scottish Ministers may make the Order either with or without modification.

If the Toll Order is revoked it would not be possible to make any further Toll Order in the future without further primary legislation as section 4(3) of the 1968 Act provides that Toll Orders can only extend a period of tolling. They cannot be used when there is no Toll Order in existence.

It should be noted that any measure which requires a tolling regime to operate on Erskine Bridge beyond 1 July 2006 will require the current tolling period to be extended using powers in section 4(3) of the Erskine Bridge Tolls Act 1968. The

^{dd} S.I. 1992/433

extension would be effected by Statutory Instrument, subject to affirmative resolution in the Parliament.

Schedule 2 to the Act requires that total tolls collected should not exceed the total sum of the capital costs (with interest) of the bridge, the ongoing costs of operating, maintaining and renewing the bridge both during the tolling period and afterwards, and interest on annual shortfalls. The Schedule 2 calculation for the year to 31 March 2003 shows that tolls collected since the Bridge opened have fallen some £260m short of exceeding the cap. This suggests that Schedule 2 does not operate as an effective cap on tolling.

7.3.2 Forth Road Bridge

The relevant provisions on tolling are contained in Part V of the Forth Road Bridge Order Confirmation Act 1958.

Scottish Ministers, FETA, any of the constituent councils of FETA or any person with a substantial interest in the Bridge can apply to revise the tolls. Any proposed increase or decrease to tolls requires a Revision of Tolls Order. Before a varying Order can be made a draft must be published and an objection period set. The Scottish Ministers must hold an inquiry if any objection is pursued and the objector asks for his or her representations to be heard at inquiry. An inquiry into FETA's current proposal to increase Class 2 tolls from 80p to £1 will begin on 6 December 2004.

To remove the tolls the Tolling Order could simply be revoked; however, this would likely prevent any subsequent Toll Order in the future without further primary legislation.

Sections 44 and 45 of the 1958 Act do not specify the basis upon which tolls can be charged. Section 43 simply refers to "traffic using the bridge". The 1958 Act does not prevent differential tolls; it simply does not specifically authorise them.

The question could be put beyond doubt by an amendment to the 1958 Act. This would probably have to be by primary legislation.

7.3.3 Skye Bridge

The contractual arrangements entered into with Skye Bridge Limited preclude Scottish Ministers from changing the current tolling regime without the concessionaire's consent. Further, there is no voluntary termination clause in the Concession Agreement although the agreement does provide a formula for calculating compensation where there is a "change of law" which would prevent the concessionaire from performing its obligations under the contract. Such a change of law would require primary legislation and, aside from timetabling difficulties (and consequent risks to the deliverability of the Transport Bill), the Executive could attract criticism by promoting legislation simply to terminate a contract which could be achieved by other means. This could discourage others from entering into future PFI contracts. The "change of law" option is therefore deemed undesirable.

The Partnership Agreement commitment to ending tolls at Skye Bridge therefore requires some form of agreement with the Concessionaire and options are presently

subject to negotiation. The Toll Order^{ee} for the Skye Bridge sets the maximum tolls which may be charged. If the Concession Agreement is ended it is therefore possible to remove tolls by agreement with Skye Bridge Ltd. However, the tolling order should be amended and revoked at a later stage using negative resolution procedures. In brief, the 1992 Toll Order would need to be amended to redefine the tolling period (it currently specifies it as 27 years), and then repealed. The 1997 and 1999 Variation Orders would also need to be repealed.

7.3.4 Tay Road Bridge

The current toll levels were fixed by the Tay Road Bridge (Revision of Tolls) Order 1995 which remains in force until it expires or is revoked or modified by a further order. No expiry date is specified in the Order.

The Tay Road Bridge Order Confirmation Act 1991 permits Scottish Ministers to make a toll revision order on their own initiative or after written representations by the Tay Road Bridge Joint Board, its constituent Councils, or any body of traders or owners/users of vehicles or any person who is, in the opinion of the Scottish Ministers, a proper person for the purpose.

Scottish Ministers have a wide discretion as to whether or not to make an order revising the tolls. The test is that they may make an order “if they think fit” but they must hold an inquiry if they think it is necessary or desirable, or where asked to do so by the Joint Board, its constituent Councils, or any person pursuing an objection.

Tolls could be removed by revoking the tolling order. However it would not be possible to make any further Toll Order in the future without further primary legislation as the 1991 Act provides only for the revision of authorised tolls. It cannot be used when no authorised tolls are in place.

The Tay Road Bridge Order Confirmation Act 1991 does not specify the basis upon which tolls can be charged. It allows the Scottish Ministers to increase or decrease the tolls but neither specifically authorises or prohibits differential tolling. As with the Forth Road Bridge’s tolling regime, options for introducing variable tolling provision would initially require further legal consideration.

Sections 43 and 44 of the 1991 Act do not specify the basis upon which tolls can be charged. Section 43 states that the Joint Board “may demand, take and recover in respect of traffic using the bridge....the tolls authorised”. As with the Forth Road Bridge, this does not prevent variable tolling rates – it simply does not specifically authorise them.

7.4 Key Points

- Reducing or removing the tolls on any bridge will require another stream of funding to be identified for that bridge to cover any shortfall for maintenance

^{ee} The Invergarry-Kyle of Lochalsh Trunk Road (A87) Extension (Skye Bridge Crossing) Toll Order 1992 (S.I. 1992/1501)^{ee} (as varied by S.I. 1997/2941 and S.S.I. 1999/196)

- Originally each of the tolling regimes was established to pay for the construction costs and maintenance of the bridges. Each of the bridges is now in a different situation with regard to the original costs
- The Tolling Order at Erskine Bridge will expire on 1 July 2006 unless a separate extension Order is promoted, or the existing Order is revoked before this date. Erskine's tolling legislation is flexible enough to allow for different rates of tolls to apply in different circumstances although any variation may require a public inquiry if a relevant objection is made. Revoking the tolls would prevent the reintroduction of tolls at a future date without primary legislation. Continuing the current tolling regime is likely to generate annual surpluses which would be credited to the Executive's transport programme, while ending the tolls would result in a projected loss in excess of £5m per annum. Schedule 2 of the Erskine Bridge Tolls Act 1968 places a limit on the tolls collected by assessing them against a "notional debt"; economic changes since 1968 have meant that the framework for defining that notional debt produces an inappropriately large figure.
- The Tolling Order at the Forth Road Bridge will expire on 31 March 2006 unless varied, extended or revoked. Any variation to the existing tolling regime may require a public inquiry if a relevant objection is made. Revoking the tolls would prevent the reintroduction of tolls at a future date without primary legislation and result in substantial maintenance costs for the Executive. Continuing the current tolling regime is expected to be insufficient to meet future maintenance costs and a decision on FETA's application to increase Class 2 tolls for this reason will follow the scheduled public inquiry.
- The period of tolling on Skye Bridge is linked to the concessionaire's recovery of agreed costs which in turn is linked to the level of Bridge traffic. Scottish Ministers cannot unilaterally amend the existing tolling regime nor terminate the Concession Agreement. The current discount scheme allows Scottish Ministers to adjust amounts paid by Bridge users by making good the value of discounts to the Concessionaire from public funds.
- Should the Scottish Ministers seek to revise the existing tolls at the Tay Road Bridge, any variation may require a public inquiry if a relevant objection is made. Revoking the tolls would prevent the reintroduction of tolls at a future date without primary legislation. Continuing the current tolling regime is expected to be sufficient to repay outstanding debts within appropriate timescales and to write off the debts owed to the Executive, while ending the tolls would render the Executive liable for servicing these debts and for Bridge operations and maintenance costs.

8. *Tolled Bridges Review Phase Two*

Scope and project plan for the second Phase of review to cover broader issues relating to management, operation and maintenance of tolled bridges and wider consultation

The White Paper set out the broad terms of reference for Phase Two as including “*an examination of the broader issues, relating to the management, operation and maintenance of the tolled bridges. This will also include an assessment of how tolled bridges relate to the new regional and national transport agencies.*”

The terms of reference for Phase Two have been developed from issues emerging from Phase One, as well as the requirements set out in the White Paper.

Phase Two will include the following:

Management Structures and Objectives

Review existing management structures to ensure that arrangements complement the development of regional transport partnerships and the national transport agency, and are responsive to the requirements of future transport priorities.

Consider whether the powers of the management body for each tolled bridge should cover investment in local transport infrastructure, including support for public transport and encouragement of modal shift from private cars.

Statement of Scottish Tolling/Charging Principles and Objectives

Consider whether there is a case for applying a consistent set of principles on every tolled bridge in Scotland, and if so, what these principles might be. Issues to be considered will include:

- Vehicle classification types.
- Exemptions for disabled drivers, emergency services vehicles and breakdown vehicles.
- Exemptions or reduced tolls for public transport/high occupancy vehicles
- Whether toll levels should have a direct relationship to the level of wear and tear caused by different vehicle types.
- The use or otherwise of discount schemes.

Procedures for adjusting Tolls or Charges

Consider whether there is a need to amend the legislative and procedural arrangements for changing tolling or charging levels and periods, in a way that is transparent, flexible, justifiable, and responsive to changing circumstances.

Maintenance Provision

Review operational and funding arrangements to ensure that adequate provision is made for future maintenance and upgrading requirements.

Technological Developments

Review developments in modernising tolling operations on Scottish tolled bridges and the need to progress towards compatibility and interoperability with local and national road pricing schemes. This will take account of policy and legislative developments in the EU, in particular the draft European Directives on interoperability of infrastructure charging.

Bridge Specific Issues to be Considered in Phase Two

Erskine Bridge - consider future arrangements including the need for legislative changes that may be necessary for future funding, operation and management of the bridge. Consideration should include an assessment of the impact on congestion elsewhere in Glasgow in a way that achieves an optimum outcome without having a detrimental impact elsewhere in the city. In addition, consider the need for upgrading and refurbishment of the existing toll plaza, tolling systems and administration building.

Tay Road Bridge - consider how future tolling arrangements could help tackle congestion and air quality issues affecting Dundee city centre, including a review of proposals by Tay Road Bridge Joint Board (TRBJB) to re-locate the toll booths at the southern end of the bridge.

Forth Road Bridge - consider proposals to achieve a significant shift from single occupancy vehicles (SOVs) to multiple occupancy vehicles (HOVs) through such tolling structures and arrangements as differential tolling and discount schemes designed to benefit HOVs.

Consultation

Phase One of the Bridges Review used a targeted consultation approach, focussing on individuals and organisations with expertise or particular interests in the tolled bridges. Phase Two will take the same approach. However, given the broader terms of reference, this consultation exercise may be extended to include consultees and organisations not involved in Phase One.

Publication

The outcome of Phase Two will be made available to the public. Recommendations on the appropriate publication format, and its linkage to Phase One, will be brought forward as part of Phase Two.

Timeframe

Phase Two will be presented to the Minister for Transport during summer 2005.

9. Appendices

9.1 Consultees

All MSPs
Scottish Environment Protection Agency Head Office
The AA
RAC Foundation for Motoring Ltd
CBI Scotland
Scottish Chambers of Commerce
Federation of Small Businesses
The Road Haulage Association Ltd
Freight Transport Association Scotland and Northern Ireland
British Motorcycle Federation
The Erskine Hospital
Confederation of Passenger Transport
SKAT Campaign
Old Schoolyard
Transport 2000
Scottish Environment Link
The Transport Research Institute
Forth Ports Plc
MACS
SPOKES
TRANSform Scotland
Scottish Association for Public Transport
Skye Bridge Ltd
East Dunbartonshire Council
West Dunbartonshire Council
Glasgow City Council
Renfrewshire Council
APCOA Parking (UK) Ltd
Amey Highways
City of Edinburgh Council
Fife Council
Perth and Kinross Council
West Lothian Council
Forth Estuary Transport Authority
Forth Road Bridge management
Angus Council
Dundee City Council
Fife Council
Tay Road Bridge Joint Board
Tay Road Bridge management

9.2 Consultation letters

LETTER TO MSPS – PHASE ONE



SCOTTISH EXECUTIVE

Minister for Transport
Nicol Stephen MSP

Victoria Quay
Edinburgh EH6 6QQ

Telephone: 0131-556 8400
scottish.ministers@scotland.gsi.gov.uk
<http://www.scotland.gov.uk>

Our ref:

2 July 2004

REVIEW OF TOLLED BRIDGES – PHASE ONE

In the Transport White Paper published on 16 June 2004 I announced our arrangements for taking forward our Partnership Agreement commitment to review existing bridge tolls in Scotland.

The Transport White Paper (paragraph 4.24) explains that it is our intention to carry out the review in two phases. The first phase will deal with existing tolls. It will assess all tolls, including the way in which potential changes to tolls could help achieve our environmental and economic objectives of reducing pollution and congestion. The Terms of Reference for Phase 1 of the review are attached. We are aiming to complete this phase by the end of the summer.

To help us undertake Phase One, we want to draw on the expertise and experience of those people and organisations closely associated with the tolled bridges. These will include the bridge authorities, chief transport officers of relevant local authorities, Mobility Access Committee Scotland (MACS), and those MSPs with interests in the bridges.

The information gathered from Phase One will help to inform any early decisions that may be taken on tolls. We will then, with this information, move onto Phase Two. This will include an examination of the broader issues, relating to the management,

operation and maintenance of the tolled bridges. This will also include an assessment of how the toll bridges relate to the new regional and national transport arrangements. We will be undertaking further consultation during this phase, and seek views from a broad range of organisations. This second phase should be completed in time to allow the management of the bridges to be smoothly incorporated into the new Scottish Transport arrangements.

I would be very grateful if you would participate in the review. Written comments on the issues relevant to Phase 1 should be submitted to the Bridges Review Team, Transport Division 1, 2D, Victoria Quay, Edinburgh, EH6 6QQ by 31 August 2004. If you wish to meet with the review team over the summer to discuss Phase 1 issues please contact Robert Galloway on 0131 244 5095 or Robert.Galloway@scotland.gsi.gov.uk.

Your views and comments will be collated and considered in production of the Phase 1 Report.

My thanks in anticipation of your assistance on this important issue.

A handwritten signature in black ink that reads "Nicol Stephen". The signature is written in a cursive, flowing style.

NICOL STEPHEN

LETTER TO OTHER CONSULTEES – PHASE ONE



SCOTTISH EXECUTIVE

Minister for Transport
Nicol Stephen MSP

Victoria Quay
Edinburgh EH6 6QQ

Telephone: 0131-556 8400
scottish.ministers@scotland.gsi.gov.uk
<http://www.scotland.gov.uk>

Our ref:

02 July 2004

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The information gathered from Phase One will help to inform any early decisions that may be taken on tolls. We will then, with this information, move onto Phase Two. This will include an examination of the broader issues, relating to the management, operation and maintenance of the tolled bridges. This will also include an assessment of how the toll bridges relate to the new regional and national transport arrangements. We will be undertaking further consultation during this phase, and seek views from a broad range of organisations. This second phase should be completed in time to allow the management of the bridges to be smoothly incorporated into the new Scottish Transport arrangements.

I would be very grateful if you would participate in the review. If you wish to get in touch with the review team please contact Robert Galloway on 0131 244 5095 or Robert.Galloway@scotland.gsi.gov.uk, or by post at Transport Division 1, 2D, Victoria Quay, Edinburgh, EH6 6QQ.

My thanks in anticipation of your assistance on this important issue.

A handwritten signature in black ink that reads "Nicol Stephen". The signature is written in a cursive, flowing style.

NICOL STEPHEN

REVIEW OF TOLLED BRIDGES

TERMS OF REFERENCE– PHASE ONE

Building on the Partnership Agreement and White Paper commitment to a review of existing toll bridges in Scotland, the terms of reference (scope) for Phase One of this review are to produce:

- A summary of existing toll regimes, identifying the history of each toll regime, financial performance and projected costs for future operations and maintenance
- Conduct a stakeholder analysis and develop a consultation process for both phases of the review
- Identification of any significant environmental and economic issues (particularly pollution and congestion), that link to the tolls
- Modelling of the past, current, and future trends of traffic levels, differentiated by time of day/day of week/season (including identification of future developments that may impact on traffic levels)
- An analysis of the implications of removing the tolls, reducing the tolls; maintaining the status quo; increasing the tolls; differential toll by time of day, car occupancy, vehicle class etc
- Outline how above options for changes to existing toll regimes may impact on Ministerial environmental and economic objectives and commitment to improve access for rural communities
- Summary of the main policy, financial and legal implications of making any change to the tolling regime
- Scope and project plan for the second phase of review to cover broader issues relating to management operation and maintenance of tolled bridges and wider consultation

9.3 Annual record of Erskine Bridge Tolling Income / Maintenance Costs^{ff}

Year to 31 March	Tolls collected £	Maintenance (Revenue) £	Maintenance (Capital) £	Surplus/ <i>shortfall</i> £
1972	194,775	52,458		142,317
1973	312,273	88,274		223,999
1974	359,570	100,037		259,533
1975	380,557	121,185		259,372
1976	417,495	456,192		<i>-38,697</i>
1977	471,743	681,976		<i>-210,233</i>
1978	524,666	934,462		<i>-409,796</i>
1979	582,760	817,467	7,300,000	<i>-7,534,707</i>
1980	525,059	814,800		<i>-289,741</i>
1981	679,171	772,151		<i>-92,980</i>
1982	843,467	1,564,378		<i>-720,911</i>
1983	1,194,705	2,051,090		<i>-856,385</i>
1984	1,257,592	966,915		290,677
1985	1,373,882	267,609		1,106,273
1986	1,394,421	264,615		1,129,806
1987	1,506,547	278,810		1,227,737
1988	1,627,605	289,941		1,337,664
1989	1,786,179	269,878		1,516,301
1990	2,360,403	40,409		2,319,994
1991	2,644,825	110,446		2,534,379
1992	2,814,503	67,157		2,747,346
1993	3,888,352	188,812		3,699,540
1994	4,042,217	134,310		3,907,907
1995	4,038,487	5,370,000		<i>-1,331,513</i>
1996	4,288,113	947,031 ^{gg}		3,341,082
1997	3,775,926	427,990		3,347,936
1998	4,373,916	241,525		4,132,391
1999	4,513,415	264,330		4,249,085
2000	4,775,450	610,840		4,164,610
2001	4,500,770	684,086		3,816,684
2002	5,048,387	794,005		4,254,382
2003	5,390,537	1,409,844		3,980,693
Total	71,887,768	22,083,023	7,300,000	42,504,745

^{ff} Data Sources: Erskine Bridge annual accounts, written answers S2W-3967 and S2W-3970

^{gg} Excludes £5m cost of oilrig collision paid from suspense account. Compensation being pursued.