TOLLED BRIDGES REVIEW

PHASE TWO REPORT

2006

FOR THE MINISTER FOR TRANSPORT
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Executive Summary

Background

1. 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." The Transport White Paper (2004) stated: “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”. The terms of reference for Phase Two were informed by the findings from Phase One.

2. The Executive’s aim for the tolled bridges is to strike an effective balance between addressing access, managing demand (if this is required), ensuring efficient use of the associated road and public transport networks, and funding the ongoing maintenance requirements of the bridge. This report considers these strategic objectives and the implications of the future management, operation and tolling of each of the bridges. The methodology for Phase Two included a public consultation document and subsequent analysis, targeted stakeholder meetings, traffic modelling, literature reviews, technical reports undertaken by consultants, an options appraisal of management options, and discussions with Executive colleagues.

A Strategy for Tolling

3. Chapter 2 discusses the Executive’s past and future strategy for tolling on Scotland’s bridges, including the historical reasons for levying tolls, and the scope for using tolls or charges to address the growing problem of congestion, where that is required.

The Public Perception of Tolling

4. Bridge and road tolls are always controversial. Any debate around tolls, whether it be to remove them, increase them, or change aspects of the tolling regime (for example exemptions, or charging different tolls at different times of the day), needs to be properly informed. People need to understand the full implications of any change – not just for themselves but for other bridge users, the local and strategic transport network, the environment and the economy.

5. We know, both anecdotally and from research on road pricing and bridge tolls, that a perception of fairness is very important. If people have to pay a toll, they want to know how the revenue will be spent, and how they will benefit. They also want to know there are public transport options or other alternatives. This puts a major responsibility on the tolling authority to consider how it will communicate with, inform and consult with bridge users and other interested groups.
Funding construction, maintenance and operational costs

6. Where tolls were set up to pay for the construction of a bridge, and these costs have not yet been met, there is a strong case for users to continue to pay tolls which contribute to outstanding costs as, without a tolling regime in place, the bridge would not have been constructed; each was built on the understanding that it would be paid for by users. This may be reconsidered for specific bridges if there are significant economic, environmental or social reasons for doing otherwise.

7. Where the construction costs have already been met, using tolls to fund maintenance and operational costs is not in itself a compelling reason to keep the tolls unless this has been made clear from the outset – this is inconsistent with other parts of the road network and is perceived by motorists as unfair.

Managing traffic demand

8. Tolls can play an important role in helping the Scottish Ministers meet the wider objectives of managing traffic patterns and promoting more efficient use of the road and other transport networks, as part of an integrated approach involving all relevant modes, including car, bus, rail and ferries. Modelling from Phase One indicated that traffic levels on the tolled bridges and their approach roads are growing at a faster rate than elsewhere on the road networks. Where congestion is an issue, well designed tolling regimes can be implemented which encourage a shift from single occupancy journeys to public transport or multiple occupancy car trips. Tolling regimes can also encourage travellers to consider whether their journey is necessary, or can be made in other ways or at different times. Visible and appropriate transport improvements should be in place before toll increases are made to address demand.

9. At Erskine, there is currently no congestion problem on the Bridge itself, and tolling cannot be justified on the basis of demand management. There are congestion problems elsewhere in Glasgow, and Glasgow City Council has declared an Air Quality Management Area (AQMA). Modelling has shown that congestion elsewhere, towards the centre of Glasgow, can be eased, and air quality problems improved, if tolls at Erskine are removed. These benefits would have to be “locked in” and there may be some localised increases in traffic that would need to be managed.

10. At Forth, there are severe congestion problems on the Bridge and no solution has been identified for those problems which does not include tolling as a critical element. Modelling indicates that congestion issues are improved at Forth if higher tolls are charged. Actual toll levels are a matter for the bridge authority to determine in the first instance, but Scottish Ministers make the final decision.

11. At Tay, there are some congestion problems at peak times, and Dundee is declaring an AQMA. Bridge traffic contributes to the air quality problems. As at the Forth Road Bridge, no solution has been identified for those problems which does not include tolling as a critical element. Modelling indicates that congestion issues are improved at Tay if higher tolls are charged. Actual toll levels are a matter for the bridge authority to determine in the first instance, but Scottish Ministers make the final decision. TRBJB’s investigations indicate that a move to south-side tolling in the long term would allow further improvements e.g. in provision for public service and multiple occupancy vehicles.
Investing in transport networks

12. Where a tolling regime is required to address congestion and traffic management objectives, maintenance and operational costs of the bridge should be the first priority for expenditure. Where toll revenues exceed operating and programmed maintenance costs (e.g., because the tariffs are being used to influence demand), there is a strong case for reinvesting in wider improvements to the surrounding transport network, where possible. This is to increase the efficiency of the network (and, as discussed at section 2.1, promote public acceptability of the tolling regime).

Tolls or road user charging?

13. Tolls are based on specific legislation for each of the bridges. That legislation provides for a tolling regime which was relevant at a particular time, and was designed to provide an income stream to cover the costs of construction, and ongoing maintenance and operational costs, for each of the bridges individually. While tolling legislation could be amended to give the tolling authority greater flexibility, changes to the purpose of tolling for any of the bridges requires primary legislation.

14. Alternatively, the road user charging (RUC) provisions in the Transport (Scotland) Act 2001 are the result of wide-ranging consultation on the use of road pricing techniques for demand management purposes; are more flexible than the existing tolling provisions; and have a strategic purpose as part of a local transport strategy. These provisions currently apply only to local roads; achieving those benefits on bridges which are trunk roads would require significant new primary legislation.

Managing the Tolled Bridges

15. Chapter 3 examines potential management models for each of the three tolled bridges for the future, in particular against the new transport landscape in Scotland, and includes the outcomes of a qualitative options appraisal exercise.

The new transport landscape

16. Transport Scotland and the new RTPs form part of a new approach to delivering transport in Scotland. Even if they are not directly responsible for any of the bridges, Transport Scotland and the relevant RTPs will be key partners of bridge authorities.

Options Appraisal

17. Five options for managing the bridges were consulted on:
   - Transport Scotland
   - Regional Transport Partnerships (RTPs)
   - A Forth Estuary Transport Authority (FETA) style body
   - A Tay Road Bridge Joint Board (TRBJB) style body
   - A new single Scottish Tolled Bridges Authority
Two further options were suggested during the consultation which have also been assessed:

- A combined east coast FETA-style authority for both Forth and Tay
- Private management of the bridges

In addition, we have assessed the possibility of removing the tolls at each of the bridges.

**Methodology**

18. Each of the eight management options has been examined against the four key objectives for the tolled bridges: managing traffic demand, where and if this is required; efficient use of the surrounding road and public transport networks; funding ongoing maintenance; and addressing access.

19. We have also appraised the achievability of each option against a range of criteria:

- legislative/legal issues
- a broad consideration of the costs and savings of implementation
- impacts and acceptability, informed by the consultation exercise
- timescale to implement
- wider impacts, i.e. economic and environmental

**Discounted Options**

20. In the course of the appraisal, three of the options were considered not to meet the criteria set out above for achieving the aims of the tolled bridges.

21. **Private enterprise** – an initial assessment indicates that passing the management and operation of these key pieces of infrastructure to private enterprise could provide benefits in terms of financial savings and security for the Scottish Ministers over the course of a long term agreement. However, the risks associated with the maintenance and operation of the bridges, and the fact that there is little experience of operating such structures, could mean that the terms of such an agreement would offer no advantages over the other management models considered as part of this Review. In particular, there are potential tensions between the desire of an operator to ensure that the operation is profitable, and the need to strike a balance between the key aims for the existing tolled bridges. There are different considerations where new infrastructure is required – e.g. where the overriding aim is the provision of a new crossing.

22. **Joint Forth and Tay management body** – the appraisal indicates that though there are some rationalisation gains under this model, mainly from sharing back office functions, these would be offset by other pressures. These include the cross-over of local authorities with interest in only one of the bridges, the issue of “ring-fencing” revenues for each bridge, the continued need for a large number of staff on site at each of the bridges, and the distinct challenges that each of the bridges faces in the future.

23. **Scottish Tolled Bridges Authority** – the appraisal indicates that there are significant legislative and potential cost implications associated with this option, with marginal benefits that could be captured by other options. Those responding to the consultation did not see any advantages over other possible management models for the bridges, and were concerned by the loss of local accountability, particularly for the Tay Road Bridge.
Options for Erskine Bridge

24. Analysis indicates that, on balance, Transport Scotland should be responsible for the bridge, and that tolls should be removed. The opposition to tolling at the Bridge from local authorities in the area, MSPs and others, means that it would be difficult to gain acceptance for alternative management options at the Bridge. In terms of meeting construction costs and/or managing traffic demand at the Bridge, there is no strong policy basis for continuing to charge tolls. Traffic modelling has shown that removing the tolls can ease congestion elsewhere in Glasgow, particularly through the Clyde Tunnel and on the Clydeside Expressway and a number of other routes to the north of the Clyde. This would improve the efficiency of the wider road network.

25. If tolls were removed, all efforts would have to be made to “lock in” the resultant congestion benefits in Glasgow to ensure that the new free space did not fill up with new trips in the future. Removal of the tolls would result in a loss of toll income, amounting to some £5 – £6m per annum, although this would be partly offset in other cost savings. If tolls remain, Transport Scotland is the most appropriate management option, given the high percentage of strategic traffic and the lack of support from the relevant local authorities for other models.

Options for Forth Road Bridge

26. Analysis indicates that tolls should remain on the Forth Road Bridge, and that the Forth Estuary Transport Authority (FETA) is, on balance, the most appropriate management option. FETA has the powers to address congestion and manage traffic demand, invest in wider transport improvements, make financial provision for planned maintenance and upgrading of the bridge (some £113 million between 2006/7 and 2020/21), and take forward a road user charge. However, it has experienced some significant problems recently due to its governance arrangements. This has led to uncertainty for bridge users. As the Bridge represents a key link in the transport network, management by Transport Scotland could allow Ministers to manage cross-Forth travel in a more strategic manner. This would require primary legislation. The RTP option is less appropriate as not all local authority members have a direct interest in bridge issues and, in the early stages, the relevant RTP will not be set up to manage major infrastructure.

Options for Tay Road Bridge

27. Analysis indicates that tolls should remain on the Tay Road Bridge, and that the Tay Road Bridge Joint Board should continue to manage the bridge. The Board would benefit from having extra powers to tackle congestion on and around the bridge, and this would be assisted by removing the statutory requirement on the Board to repay all the outstanding debts by 2016/17.

28. The current Board has no remit beyond maintaining and operating the bridge itself. This limitation means that it cannot meet the complex challenges required to manage and maintain the bridge in the greater context of the transport network. Both the RTP and Transport Scotland options are inappropriate options for Tay. The Bridge straddles the boundary between two RTP areas and therefore selecting the appropriate RTP would be difficult; the large majority of traffic on the bridge is local and therefore it would not be appropriate to bring it into Transport Scotland at this time. While moving to the FETA
model under the Transport (Scotland) Act 2001 would allow the Board to be more flexible, recent experience at Forth has shown that the governance arrangements of FETA can be problematic, and those problems may be reproduced at Tay if a FETA-style body were introduced. Furthermore, repayment of the outstanding debt on Tay should remain a priority of the tolling regime. For that reason, the FETA model’s greatly expanded powers of investment in wider transport improvements might be unnecessary. However, the existing Board’s powers should be widened to allow it greater flexibility in meeting emerging challenges.

Setting Tolls

29. Chapter 4 discusses a number of specific issues in relation to how toll levels are set – the procedure for changing tolls; exemptions and discounts for specific vehicles or travellers; and the relationship between tolls and the damage caused to the bridge. It also considers current and future developments which will have an influence on tolling – technological developments, and standardisation of vehicle classification.

Legislation and procedures for setting and changing tolls

30. The current legislation and procedures for setting or varying tolls are not consistent across the tolled bridges and, as the 2004 inquiry relating to the Forth Road Bridge tolls showed, may not be perceived as an appropriate way of handling objections to proposed toll changes. This conclusion is supported by most respondents to the consultation. It is important that tolled bridge users continue to be consulted on proposed changes and that their views are taken into account in the decision-making process, but Ministers should have final approval of changes. Further analysis is required to develop a consistent and fair approach for setting and varying tolls.

Exemptions from tolls

31. The Scottish Ministers are committed to improving access for all travellers, including disabled travellers. Continuing exemption from bridge tolls for disabled drivers supports that policy and is consistent with The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004. However, there is a need to ensure that the verification systems can operate to speed travellers through the toll booths as quickly as possible, through improving current manual systems and by seeking to make the most of emerging technology to verify Blue Badge, and other, exemptions automatically.

32. There is widespread support for extending toll exemptions to vehicles operated by the Coastguard. A change to this effect is also in line with The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004. There is also strong support for exempting public service vehicles (PSVs) from bridge tolls in Scotland, consistent with the Executive’s policy of encouraging greater use of public transport. The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004 provide a possible framework for defining and exempting PSVs. A strong case has not been made for extending exemptions to other groups or types of vehicle. These include commercial breakdown services and multiple occupancy vehicles.
Discounts from tolls

33. There is broad support for tolling incentives for multiple occupancy vehicles (MOVs) where congestion is an issue. Discounts, for example, for MOVs could help bridge authorities to better manage traffic demand in terms of the number and timing of vehicle crossings, where this is required. Discounts may also offer bridge authorities greater scope for managing demand than an exemption, as the amount of the financial incentive can be subject to greater variation. The multi-crossing (or frequent user) discount, however, is contrary to the key aims for the tolled bridges, and is out of line with wider objectives relating to traffic stabilisation.

34. There is scope for improving traffic flows and tolling efficiency through the use of electronic payment systems. Discounted toll charges could be used as an effective incentive to encourage travellers to use such schemes by, for example, fitting electronic tags to their vehicles. However, this would need to be balanced against traffic outcomes and the need to ensure extra trips are not rewarded.

Relationship between damage caused by vehicles and toll levels

35. It is necessary to strike a balance between ensuring the ease of movement of goods and services, to support the economy of Scotland, and asking bridge users to pay an appropriate contribution to the costs of maintaining the tolled facility. The present tolling structures at Forth and Tay Road Bridges go some way towards this, while the flat rate toll at Erskine takes no account of the impact of different vehicle types and loads. Overall there is probably a case for tolling structures including higher tariffs for HGV traffic, to reflect their impacts. However, tolls should not be set at so high a level as to discourage economic activity, or redirect significant heavy traffic to less appropriate routes.

Modernising tolling operations

36. Both FETA and TRBJB are moving towards the introduction of modern electronic tolling systems which offer a choice of payment methods to drivers and offer scope for better traffic management and improved flows at the toll booths, as well as reducing the costs and resources involved in handling cash transactions. The systems being introduced or investigated are compliant with EU requirements on interoperability of electronic toll systems, and will allow recognition of On Board Units (OBUs) from other charging schemes. At Erskine Bridge, tolling systems are currently manual only, but will have to be updated in the near future if tolling remains on the bridge.

Standardising vehicle classifications

37. Standardisation of vehicle classification can bring significant benefits to both bridge users and tolling operators. With the move towards electronic tolling, there is a real opportunity to drive operational costs down, by implementing technology to a common standard across all three bridges. While there are currently difficulties in agreeing a common set of classifications, and in designing systems which can automatically detect and distinguish between different vehicle types, these issues are being addressed on a UK and Europe-wide basis, e.g. through the introduction of the European Directive on the Interoperability of Electronic Road Toll Systems in the Community.
Caveat

Since the Review was completed, two significant issues have arisen in relation to the Forth Road Bridge: the results of the main cable testing; and FETA’s Application in Principle for a Road User Charge under the Transport (Scotland) Act 2001. Neither of these issues, nor the subsequent decisions relating to a potential replacement crossing, have been considered in the Review.
1. Introduction

This is the final Report of the Scottish Executive’s Tolled Bridges Review. Phase One of the Review was carried out in 2003 and 2004, and reported to Ministers in November 2004. Phase Two of the Review was carried out during 2005. The Review has been led by members of the Road Pricing Team in the Scottish Executive’s Enterprise, Transport and Lifelong Learning Department.

This Report sets out the background to Phase Two, the methodology undertaken and the findings of the Review. Chapter 1 summarises the context for the Review and details the Terms of Reference; Chapter 2 discusses the Executive’s past and future strategy for tolling on Scotland’s bridges, including the historical reasons for levying tolls, and the scope for using tolls or charges to address the growing problem of congestion, where that is required; Chapter 3 examines potential management models for each of the three tolled bridges for the future, in particular against the new transport landscape in Scotland, and includes the outcomes of a qualitative options appraisal exercise; finally, Chapter 4 discusses a number of specific issues in relation to how toll levels are set. Appendices to the Report include an analysis of the responses received to the consultation paper, and a summary of the findings of traffic modelling and technical reports. The detailed options appraisal tables used to assess the management options are available on request.

1.1 Context for Review

The Executive’s aim for tolled bridges is to strike an effective balance between addressing access, managing demand (if this is required), ensuring efficient use of the associated road and public transport networks, and funding the ongoing maintenance requirements of the bridge.

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."

The Scottish Executive’s Transport White Paper published on 16 June 2004\(^1\) 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."

The first phase of the review examined the existing tolling structures, including the impact of tolls and the way in which potential changes to tolls could help achieve the Scottish Executive's environmental and economic objectives of reducing pollution and congestion.

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\(^1\) Scotland’s Transport Future, Scottish Executive, June 2004
The information gathered from Phase One was considered by Ministers in October 2004 and helped to identify a range of issues to be taken forward during Phase Two.

Following the ending of tolling at the Skye Bridge on 21 December 2004, there are now three tolled bridges in Scotland – Erskine Bridge, Forth Road Bridge and Tay Road Bridge. This report considers the strategic objectives and implications of the future management, operation and tolling of each of the bridges. It also examines how management models and tolling regimes can support wider Executive objectives, for example in helping to reduce congestion, encouraging greater use of public transport, and promoting a move from single occupancy car use to public transport or multiple occupancy car journeys. At a more detailed level, the Review provides an opportunity to address a number of specific tolling issues, for example the use of exemptions and discounts.

1.2 Terms of Reference

The terms of reference for Phase Two were developed from the findings and issues emerging from Phase One, as well as the requirements set out in the 2004 White Paper. They are:

Management Structures and Objectives

Review existing management structures to ensure that arrangements complement the development of regional transport partnerships (RTPs) 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 European Union (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.

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

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.

1.3 Consultation

Some of the issues covered in Phase Two have been taken forward internally or in consultation with relevant experts and professionals. However, there are a number of broad issues which are of wider concern and interest. In recognition of this, a consultation paper was published on 15 April 2005. This posed twenty questions organised around two central themes – factors to be considered when setting tolling levels, and future management arrangements for the tolled bridges.

The consultation paper sought stakeholders’ views on the presumption that tolling will continue at each of Scotland’s three tolled bridges. This approach did not mean that a decision has already been taken to retain tolls – it has not. However, our aim has been to gather stakeholders’ views on the implications of change, rather than to establish their desire for change.

The consultation period ended on 8 July 2005, with 63 written responses received. Copies of all responses have been placed in the Scottish Executive Library, K Spur, Saughton House, Broomhouse Drive, Edinburgh, EH11 3XD for public access. Copies of non-confidential responses can be viewed by visiting the library or can be provided by post. Charges for
photocopies are made on a cost-recovery basis. To request copies by post, enquire about charges or make an appointment to view the responses, please contact the library either by telephone on 0131 244 4565 or by email at SELibrary@scotland.gsi.gov.uk.

The responses can also be viewed on the Scottish Executive’s website at http://www.scotland.gov.uk/Publications/2005/08/08145214/52151.

Members of the Executive’s Tolled Bridges Review team also held a series of meetings with key stakeholders. Invitees included local authority officials, officials of the Forth Estuary Transport Authority (FETA) and TRBJB, transport providers, lobby groups and representative organisations.

The findings from the consultation exercise have informed this Review and the conclusions emerging from it. The Executive’s analysis of the responses received to the consultation is at Appendix A to this Report.

1.4 Methodology

Phase Two 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; traffic engineering; road network management; and bridge infrastructure.

It included a public consultation document and subsequent analysis; targeted stakeholder meetings; traffic modelling and analysis; literature reviews; technical reports undertaken by consultants; and an options appraisal of management options. Some of the report is based on qualitative assessments.

Consultants undertook traffic modelling work using the Transport Model for Scotland (TMfS); details of the methodology used in this modelling are given at Appendix B. TMfS is a strategic, multi-modal transport model. It can be used to test the traffic and public transport effects of major transport policy options. Results from the modelling are indicative and focus on re-routing and changes of travel mode – so induced or removed trips that may result from changes to the network are not included. The model is able to predict the potential transfer of trips from one mode to another such as transfer from car to rail or vice versa. In addition, the model is able to forecast traffic growth arising from new developments and changes in land use as well as economic influences governing route choice, such as road pricing.
2. **A strategy for tolling**

The terms of reference for Phase Two required a consideration of 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. This chapter discusses the Executive’s past and future strategy for tolling on Scotland’s bridges, including the historical reasons for levying tolls, and the scope for using tolls or charges to address the growing problem of congestion, where that is required.

2.1 **The public perception of tolling**

Bridge and road tolls can be controversial, and Scotland’s tolled bridges are no exception to this. Supporters cite reasons to do with managing traffic demand, environmental concerns and a ‘user pays’ approach, while objectors cite issues around fairness, taxation on motorists, and that bridges should be paid for simply as part of the road network. The debate, though, is not always simply about whether tolls should be charged at all. For example, some will support the concept of tolls but argue that particular groups of vehicles or people should be exempt.

When decisions are made about whether to toll or not, or whether there should be a significant change in a tolling regime, a number of issues must be weighed up, and public opinion may be a significant factor in this consideration. An active campaign (either in support of or opposing a tolling regime) can result in regular and perhaps intense media coverage, or frequent letters to Scottish Ministers and questions in the Parliament. Organisations and campaign groups can use these avenues to get their messages out into the public domain.

However, campaigns may not reflect the majority view. A recent example was the increase in the Forth Road Bridge toll from 80p to £1 for cars and light goods vehicles. Despite the enormous numbers of bridge users, the proposed increase resulted in just two formal objections, only one of which triggered the Local Inquiry.

While there will always be some who object to paying tolls, some level of public acceptability is important for a tolling regime to work. The Executive carried out two consultations, on tackling congestion in July 1999\(^2\), and on integrated transport\(^3\) in February 2000, which informed the Transport (Scotland) Act 2001. Although the views expressed in response to those consultations concerned wider road user charging, not bridge tolls, they are pertinent to this Review and some similar comments have been received in response to the Tolled Bridges Review consultation.

Those consultations revealed that if motorists are to accept road user charges, they expect:

- that the net revenue gained will be ring-fenced for local transport purposes
- that charging revenue will result in genuinely additional expenditure on transport
- that motorists and businesses will be able to see where their money is going through transparent annual reporting and accounting arrangements

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\(^2\) Tackling Congestion: the Scottish Executive’s consultation paper on fighting traffic congestion and pollution through road user and workplace parking charges, July 1999

\(^3\) The Integrated Transport Bill: The Executive's Proposals, consultation paper, February 2000
that there is fair treatment – both in terms of those paying, and those benefiting
that public transport improvements should be in place before charging, with further improvements to follow.

The Phase Two consultation sought views on the more complex issues around tolling, rather than simply whether or not the bridges should be tolled. For example, there have been calls to end tolls at the Forth Road Bridge, but modelling from Phase One of the Review indicated that if the tolls were removed, traffic would increase in an already heavily congested area, resulting in more delays and associated economic costs. It is not always clear whether those who wish to remove the tolls from the Forth accept this as an inevitable outcome, dispute this outcome, or think there is an alternative traffic management solution.

However, a significant number of respondents to the Phase Two consultation volunteered objections to the continuation of tolling at one or more of Scotland’s three tolled bridges. About half of these objections related specifically to the Erskine Bridge tolls, and the others related to tolling more generally.

While public perception is one important factor in the success of any tolling regime, this must be weighed against the other factors explored in this chapter. Where a tolling regime does exist, it must be clear what that regime will achieve; proper communication of the objectives of the tolling regime to those paying tolls is key to building public acceptance of that regime.

Summary

Bridge and road tolls are always controversial. Any debate around tolls, whether it be to remove them, increase them, or change aspects of the tolling regime (for example exemptions, or charging different tolls at different times of the day), needs to be properly informed. People need to understand the full implications of any change – not just for themselves but for other bridge users, the local and strategic transport network, the environment and the economy.

We know, both anecdotally and from research on road pricing and bridge tolls, that a perception of fairness is very important. If people have to pay a toll, they want to know how the revenue will be spent, and how they will benefit. They also want to know there are public transport options or other alternatives. This puts a major responsibility on the tolling authority to consider how it will communicate with, inform and consult with bridge users and other interested groups.

2.2 Principles and Objectives for tolling

In this section we discuss the background to bridge tolls in Scotland, whether the historical reasons for imposing tolls remain relevant, and how tolls could help meet our four main objectives of addressing access, managing demand, ensuring efficient use of the associated transport networks and funding the ongoing maintenance requirements of the bridge.
In the *Framework for Economic Development in Scotland*⁴, Ministers have emphasised the importance of good business and transport links to secure the greatest economic return for Scotland. In responses to the consultation paper, and in other meetings and correspondence, it has been said that bridge tolls can act as a barrier to economic development. This case has been made particularly for the Erskine Bridge tolls. While those respondents and others have argued that the removal of tolls could contribute to better flow of employment opportunities and improve connectivity, which ultimately could be the catalyst to stimulate the economy on either side of the bridges, we are not aware of any commissioned research specifically examining local economic impacts of the bridge tolls, or of their removal.

### 2.2.1 Funding construction, maintenance and operational costs

Historically, the principal reason for establishing the tolling regimes at the three tolled bridges in Scotland was to pay for the construction of that piece of infrastructure, to make provision for the ongoing maintenance of each bridge, and to pay for the operational costs of the tolling regime. Without a tolling regime in place, none of the bridges would have been built, and each was built and legislated for on the understanding that it would be paid for by users. In most cases, the original legislation set a time limit to the period over which tolls could be collected, as well as setting limitations on the uses to which the revenue could be put.

The effect of this has been somewhat different at each of the bridges:

- **The Erskine Bridge** was funded from the then Scottish Office transport programme, and there has never been any outstanding debt on the Bridge as such. Tolls were to be collected to recover those costs over time, and to make provision for ongoing maintenance, administration and related costs. Toll income is credited to the Executive’s transport programme, which funds the ongoing costs of maintenance, upgrading and operations at the Bridge from year to year. The original tolling period has been extended on several occasions to help meet this expenditure, with the current period expiring in July 2006;

- Tolling income at the **Forth Road Bridge** repaid construction costs and all debts in 1993. To date, ongoing costs have been met from toll revenue and reserves. However, for 2006-07 and 2007-08, the Scottish Executive has agreed to provide grant funding of £2m per annum to support the Forth Estuary Transport Authority’s (FETA) investment programme. In addition, Ministers have committed up to £24m funding over three years to underwrite the upgrading of the A8000/M9 Spur approach route to the Bridge. The tolling period has again been extended, with the present period expiring in March 2006. FETA’s recently-approved Local Transport Strategy (LTS)⁵ sets out a significant investment plan for the period between 2006-07 and 2020-21, which amounts to some £141m, £113m of which is directly related to maintenance of the bridge;

- The capital costs of the **Tay Road Bridge** have not yet been recovered. Tay Road Bridge Joint Board (TRJB) has outstanding debts (currently around £13m) which, under

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the terms of the legislation, must be repaid by 2016. Some 50% of the tolling revenues go to repay capital and interest on the outstanding loans, with the remainder being used to meet ongoing maintenance and other costs. TRB JB’s 20 year programme to 2024 runs to some £55m. The Scottish Executive also provides grant funding to the Board to support its planned maintenance and upgrading programme. The approved capital grant for 2004-05 to 2007-08 is £2.3m per annum.

Where tolls were set up to pay for the provision of the bridge itself and those costs have not yet been met, there is a strong case for users continuing to pay tolls which contribute to the outstanding costs – this was the understanding on which the bridges were built and for which legislation was made, although significant changes to wider economic, environmental or social circumstances may require reconsideration. While those costs have already been recovered at Erskine and Forth, this remains a compelling reason for tolling at Tay. At Erskine and Forth, tolls are being used for other purposes, namely funding maintenance and operational costs and, in the case of Forth, associated transport projects. However, maintenance costs for other, non-tolled, bridges are not met by tolls. This apparent anomaly, while justified historically by the policy of the time, is now difficult for some sectors of the public to accept. Continued tolling on these bridges would, therefore, probably need stronger justification than the historical case, to show why there is good reason for these bridges to be managed in a different way from the rest of the network.

Summary

Where tolls were set up to pay for the construction of a bridge, and these costs have not yet been met, there is a strong case for users to continue to pay tolls which contribute to outstanding costs. Without a tolling regime in place, the bridge would not have been constructed; each was built on the understanding that it would be paid for by users. This may be reconsidered for specific bridges if there are significant economic, environmental or social reasons for doing otherwise.

Where the construction costs have already been met, using tolls to fund maintenance and operational costs is not in itself a compelling reason to keep the tolls unless this has been made clear from the outset – this is inconsistent with other parts of the road network and is perceived as unfair.

2.2.2 Managing traffic demand

Although the tolling regimes were not designed for this purpose when the bridges were built and opened, one of the aims now for the tolled bridges is to manage demand, where this is required. This section of the Review focuses on the relationship between demand management and bridge tolls.

We need to consider demand management when the following issues directly or indirectly relate to the use of the tolled bridge:

- congestion and its associated delays, journey unpredictability, and economic impacts – congestion indicates that a part of the network is not operating efficiently
- the Executive’s traffic stabilisation target

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6 Other issues, such as noise, severance, and impacts on landscape values, although important, were deemed to be outside the scope of this Review.
• local air quality problems stemming from traffic (Phase One found that 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)
• CO₂ emissions\(^7\).

The Executive has set an aspirational target of stabilising road traffic at 2001 levels by 2021, to limit road traffic’s impact on the environment and to help reduce congestion. To work towards this objective, the Executive supports modal shift from private car to walking, cycling and public transport, as well as seeking ways to increase vehicle occupancy rates where appropriate. The Executive is also committed to helping local transport authorities reduce traffic levels.

Many people appear to be tolerating significant levels of congestion without changing their travel behaviour\(^8\). While some individuals may be willing or compelled to accept such congestion levels, we must not overlook the consequential societal costs. As one of the aims for the tolled bridges is the efficient use of the surrounding network, we must consider how a tolling regime can be used to minimise congestion problems.

Modelling from Phase One indicated that traffic levels on the tolled bridges and their approach roads are growing at a faster rate than elsewhere on the road networks. Bridge tolling regimes, like other forms of road pricing, have the potential to be used as price signals to bridge users to more accurately reflect the true costs of their journeys (for example, wear and tear on the bridge fabric, congestion, environmental costs). If a bridge user has to pay or contribute to these costs, they can judge whether their journey choice is the most efficient. They may find that that an alternative mode, time or route is cheaper and change their journey. Alternatively, they may still choose to travel in that way and pay the full cost, perhaps sharing it with someone else through car pooling.

If designed appropriately, tolling regimes and tariffs can help to reduce congestion and/or traffic volumes by spreading the traffic more evenly over time and place, or by reducing overall traffic levels through modal shift and removing some unnecessary journeys. In each of these cases, the tolled bridge cannot be managed in isolation from the remainder of the transport network; policy decisions need to integrate all relevant modes, including car, bus, rail and ferries. The question is whether, as part of that integrated package, we should seek to use tolls to manage demand.

If we are to use tolls in this way, a balance needs to be found in designing an effective tolling regime that complements other measures to reduce congestion and promote more effective use of the bridges and the surrounding networks. For example, tolls may form part of a package aimed at reducing congestion at peak times and spreading traffic more evenly over time. Such a regime might have higher charges at peak times and lower charges outside those times. If single occupancy vehicles (SOVs) are a major contributor to the congestion problem, tolls for a multiple occupancy vehicle (MOV) might be cheaper than for a SOV. This type of tolling regime could be linked to park and ride or park and choose facilities, and/or improved public transport alternatives.

\(^7\) For discussion of CO₂ issues and the tolled bridges, please see Phase One report, Chapter 6.1.
The toll booths themselves may have an impact on traffic flows. Vehicles have to slow down or stop to pass through the toll barrier, and queues at the toll plaza can form more quickly than at the bridgeheads of an untolled bridge. But the effect of the toll booths on congestion varies between the bridges: at Forth, at peak times, the toll plaza has a higher capacity than the bridge itself – more vehicles can be processed through the toll booths each hour than can cross the bridge, so the toll plaza does not add to congestion; at Tay, the main congestion issue is the relationship between traffic waiting in Dundee city centre to cross the bridge, and other city centre traffic; and at Erskine, the toll booths can have a measurable impact on the flow of traffic.

In responses to the consultation paper, most respondents perceived tolls to be capable of playing a role in demand management, and most supported the use of tolls to encourage modal shift. A significant number of respondents felt that this should be considered on a bridge-by-bridge basis in recognition of the different circumstances at each bridge. Most respondents felt that the provision of sufficient public transport alternatives was also key to this issue.

Many respondents further recognised that differential tolling at peak times would have some degree of success; however, only a small number gave unqualified support to the idea. The main reasons for opposition were a lack of suitable public transport alternatives, and the (perceived) limited flexibility of many commuters to change their mode or time of travel. Most respondents were in favour of providing incentives for MOVs – for example, by offering discounts or prioritisation through the toll booths – but there was opposition to the use of higher or penalty charges being imposed for SOVs.

The following sections explore the issues to be considered at each of the bridges. We do not, here, seek to set precise toll levels at any of the bridges – that will be a matter for the relevant bridge authority. Rather, the following discussion seeks to determine whether those bridge authorities should seek to use tolls to help manage traffic demand, among other policy objectives.

**Erskine Bridge**

Traffic modelling undertaken during Phase One confirmed that there are no significant congestion problems on the Erskine Bridge. That modelling also indicated that Erskine Bridge has the capacity to accommodate more traffic before congestion becomes an issue. This spare capacity is important when viewed against the position at the Clyde Tunnel, the Kingston Bridge and the Clydeside Expressway / Great Western Road, all of which suffer serious congestion problems. The modelling further indicated that, given the proximity of these alternative routes to Erskine, any increase in bridge tolls would be likely to shift traffic from the Erskine Bridge onto those alternatives. Conversely, reducing or removing the tolls at the Erskine Bridge would have the opposite effect, attracting traffic to the Bridge. This would reduce congestion on the alternative routes, improving journey times and reliability for many users.

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9 Tolled Bridges Study: Phase One TMfS Model runs, MVA, September 2004. It should be noted that “Congestion on Scottish Trunk Roads 2003”, published by the Executive, shows that reductions in speed are experienced at the Erskine Bridge; these are caused not by the volume of traffic but by the toll booths

10 Tolled Bridges Study: Phase One TMfS Model runs, MVA, September 2004
Further modelling work on the implications of removing tolls at the Erskine Bridge has been carried out in Phase Two\textsuperscript{11} and confirms the findings of the Phase One modelling in more detail. The methodology for, and a fuller technical report of, the traffic modelling is set out at Appendix B; results are indicative of changes to current trips and may not reflect changes to traffic flows caused by induced or removed trips. If tolls are removed from the Erskine Bridge, there is a large increase in traffic flow in both directions across the bridge itself, which may result in some increase in delay on or around the bridge, at either bridgehead. However, traffic modelling to 2011 indicates that the bridge has capacity to deal with those increased flows.

The “new” traffic is predominantly re-routed from the Clyde Tunnel, with a marginal traffic effect on the Kingston Bridge\textsuperscript{12}. Congestion through the Clyde Tunnel and on its approaches is currently a major concern. The reduced peak hour traffic flows in the modelling indicate that traffic would flow freely through the tunnel throughout the day in this scenario, addressing the existing concerns. The modelling also indicates that removal of the tolls on the Erskine Bridge will eliminate almost all long distance traffic use of the Clyde Tunnel.

The modelling further indicates that traffic congestion would be reduced at most points along the Clydeside Expressway. If tolls are removed, a higher percentage of traffic using the Erskine Bridge terminates in Glasgow – this means that traffic swaps its route choice from the north bank corridor of the Clyde (the A82, A814 etc) to the south bank corridor (the M8 / A8 etc). This provides a degree of congestion relief around the north bank corridor. It does, however, increase traffic flows on the south bank corridor, and some further micro-simulation work, together with traffic monitoring along this part of the network in the months following any removal of tolls, would be necessary to understand the re-routing effect on the main trunk road flow to determine whether further tactical traffic management measures – e.g. ramp metering of particular junctions – would be necessary.

Glasgow City Council has declared an Air Quality Management Area (AQMA) covering the city centre, based on transport related NO\textsubscript{x} emissions, and has produced an action plan outlining how it intends to reduce NO\textsubscript{x} levels. Glasgow’s Director of Environmental Protection Services has recently reported that the 2010 annual mean objectives for PM\textsubscript{10} and NO\textsubscript{2} are unlikely to be met at a number of sites in the city including Charing Cross, North Street, Dumbarton Road and Crow Road. The reductions in traffic using these roads predicted as a result of removal of tolls would have a beneficial impact on air quality at those sites. There would be a reduction in air quality at the Bridge itself and the area surrounding the bridgeheads but this is not substantial.

The congestion benefits elsewhere in Glasgow if the tolls are removed would require to be “locked in” to ensure that the “space” created on the roads is not filled with new traffic. Glasgow City Council is working on a package of measures that would assist in locking in the benefits, including the progressive introduction of parking controls. This should be accompanied by improvements in public transport. The additional capacity created on the city’s roads by the diversion of through traffic over the Erskine Bridge would facilitate the introduction of additional bus priority measures. Glasgow City Council is also currently embarking on a major review of direction signing in the light of substantial motorway

\textsuperscript{11} Tolled Bridges Study: Phase Two – Erskine Bridge, MVA, July 2005
\textsuperscript{12} Tolled Bridges Study: Phase Two – Erskine Bridge, MVA, July 2005 – this indicates that flows on the Kingston Bridge increase and decrease at different times of the day, but no increase is more than 100 cars per hour
construction and the introduction of Quality Bus Corridors. A proposed review and update of traffic management in Glasgow City Centre is expected to further reduce the opportunities for through traffic movements, which would also lock in the reductions in Heavy Goods Vehicle (HGV) traffic predicted for the city centre if tolls are removed.

Forth Road Bridge

The Forth Road Bridge runs at, or near, capacity (approximately 3,500 – 3,600 vehicles per hour) between 6am and 9am on the southbound carriageway, and between 5pm and 6.30pm on the northbound carriageway on most weekdays (for longer on Friday afternoons). As a result, any additional growth in commuter traffic will lead to peak time spreading. This is already the case as both AM and PM peaks are perceived to be starting earlier and finishing later year on year. Traffic modelling indicates that the existing congestion problems on the Forth would be exacerbated without tolls, whereas increased tolls could help to ease congestion problems. No one during the consultation process identified any practical, cost effective method of reducing the congestion without a tolling regime in place.

Both FETA, through its LTS, and South East Scotland Transport Partnership (SESTRAN), through its Queensferry Cross Forth Corridor Study, have recognised the role of tolls in tackling demand issues. FETA is moving towards implementing a Road User Charging (RUC) scheme, to replace the existing tolling regime, under the Transport (Scotland) Act 2001. The Act provides the framework for local traffic authorities to bring forward local charging schemes to tackle congestion, noise and emission problems. FETA submitted to Ministers in November an application for "Approval in Principle" of its proposed road user charging scheme and associated package of transport improvements; given the timing of this Review, Ministers’ decisions on the Application are not included here. The proposed charges differentiate by time of day and occupancy of vehicle to address congestion issues on the Bridge; and target HGV's for the wear and tear that they cause to the Bridge. Proposed charges include an increase to £4 for single occupancy vehicles at peak times with 50% discounts for multiple occupancy. HGV charges would increase to reflect damage to bridge.

Congestion problems on the Bridge are exacerbated by the high volume of SOV traffic, which can exceed 70% of all traffic at peak times. Accordingly, a strategy which encourages a shift from SOV traffic to MOV journeys on the bridge and/or increases public transport usage, particularly at peak periods, seems the most likely solution to address the delays and congestion experienced by Forth Road Bridge users. Such strategies are already used elsewhere in the world and include MOV lanes, or differential tolls which offer financial incentives for increased car occupancy.

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14 FETA is examining as part of its Local Transport Strategy (Forth Estuary Transport Authority Local Transport Strategy, April 2005. [http://www.feta.gov.uk/webpages/pdfs/LTS62674%20LTS.pdf](http://www.feta.gov.uk/webpages/pdfs/LTS62674%20LTS.pdf)) the possibility of increasing cross-Forth capacity through the construction of a new multi-modal crossing at Queensferry. This is beyond the scope of this Review.
15 Forth Estuary Transport Authority Local Transport Strategy, April 2005

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A study was carried out on behalf of the Executive into MOV solutions used elsewhere in the world\(^{18}\) and related research and analysis. Most examples come from the USA or Canada. Bridges with a traffic demand that is similar to the Forth Road Bridge have either two lanes in each direction with an additional reversible median MOV lane, or three lanes in each direction one of which is dedicated solely to MOVs. The Forth Road Bridge is limited to two lanes in each direction, with no hard shoulder.

To develop a MOV facility on the Forth Road Bridge, either (at least) one additional lane would have to be constructed as a median lane, or consideration given to running vehicles on the side access routes. However, the opening of a fifth lane on the Forth Road Bridge would not be a cost effective solution, nor would it be technically viable as the bridge structure could not support the additional loading\(^{19}\). Although one of the existing general purpose lanes in each direction could be turned into a MOV lane, traffic modelling undertaken during Phase One indicates that even with a 50% increase in MOVs using a dedicated lane, the diversion of SOV traffic to the (single) all-purpose lane would generate queues in excess of 7 km. Given this, MOV lanes on the bridge itself are not believed to be a practical option for Forth. However, SESTRAN’s Integrated Transport Study of the Queensferry – Cross Forth Corridor has recommended a new southbound MOV lane between Halbeath and the northern bridgehead at an estimated cost of £12.6m, although it is not yet clear how this would be regulated.

High occupancy toll (HOT) lanes combine MOV and pricing strategies by allowing vehicles that do not meet passenger occupancy requirements to gain access to MOV lanes by paying a toll. By using variable pricing and occupancy restrictions to manage the number of vehicles travelling on HOT and other lanes, such schemes aim to tackle congestion and eliminate the “unused lane syndrome” normally associated with MOV schemes. The variable, real time lane-pricing characteristic of HOT schemes relies on electronic toll collection and clear and early display of variable message signs on the approach to the toll collection points.

HOT lane schemes have been developed in the USA, but there are no HOT lanes currently operating on the UK road network. According to a recent report published by the US Department of Transportation, the HOT lane concept is relatively new and has not yet been widely deployed, but they are most effective for high density corridors, newly created MOV facilities, congested MOV facilities and under utilised facilities. The report concludes that while it is possible to allow limited scale HOT lane use on single-lane MOV facilities, it is preferable to implement HOT operations on facilities providing more than one MOV travel lane per direction.

**Tay Road Bridge**

Congestion levels at the Tay Road Bridge are not as severe as those at the Forth Road Bridge. Modelling in Phase One indicated that, in general, congestion occurs over relatively short peak time commuter periods, particularly in the early evening. Much of this congestion is a result of the relationship between traffic queuing to access the toll booths and other cross-Dundee traffic which is not using the bridge. As a consequence, Dundee City Council is in the process of declaring an AQMA based on transport related NO\(_2\) emissions, and will also produce an action plan outlining how it intends to reduce NO\(_2\) levels.

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\(^{18}\) Overview of Measures to Increase Car Occupancy over the Forth Road Bridge, Scott Wilson, August 2005

\(^{19}\) Forth Road Bridge Short Term Measures Study, July 1992
Like Forth, modelling indicates that the existing congestion problems on Tay would be exacerbated without tolls, and that increased tolls could help to ease congestion problems. A bigger issue at Tay is the relationship between bridge traffic and other traffic in Dundee city centre; vehicles queuing to cross the bridge cause delays for cross-Dundee traffic which is not using the bridge.

The congestion and air quality problems are not solely related to bridge traffic. However, traffic modelling from Phase One, followed up in Phase Two, indicates that removing the tolls from the Tay Road Bridge would cause a significant increase in delays at the bridge and in Dundee city centre; it would also cause a corresponding increase in emissions and air quality problems. No one during the consultation process identified any practical cost effective method of reducing the congestion without a tolling regime in place.

Modelling also indicates that the location of the toll plaza – at the north bridgehead in Dundee – is a contributing factor to some of those problems. Although removing tolls would make congestion and air quality problems worse than they are currently, modelling indicates that relocation of the toll plaza away from the Dundee side of the bridge could bring further improvements.

An upgrade of the existing tolling facilities is required, due to aging equipment and changes to the northern bridgehead arising from the Dundee Central Waterfront Development. TRBJB commissioned Hyder Consulting to examine various options regarding the short, medium and long-term strategy for tolling (and toll equipment replacement) at the Tay Road Bridge. In September 2005, the Board endorsed a report from Hyder Consulting that recommended a new toll plaza in Fife with northbound tolling as the preferred long-term option for the Bridge.

Costs would be significant and the project would involve changes to both the local and trunk road networks. However, Fife side tolling would allow an expansion of the toll plaza, with dedicated lanes for public service and multiple occupancy vehicles and/or electronic tolling lanes. Proposed wider improvements might include a new park and ride site aimed at reducing car journeys into the city. An alternative, cheaper option, involving refurbishment of the existing plaza and tolling equipment, could add a fourth toll lane at the Dundee end of the Bridge, but does not offer the space or flexibility for dedicated lanes, and would not entirely remove the potential for queuing into the city centre at evening peak times.

Summary

Tolls can play an important role in helping the Scottish Ministers meet the wider objectives of managing traffic patterns and promoting more efficient use of the road and other transport networks, as part of an integrated approach involving all relevant modes, including car, bus, rail and ferries. Modelling from Phase One indicated that traffic levels on the tolled bridges and their approach roads are growing at a faster rate than elsewhere on the road networks. Where congestion is an issue, well designed tolling regimes can be implemented which encourage a shift from single occupancy journeys to public transport or multiple occupancy car trips. Tolling regimes can also encourage travellers to consider whether their journey is necessary, or can be made in other ways or at different times. Visible and appropriate transport improvements should be in place before toll increases are made to address demand.
At Erskine, there is currently no congestion problem on the Bridge itself, and tolling cannot be justified on the basis of demand management. There are congestion problems elsewhere in Glasgow, and Glasgow City Council has declared an Air Quality Management Area (AQMA). Modelling has shown that congestion elsewhere, towards the centre of Glasgow, can be eased, and air quality problems improved, if tolls at Erskine are removed. These benefits would have to be “locked in” and there may be some localised increases in traffic that would need to be managed.

At Forth, there are severe congestion problems on the Bridge and no solution has been identified for those problems which does not include tolling as a critical element. Modelling indicates that congestion issues are improved at Forth if higher tolls are charged. Actual toll levels are a matter for the bridge authority to determine in the first instance, but Scottish Ministers make the final decision.

At Tay, there are some congestion problems at peak times, and Dundee is declaring an AQMA. Bridge traffic contributes to the air quality problems. As at the Forth Road Bridge, no solution has been identified for those problems which does not include tolling as a critical element. Modelling indicates that congestion issues are improved at Tay if higher tolls are charged, but Scottish Ministers make the final decision. TRJB’s investigations indicate that a move to south-side tolling in the long term would allow further improvements e.g. in provision for public service and multiple occupancy vehicles.

**2.2.3 Investing in transport networks**

In this section we discuss how, and to what extent, toll revenues can and should be used to invest in transport infrastructure and networks.

The costs of constructing major estuarial bridges are considerable – for example, the new bridge at Kincardine is currently estimated to cost around £110m. But the investment needed to maintain and operate those bridges, and to upgrade them as necessary, for example, to accommodate heavier traffic, is also very substantial.

However, more may be collected in tolls in a given period than is needed for the upkeep of the bridge because maintenance costs vary from year to year depending on what work is required. Importantly, it may be desirable, for demand management purposes, to set a tolling regime at levels which are higher than would otherwise be necessary, simply to maintain and operate the bridge. While maintenance should be the priority, decisions need to be made on how and where any additional revenue should be spent. Research\(^\text{20}\) and consultation\(^\text{21, 22}\) on road user charging schemes shows that tolling regimes are more likely to be acceptable if revenues are seen to be ring fenced for local transport purposes.

**Erskine Bridge**

Schedule 2 to the Erskine Bridge Tolls Act 1968 requires that total tolls collected should not exceed the total sum of the capital costs (with interest) of the bridge, the ongoing costs of

\(^{20}\) For example, see Centre for Transport and Society (2004) Evidence-Base Review – Attitudes to Road Pricing. Report for the Department for Transport.

\(^{21}\) Tackling Congestion: the Scottish Executive’s consultation paper on fighting traffic congestion and pollution through road user and workplace parking charges, July 1999

\(^{22}\) The Integrated Transport Bill: The Executive’s Proposals consultation paper, February 2000
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 the cap provided by Schedule 2. While surpluses have been registered in most years, it is currently the Executive’s position that expenditure relative to tolls should be spread over the lifetime of the Bridge and contribute to the future renewal of the bridge. This expenditure will increase as the bridge gets older.

Toll revenues from the Erskine Bridge are credited to the Scottish Executive’s roads programme, which in turn funds the costs of maintaining and operating the Bridge. Many of those who have criticised the collection of tolls at Erskine, including a number responding to the Phase Two consultation, have specifically stated that any “excess” tolls collected should be used to invest in local transport provision, for example by supporting public transport options in the area. However, the legislation for Erskine Bridge does not allow tolling “surpluses” to be spent in this way.

**Forth Road Bridge**

The Forth Estuary Transport Authority Order 2002 states that the first call on tolling revenue at the Bridge must go to meet the costs of maintaining and operating the Bridge. Beyond this, FETA has broad powers to invest in wider transport improvements, aimed at reducing congestion on and around the Bridge. In the three years of its existence, FETA has already used these powers on a range of projects – including contributing to the costs of the Park and Ride facility at Ferry Toll, supporting road, rail and ferry studies around the estuary, and in meeting some of the costs of improving the A8000/M9 Spur – work which is now underway.

FETA’s recently approved local transport strategy sets out a significant investment plan for the period between 2006-07 and 2020-21, which amounts to some £141m. While approximately £113m of this is to be directed towards the costs of the Bridge itself, the programme includes a number of further initiatives to promote more efficient use of the surrounding road and other transport networks, including the A8000 project. These extra funds would only be available if FETA raised the current level of tolls or implemented a road user charge higher than the current toll levels.

**Tay Road Bridge**

Some 50% of toll revenues at the Tay Road Bridge go towards meeting capital and interest repayments on outstanding loans. The balance is not sufficient to meet the ongoing costs of the Bridge, and the Executive provides grant funding to the Board annually to fill this funding gap. Given this, the issue of how revenues might be invested more widely is currently a moot point. However, operational issues, such as the congestion problems at the toll booths and into Dundee city centre, mean that the TRBIB is increasingly concerned with how it can work with other stakeholders, such as Dundee City Council, to address wider transport issues. In addition, the redevelopment and regeneration of the city’s waterfront area will directly affect the north end of the Bridge, and the Board is working closely with stakeholders in that project. Under the current legislation governing tolling at Tay, the Board has no responsibility for wider transport issues or investment, beyond the immediate needs of the Bridge, and cannot use tolling income to help fund measures to improve the efficiency of the networks.
Summary

Where a tolling regime is required to address congestion and traffic management objectives, maintenance and operational costs of the bridge should be the first priority for expenditure. Where toll revenues exceed operating and programmed maintenance and operational costs (e.g., because the tariffs are being used to influence demand), there is a strong case for reinvesting in wider improvements to the surrounding transport network, where possible. This is to increase the efficiency of the network (and, as discussed at section 2.1, to promote public acceptability of the tolling regime).

2.3 Tolls or Road User Charging?

This section compares and contrasts bridge tolls and road user charges (RUC). As stated previously, the existing tolling regimes on the bridges were put in place in the 1960’s and 70’s, and were designed to recover construction and operating costs at the time. However, traffic modelling indicates that tolls can also act as demand management mechanisms where congestion and/or traffic volumes pose problems on the network.

Scottish RUC legislation was designed with the policy intention of reducing congestion, noise and emissions. Additionally, the pressures brought about by increasing traffic levels, and the associated impacts on the environment and the economy, have opened up a wide ranging general debate on road pricing in recent years. For example, London now has an urban congestion charging scheme, and the Department for Transport led a study on the feasibility of a national road pricing scheme in 200423. FETA’s Local Transport Strategy (LTS), and more recently its Application in Principle for a road user charge, sets out the Authority’s proposals to replace the existing tolling regime at the Forth Road Bridge with a RUC scheme. However, a number of responses to the Phase Two consultation questioned why RUC should be needed when there is already a tolling regime in place.

The key issues are what the difference is between bridge tolls and RUC, and whether there are situations where one is preferable to the other. The existing bridge tolling regimes are set out in legislation specific to each bridge, both in the primary legislation and in specific tolling orders. Although the primary legislation in each case allows the tolling orders to be revised by the Scottish Ministers, it attaches conditions and requirements for doing this. This means that, under the current legislation, the tolling authority does not have the power necessary to change the level of tolls to reflect changing circumstances or inflationary trends. Nor can it change the nature of the tolling regime to reflect policy shifts without reference to either the Scottish Executive or, in the case of Erskine Bridge, the Scottish Parliament.

Scottish local RUC schemes are governed by the Transport (Scotland) Act 2001 and associated regulations, which provide a consistent legislative framework (though this does not mean that the actual amount charged would be the same in different schemes). A charging authority would develop a charging order, and submit the charging order to Scottish Ministers for confirmation before the charging scheme could be implemented. The Scottish Parliament has no formal role in the confirmation of charging orders.

The first main difference is that there is a single legislative framework in place for all RUC schemes. The tolling regimes do not have a consistent framework within which to operate –

23 Feasibility Study of Road Pricing in the UK, Department for Transport, July 2004
each was set up under specific legislation which is not consistent with the legislation for the other bridges.

The next comparison between tolling and charging is flexibility of the regimes. Existing tolling legislation allows toll orders to impose charges according to “different circumstances”, but this is not flexible enough to meet present day challenges such as tolling regimes which promote efficient use of the networks through sophisticated differential tolling, for example by different days, different times of day, distance travelled, vehicle occupancy etc. Furthermore, the 2001 Act allows for a charging order to specify when inflationary increases in tolls may take place, something which is not provided for in the current bridge tolling legislation.

From this perspective, RUC schemes are more flexible than current tolling structures. The powers set out in the Transport (Scotland) Act 2001 allow for greater flexibility on differential charging without the need for changing the primary legislation. In addition to this flexibility, there comes with it the consistency of a single legislative regime.

With the growing need to manage demand on our roads and bridges, the growing national debate about road pricing generally, and moves towards ensuring the interoperability of electronic charging systems across Europe (discussed at section 4.5), greater operational flexibility is needed. This could perhaps be achieved more readily by moving to RUC than by amending the separate legislation for each of the bridges.

Further, RUC schemes must, directly or indirectly, facilitate the achievement of objectives in the charging authority’s local transport strategy (LTS). This gives the charging regime a more strategic purpose than tolls. As the LTS evolves to reflect local circumstances, so can the charging regime. For bridge authorities using RUC schemes, this means that income could be invested in schemes beyond the immediate confines of the bridge, and spending of that income would not be limited to the charging authority. Indeed, the revenue could be given to, for example, a neighbouring authority where that could assist in meeting the LTS’s objectives. FETA already has similar powers in relation to its tolling regime, but has recognised the greater flexibility the RUC approach can bring when managing the bridge in its strategic context.

Against this, the RUC legislation was designed to facilitate local authority schemes – although the RUC provisions could be applied to a single road e.g. a tolled bridge, they were not designed for this purpose. Each of the bridges is a unique structure, with a unique set of circumstances and traffic scenarios. For that reason, it may be that maintaining separate legislation for each bridge is appropriate – particularly if that legislation can be adapted to take advantage of some of the flexibility and other benefits foreseen for RUC in the 2001 Act.

Summary

Tolls are based on specific legislation for each of the bridges. That legislation provides for a tolling regime which was relevant at a particular time, and was designed to provide an income stream to cover the costs of construction, and ongoing maintenance and operational costs, for each of the bridges individually. While tolling legislation could be amended to give the tolling authority greater flexibility, changes to the purpose of tolling for any of the bridges requires primary legislation.
Alternatively, the road user charging (RUC) provisions in the Transport (Scotland) Act 2001 are the result of wide-ranging consultation on the use of road pricing techniques for demand management purposes; are more flexible than the existing tolling provisions; and have a strategic purpose as part of a local transport strategy. Those provisions currently apply only to local roads; achieving those benefits on bridges which are trunk roads would require primary legislation.
3. **Managing the Tolled Bridges**

This chapter considers different organisational structures for managing the operation and maintenance of the tolled bridges, and supporting wider Scottish Executive objectives. It takes into account the new transport landscape in Scotland, with the advent of Transport Scotland, and the statutory Regional Transport Partnerships (RTPs).

3.1 **Current arrangements**

Separate legislation governs the management and operation of each of Scotland’s tolled bridges. Each bridge is managed by a different body which has a unique set of responsibilities, powers and pressures. While the tolling regimes share a number of common aims and objectives, there are significant differences, for example in tariffs, the legal framework and the financial position of each bridge.

Chapter 3 of the Phase One Report set out the current arrangements at each bridge in detail. These are summarised below:

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>ERSKINE</th>
<th>FORTH</th>
<th>TAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership of Structure</td>
<td>Scottish Executive (SE)</td>
<td>Forth Estuary Transport Authority (FETA)</td>
<td>Tay Road Bridge Joint Board (TRBJB)</td>
</tr>
<tr>
<td>Management Authority</td>
<td>SE</td>
<td>FETA</td>
<td>TRBJB</td>
</tr>
<tr>
<td>Maintenance Responsibility</td>
<td>SE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>FETA</td>
<td>TRBJB</td>
</tr>
<tr>
<td>Toll Collection</td>
<td>SE&lt;sup&gt;2&lt;/sup&gt;</td>
<td>FETA</td>
<td>TRBJB</td>
</tr>
<tr>
<td>Key Legislation</td>
<td>Erskine Bridge Tolls Act 1968</td>
<td>Transport (Scotland) Act 2001</td>
<td>Tay Road Bridge Order Confirmation Act 1991</td>
</tr>
<tr>
<td>Part of Trunk Road Network?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<sup>1</sup> Contracted to AMEY Infrastructure Services Ltd  
<sup>2</sup> Contracted to APCOA Parking (UK) Ltd

As a trunk road, the Erskine Bridge is the responsibility of the Scottish Executive and is the only tolled bridge run directly by the Executive. Bridge operation and maintenance is presently contracted out to AMEY Infrastructure Services Ltd, as part of its term management and maintenance contract for trunk roads in South West Scotland. Toll collection is presently contracted to APCOA Parking (UK) Ltd.

FETA is a joint board comprising the constituent local authorities of City of Edinburgh (four members), Fife (four members), Perth and Kinross (one member) and West Lothian (one member) Councils. Approximately 100 permanent and temporary staff are employed by FETA. 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.

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 Dundee City (six members), Fife (five members), and Angus (one member) Councils. Approximately 50 staff are employed by TRBJB. 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.
3.2 The emerging transport landscape in Scotland

The development of the new national transport agency, Transport Scotland, is a key Partnership Agreement commitment. It was established at the start of 2006 and, together with new RTPs, forms part of a new approach to delivering transport services and projects across Scotland.

3.2.1 Transport Scotland

Transport Scotland is responsible for trunk roads, rail, the delivery of major public transport infrastructure projects, the delivery of National Concessionary Travel Schemes, and integrated ticketing and travel information.

The consultation paper sought views on the possibility of one or more of the tolled bridges being managed by Transport Scotland. This would recognise their strategic importance, offer a joined up policy and management approach, and could address wider integration issues, for example between the road and rail networks. One of the main policy objectives for managing the tolled bridges is the efficient use of the surrounding transport network. Agency management of the bridges could help to promote that through its links to local authorities, RTPs and public transport providers.

Transport Scotland management of the Forth and Tay Road Bridges would require a decision to be taken on whether to retain the local road status of these bridges or to trunk them. This raises wider questions on the issue of charging for trunk road journeys, and potentially cuts across the growing debate about national road pricing. As set out in Chapter 2, RUC schemes appear to offer greater scope to manage congestion and traffic demand than the existing tolling structures. The current legislation for RUC allows schemes to be introduced only by a local traffic authority. Under current legislation, it would not therefore be possible to replace tolls with RUC on a bridge managed by Transport Scotland.

Given Transport Scotland’s responsibility for strategic transport issues, even where the Agency is not directly responsible for one of the bridges, strong links between Transport Scotland and other bridge authorities will be necessary.

The detailed implications of management of the individual bridges by Transport Scotland are discussed at section 3.5.

3.2.2 Regional Transport Partnerships

The Transport (Scotland) Act 2005 places a duty on the Scottish Ministers to establish RTPs to plan the strategic delivery of regional transport in Scotland. Most RTPs will consist of several local authorities and other key players in the region. The 2005 Act makes provision for the future transfer of functions to RTPs and sets out an illustrative list of functions that could be transferred, which includes managing tolled bridges. However, the functions and responsibilities of individual RTPs will reflect the requirements of each region’s transport strategy, due to be completed by April 2007. Over time, RTPs will be able to take on a more operational role in the delivery of projects and the management of infrastructure and services in their region, which could include taking on functions from local authorities or the Scottish Executive. For this reason, the consultation paper sought views on whether we should transfer some or all of the powers and functions of the current bridge authorities to the RTPs.
The tolled bridges are not isolated structures, and the key objectives of this Review include demand management where this is required, and the more efficient use of the transport networks. One of the main advantages of the RTP management model is that RTPs will already have an interest in sustainable transport and in demand management within their area. RTPs will be able to take on powers to promote and implement RUC schemes on their own networks to manage congestion, noise and emissions. RTP management of the bridges would, therefore, allow the existing tolling regimes to be replaced with RUC, where demand management is necessary.

There are, however, disadvantages to pursuing the RTP option at this stage. The partnerships will be new organisations, with a number of pressing priorities from the outset, most notably the duty to draw up a statutory regional transport strategy (RTS). Managing major infrastructure initially will not be a core activity for most of the RTPs, although the West of Scotland Transport Partnership will be responsible for the Glasgow subway (employing around 700 people). There is a danger that imposing a bridge management function at such an early stage could distract the partnerships from other key tasks.

Tolled bridges are particularly complicated pieces of infrastructure, and the maintenance of them is complex and costly. If a RTP were responsible for the maintenance of the bridge this would require it either to directly employ engineers and other staff for the specific purpose of maintaining the bridge, or to contract out for the required skills and expertise to maintain the bridge on its behalf. In addition, management, toll collection and other staff would have to be employed. However, it is not currently envisaged that the RTPs which are relevant to Forth and Tay will employ large numbers of operational staff, at least in the early stages. In addition, funding structures and long-term spending plans may take some time to establish. Current and future spending pressures on the toll bridges could mean that the RTPs would have to find significant resources to meet these commitments, possibly diverting resources from their other objectives.

The tolled bridges play a significant role in regional transport and the RTPs will need to be mindful of the effects of tolls on the surrounding transport network. Guidance to RTPs on drawing up their RTSSs will encourage them to look at all transport in the region, irrespective of whether it is provided by local authorities, the Scottish Executive, Transport Scotland, or other public bodies, including bridge authorities – even when the RTP itself is not the bridge authority. Strategies could make recommendations to bridge authorities on, for example, toll regimes. This would not be binding, but bridge authorities would be expected to consider it. RTSSs will be informed by full public consultation. Local authorities and health boards will be statutory consultees, but other transport bodies will have the opportunity to input to the development of the strategies.

Summary

Transport Scotland and the new RTPs form part of a new approach to delivering transport in Scotland. Even if they are not directly responsible for any of the bridges, Transport Scotland and the relevant RTPs will be key partners of bridge authorities, given their responsibility for strategic and regional transport issues. The detailed implications of management of each of the bridges by Transport Scotland or RTPs are discussed at section 3.5.
3.3 Options Appraisal

A detailed options appraisal was undertaken to assess the applicability of various management options to each of the bridges. The full text of the tables used to carry out the options appraisal is available on request.

The Phase Two consultation paper posed questions on the advantages and disadvantages of new and existing bridge management models. It also asked for suggestions on other possible management structures, or on changes in responsibilities and powers which would enhance management effectiveness.

The consultation paper set out five management options for each of the three bridges:

- The new national transport agency – Transport Scotland
- The regional management option – RTPs
- The FETA model – the current arrangement at Forth – a Joint Board model but with broader powers than at Tay
- The TRBJB model – the current arrangement at Tay
- A new single Scottish Tolled Bridges Authority.

Two further options emerged from the responses to the consultation exercise:

- a single, East coast bridge management body for Forth and Tay
- management by private enterprise.

We have also assessed the implications of removing the tolls at each of the bridges. The consultation paper did not specifically seek views on removing tolls, as our aim has been to gather stakeholders’ views on the implications of potential changes, rather than to establish their desire for change. Nevertheless, the option of ending tolls at each bridge has been fully considered. Of the 63 written responses to the consultation, around a third of respondents qualified their responses with their opinion that tolls should be removed. More than half of those comments related specifically to Erskine.

3.3.1 Appraisal methodology

The management options listed above have been subject to a qualitative appraisal process. Each of the eight models has been examined against our four key objectives for the tolled bridges:

- managing traffic demand, where and if this is required
- efficient use of the surrounding road and public transport networks
- funding ongoing maintenance
- addressing access – linking people to jobs, businesses to markets, communities to services.

We have also examined the practicalities of achieving these objectives under each option, by appraising the achievability of each option against a range of criteria:

- legislative/legal issues
- a broad consideration of the costs and savings of implementation
Our aim has been to arrive at a qualitative assessment of how, and to what extent, each model for each bridge could help the Executive deliver its objectives for the tolled bridges and the practicalities of implementing the model.

Our evaluation of each option has been informed by written responses to the consultation paper, the feedback we received in meetings with key stakeholders, and by work done within the Executive.

Although 24 separate assessments were theoretically required (eight options x three bridges), it became clear early in the process that some of these assessments could be combined, with the result that only 18 options are assessed. This chapter presents the key findings of the appraisal.

3.4 Discounted Options

In the course of the options appraisal, three options were considered not to meet the criteria set out above for achieving our aims for the tolled bridges. They are discussed briefly below.

3.4.1 Private enterprise

This option was proposed in responses to the consultation paper. It would involve passing the management and operation of the bridge to a private sector organisation on a long term PFI/PPP contract basis, the terms of which could include provision for maintenance and operational investment, setting tolling tariffs and keeping the tolling income. In terms of financing and operating it could mirror to some extent the arrangement which formerly applied at the Skye Bridge. It is distinct from the present operations at the Erskine Bridge, where management responsibility for the Bridge remains with the Scottish Executive, but maintenance and toll collection operations are contracted out separately, and tolling revenues are returned to the Scottish Executive.

Transfer of one or more of the bridges to the private sector under such an arrangement could provide advantages in terms of the long term financing of maintenance and upgrading work. PPP operators would be able to plan the programme across the lifetime of the agreement, borrowing as necessary and recovering costs through tolls. The need for short term borrowing by the existing authorities, or grants from the Scottish Executive would therefore be minimised or eliminated, depending on the terms of the agreement struck.

While there is experience of such contracts in respect of the design, build and operation of new structures, there is little experience of operators taking responsibility for existing bridge structures24. Each of the Scottish tolled bridges is around 40 years old and each requires significant investment over the next few years - for example, planned maintenance for the Forth Road Bridge amounts to some £113m in the next 15 years. Associated with this is the potential for transferring the “availability risk” to operators. Under such an agreement,

24 The Severn and Dartford crossings saw a new concessionaire take charge of existing infrastructure, but in both those cases the purpose of this was to facilitate the construction of an extra crossing.
operators may be penalised for lane or bridge closures over and above an agreed level in a given period. Potential operators may be wary of accepting the financial risks associated with such works, along with the possibility of future works arising, without continuing financial guarantees from the Executive. This transfer of risks from the public to the private sector is central to the PPP process.

Operators would also be required to take the “volume risk” associated with each bridge - i.e. financing, and therefore toll levels, would be set on the basis of traffic estimates over the contract period. There is potential tension in agreements relating to the bridges, where the operator would seek to recover enough in tolling revenues to meet the costs of maintaining and operating the bridge, as well as returning a profit to shareholders, while the Scottish Ministers could look to bridge operators to invest in and implement measures to reduce congestion, manage traffic demand and improve the efficiency of the surrounding transport networks.

Ministers may also seek to transfer an element of legislative risk to toll bridge operators. Such risks may include future changes in vehicle types or weights, or changes in motoring taxation, fuel duties or wider road pricing. In section 2.3 we have concluded that bridge operators may wish to consider moving from the existing tolling structures towards a road user charging scheme to better address congestion and demand management issues where this is required. Under the present legislation, a RUC scheme can only be introduced by a local traffic authority, and there are no plans to allow private enterprise to operate such schemes.

A more detailed examination of this option is outwith the scope of the Phase Two Review, and has not been undertaken at this stage. Any such examination is likely to be a lengthy process, involving significant technical and financial analysis work and market testing. This option would involve considerable primary and secondary legislative change, involving the winding up of the existing management boards at the Forth and Tay Road Bridges, and transferring responsibility for these two bridges, as well as the Erskine Bridge to the new operator or operators.

In terms of costs to the bridge user, tolls would be higher than the equivalent charge by the present operators. This follows a European Court of Justice decision that toll operations by private sector operators must charge VAT on the tolls levied. There is also a significant issue about the public acceptability of pursuing this option, and it could be negatively received by the public, and the surrounding local authorities in particular.

There is a distinction between tolling of the existing bridges, and requirements for new infrastructure, where e.g. a new crossing is proposed with significant investment requirements, in which case very different considerations would be applied. This Review has considered only the existing bridges, not the involvement of private enterprise in any future developments.

Summary

An initial assessment indicates that passing the management and operation of these key pieces of infrastructure to private enterprise could provide benefits in terms of financial savings and security for the Scottish Ministers over the course of a long term agreement. However, the risks associated with the maintenance and operation of the bridges, and the fact that there is little experience of operating such structures, could mean that the terms of such
an agreement would offer no advantages over the other management models considered as part of this Review. In particular, there are potential tensions between the desire of an operator to ensure that the operation is profitable, and the need to strike a balance between the key aims for the existing tolled bridges. There are different considerations where new infrastructure is required – e.g. where the overriding aim is the provision of a new crossing.

3.4.2 Joint Forth and Tay Management Body

Another management option proposed in response to the consultation paper was to combine the management and operations of the two east coast bridges, Forth and Tay. This model offers scope for potential efficiency savings in terms of reduced administrative overheads, joint procurement procedures, shared back office functions, technology trialling etc. It would provide a single management structure covering both bridges, formed on the lines of the current FETA model, allowing the new authority the scope to collect tolls, manage traffic demand and reinvest revenues to improve the efficiency of the local transport networks. Toll revenues under this model would form a single income stream for expenditure on both bridges. The day to day arrangements for managing and operating the bridges would mean, however, that local management and staff would still be required to be situated at each bridge.

There are, however, significant differences between the two bridges. These include the levels, times and nature of congestion experienced, the ratio of strategic to local traffic, demand management issues, and investment decisions at each bridge. The bridges are also structurally different, so possible efficiency gains from pooling engineering resources could be limited. The financial positions are also different. Tay Road Bridge carries outstanding loan debt of some £13m. Assuming a single income stream from both bridges, toll payers at Forth may find it unacceptable that tolls paid at that Bridge would go to pay off debt at the Tay Bridge. While this could be remedied by using a ring fencing mechanism for revenues and spending at each bridge, the administrative and financial benefits of this arrangement may be reduced.

A joint Forth and Tay management body would also involve a number of local authorities in the management and operation of a tolled bridge in which they have no direct interest e.g. Angus Council in Forth Road Bridge matters, and West Lothian Council in Tay Road Bridge matters. This could be seen as particularly inappropriate for the Tay Road Bridge as the majority of bridge traffic (around 65%) is of a local nature.

Against this, it is also worth emphasising that the managers for both bridges already share information and experience on a regular basis, both directly with each other, and through national and international technical and bridge management organisations.

Summary

The appraisal indicates that though there are some rationalisation gains under this model, mainly from sharing back office functions, these would be offset by other pressures. These include the cross-over of local authorities with interest in only one of the bridges, the issue of “ring-fencing” revenues for each bridge, the continued need for a large number of staff on site at each of the bridges, and the distinct challenges that each of the bridges faces in the future.
3.4.3 Scottish Tolled Bridges Authority

The consultation paper included the option of a new single Scottish Tolled Bridges Authority. This would require primary legislation to transfer the management and operations of all three bridges to this Authority, which would sit alongside Transport Scotland and RTPs. As a single body, the Authority could benefit from drawing on a range of expertise within Scotland, and could develop best practice in the operation and running of the bridges.

Consultation respondents expressed little support for such an Authority. In particular, respondents saw no advantages in this option over the Transport Scotland model, and commented that it would create another transport bureaucracy. A number were concerned about the potential set-up and operational costs of a new national body, although these costs have not been assessed in detail. The loss of local accountability and of transparent funding arrangements were seen as particular disadvantages. As with the joint Forth and Tay management body option, there would be issues around spending of any excess tolling revenues (outside what was required for bridge maintenance) and utilisation of Erskine and Forth revenues for repayment of the current Tay debt.

A decision would also have to be taken on whether to trunk the Forth and Tay Road Bridges, making the new Authority a trunk road authority, or to retain the local road status of these bridges. Whether trunked or not, the authority could be set up in such a way that it would be able to introduce some kind of road user charge on the bridges. However this is likely to be a long process with significant legislative changes, and wider implications in terms of the ongoing debate about road pricing, particularly for the trunk road network.

In addition, central management could be seen as inappropriate for the Tay Road Bridge in particular, as it is predominantly used by local traffic which has a direct relationship with the management of Dundee city centre.

In the wider context, the Scottish Executive’s Efficient Government initiative seeks to avoid the creation of new bodies, especially where there are alternatives. In this case, we consider that any central management of the bridges would be better performed by Transport Scotland.

Summary

The appraisal indicates that there are significant legislative and potential cost implications associated with this option, with marginal benefits that could be captured by other options. Those responding to the consultation did not see any advantages over other possible management models for the bridges, and were concerned by the loss of local accountability, particularly for the Tay Road Bridge.

3.5 Management options for the three tolled bridges

The early part of this chapter provided the background on the new transport landscape in Scotland. Transport Scotland and the RTPs stand separate from the other management options for the bridges as they will exist whether or not they are charged with the management of one or more of the bridges; and even if they are not directly responsible for the bridges, there will be a need for close interaction between Transport Scotland, the relevant RTPs, and the bridge authorities.
We have examined and dismissed three of the eight options identified as potential management models for the bridges. In each case we considered the advantages and disadvantages of each model, and have taken the view that none of the options examined so far appear to provide a practicable means to achieve the Executive’s aim of striking an effective balance between addressing access, managing traffic demand where it is necessary to do so, ensuring the efficient use of wider transport networks, or providing for the ongoing costs of maintaining and operating the bridges.

In the following sections we examine in detail the five remaining management options for each of the bridges – removing tolls, management by a Joint Board on the lines of the TRBJB, management under a FETA type of body, the relevant RTPs, and Transport Scotland.

3.5.1 Options for Erskine Bridge

The Erskine Bridge is the only tolled bridge which is a trunk road. It is currently managed by the Executive and, under the current arrangements, is passing to the new agency, Transport Scotland, in January 2006. Maintenance of the Bridge is contracted to AMEY Infrastructure Services Ltd, as part of the trunk road operating contract (TROC) and tolls are collected under contract by APCOA Parking (UK) Ltd.

Option 1 – Remove tolls at Erskine Bridge

The consultation paper did not seek views on this option directly, but around one-third of those responding sought the removal of tolls at the bridges, and about half of those singled out Erskine Bridge.

We have discussed in Chapter 2 that there is no strong case for continuing to charge tolls at Erskine on the historical basis of recovering construction costs, and that ongoing costs are met from the Scottish Executive’s roads programme. Also in that Chapter we highlighted that the bridge does not currently suffer congestion problems, having spare capacity to accommodate further traffic, while parts of the wider road network in Glasgow suffer congestion which could be alleviated if more traffic was attracted to Erskine. Traffic modelling discussed in section 2.2.2 and Appendix B indicates that this wider congestion could be alleviated by ending the tolling regime at Erskine Bridge, but these benefits would require to be “locked in”.

If tolls are removed, traffic levels on the bridge are expected to increase. In Phase One of the Review, we believed that this increase could require bridge strengthening, with associated costs. Further modelling indicates that strengthening is not likely to be necessary as an immediate impact of removing tolls, although traffic levels would continue to be monitored to confirm the traffic levels indicated by the modelling, and to assess whether strengthening work would become necessary in the future.

There are various legislative steps necessary to end the tolls at Erskine. As a first stage, it would be possible to suspend tolling, by means of a Ministerial Order. Tolling could end 14 days after the Minister has given public notice of the intention to suspend the tolls. This suspension could remain in place for up to 18 months during which time Ministers would normally promote a more formal Statutory Instrument revoking the Tolling Order. However, the power to charge tolls at the Bridge will expire on 1 July 2006 and a Statutory
Instrument may not therefore be required, if tolls were to end before this date. On a longer timescale, the main Erskine Bridge Tolls Act 1968 would also have to be repealed, although provisions such as the requirement to prepare Annual Accounts for the Parliament would remain relevant for up to two years, depending on the timing of the end to tolls, and the process of winding up operations at the Bridge.

There would be a loss of the tolling income to the Scottish Executive’s bridge programme – currently about £5.5 – £6m per annum – and some additional costs on maintenance due to increased traffic flows. There would also be initial costs arising from the need to remove the existing toll booths and realign the road. We have not made a detailed estimate of such costs.

Against this, there would be offsetting savings arising from the end of the tolls collection contract. The current costs of this agreement are some £700,000 per annum, and there are associated administration costs within the Scottish Executive. However, the contract is due for renewal and it is likely that the new contract costs could be somewhat higher than this. In addition, we have highlighted in section 2.4.2 the need for significant early upgrading of the operations and systems at Erskine Bridge. We do not, at this stage, have detailed costings for this work but, based on estimates of work necessary on the Administration Building, and on the experience of redesigning the tolling systems and toll plaza at the Forth Road Bridge, we estimate that total costs could be in the region of £5m to £8m. This funding would have to be found within the current spending period.

Elsewhere we have reported the representations received in support of ending tolls at Erskine. A move to end tolls would be widely welcomed by the travelling public, and by local authorities and business interests in the region in particular. If this option were pursued, the Bridge would continue to be managed as part of the trunk road network, with maintenance and other operations carried out by Transport Scotland.

Option 2 – Tay Road Bridge Joint Board management model

The powers and functions of the Tay Road Bridge Joint Board model are summarised at section 3.1 above.

The TRBJB model creates a body which is responsible for the administration, management, maintenance and operation of the Bridge. It has no remit for improving local transport or contributing to other schemes to reduce congestion across the Bridge.

Primary legislation would be required to transfer ownership of and responsibility for the Erskine Bridge from the Scottish Executive to a new Joint Board, comprising one or more local authorities from around the Clyde estuary. Those authorities would be likely to include, as a minimum, Glasgow City, East and West Dunbartonshire, Renfrewshire and East Renfrewshire Councils. As part of this, it would also be necessary to de-trunk the route. This may give rise to criticism, given the Bridge’s clear strategic role within the existing motorway and trunk road network. Modelling indicates that over 60% of morning peak time traffic is undertaking long-distance or strategic journeys. This proportion is likely to be higher at other times of the day.

The Board would have broadly the same powers as are now available at the Tay Road Bridge: to charge and collect tolls, and to maintain and operate the Bridge. The Board would be responsible for setting the toll levels, and funding any necessary future maintenance and
upgrading of the Bridge. Costs of maintaining and operating the Bridge would fall to the Board, to be funded by way of tolls, but potentially with the possibility of borrowing for long term investment. The current maintenance programme for the Erskine Bridge is estimated to cost some £17m over the next seven years.

The most significant obstacle to pursuing this option is the fact that those councils which would make up such a Board, are strongly opposed to the continuation of tolling at the Erskine Bridge. There is no desire on the part of these authorities to take on the management of the Bridge under this or any other model. The Joint Board management model is therefore not seen as a viable option for Erskine under the present circumstances.

**Option 3 – Forth Estuary Transport Authority management model**

The powers and functions of the Forth Estuary Transport Authority model are summarised at section 3.1 above.

As with Option 2 above, legislation would be required to transfer ownership of and responsibility for the Erskine Bridge from the Scottish Executive to a new Transport Authority. The Authority would draw its membership from surrounding local authorities, and would have powers and responsibilities based on the current FETA model. The Authority would be able to replace tolling with RUC, if and when this was deemed necessary, and to invest toll revenues in wider transport improvements such as public transport provision, as well as being able to set, charge and collect tolls, and maintain the Bridge itself. Again, it would be necessary to de-trunk the route.

Once again, the most significant obstacle to pursuing this option is the fact that local authorities in the west of Scotland area are strongly opposed to the continuation of tolling at the Erskine Bridge. There is no desire on the part of these authorities to take on the management of the Bridge under this or any other model. The FETA management model is therefore not seen as a viable option for Erskine under the present circumstances.

**Option 4 – Regional Transport Partnership**

As discussed at paragraph 3.2.2 above, the RTPs are new bodies and are not generally designed with the intention of being responsible for the operation of major pieces of infrastructure at the outset. The RTP for the West of Scotland is an exception to this, as it will be responsible for the Glasgow subway. However, local authorities in the west of Scotland area are generally opposed to the continuation of tolling at the Erskine Bridge. This was the clear message from those authorities in response to the consultation paper, in the associated stakeholder meetings, and in other fora such as the Scottish Parliament’s Public Petitions Committee. There is no desire on the part of these authorities to take on the management of the Bridge under the new West of Scotland Transport Partnership or any other model. Traffic on the road is strategic in nature, with over 60% of traffic at the AM peak being strategic – it is likely to be even higher at non-peak times. The RTP for the west of Scotland will not have any other roads functions in the short to medium term. For those reasons, the RTP management model is not seen as a viable option for Erskine under the present circumstances.
Option 5 – Transport Scotland

The role of Transport Scotland is discussed at paragraph 3.2.1 above. In general terms there would be little change in the way in which the Erskine Bridge is currently managed. Responsibility for the trunk road network, of which Erskine is a part, is passing from the Scottish Executive Enterprise, Transport and Lifelong Learning Department to Transport Scotland from January 2006. The present arrangements in terms of maintenance and toll collection could therefore continue as now.

However, work undertaken in parallel with the main Phase Two Review shows that significant investment is required in the toll plaza, collection systems and other infrastructure at the Erskine Bridge. This could amount to some £5m to £8m over the next two to three years and Transport Scotland would have to fund this upgrading, although further detailed work is required to make an accurate assessment. In addition, the present toll collection contract is due for renewal. Upgrading work and the transfer of responsibility to Transport Scotland offers an opportunity to re-examine the scope of that contract, to ensure that the day to day operation and management of the Bridge is managed efficiently and effectively.

There are benefits to be achieved by managing one or more of the tolled bridges centrally. In particular, management of all the bridges by Transport Scotland could allow a single approach to management, and help to address wider issues of integration of the bridges with the roads and other transport networks. If the tolls remain, these advantages are balanced against the potential disadvantages of the lack of local accountability, transparency, and expenditure on local projects.

Summary

Analysis indicates that, on balance, Transport Scotland should be responsible for the bridge, and that tolls should be removed. The opposition to tolling at the Bridge from local authorities in the area, MSPs and others, means that it would be difficult to gain acceptance for alternative management options at the Bridge. In terms of meeting construction costs and/or managing traffic demand at the Bridge, there is no strong policy basis for continuing to charge tolls at the Erskine Bridge. Traffic modelling has shown that removing the tolls can ease congestion elsewhere in Glasgow, particularly through the Clyde Tunnel and on the Clydeside Expressway and a number of other routes to the north of the Clyde. This would improve the efficiency of the wider road network.

If tolls were removed, all efforts would have to be made to “lock in” the resultant congestion benefits in Glasgow to ensure that the new free space did not fill up with new trips in the future. Removal of the tolls would result in a loss of toll income, amounting to some £5 – £6m per annum, although this would be partly offset in other cost savings. If tolls remain, Transport Scotland is the most appropriate management option, given the high percentage of strategic traffic and the lack of support from the relevant local authorities for other models.
<table>
<thead>
<tr>
<th>Option</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove tolls</td>
<td>• Primary and secondary legislation required&lt;br&gt;• End to tolls achievable on short timescale&lt;br&gt;• Potential to relieve congestion on other routes towards centre of Glasgow, particularly on the Clyde Tunnel route&lt;br&gt;• Contribute to the relief of air quality problems in Glasgow city centre&lt;br&gt;• Requires those benefits to be ‘locked in’&lt;br&gt;• Loss of tolling income of around £5 – £6m per annum, offset by annual savings of £700k on toll collection costs&lt;br&gt;• No requirement to upgrade tolling systems, plaza or building saves around £5m to £8m one-off costs</td>
</tr>
<tr>
<td>Tay Road Bridge Joint Board model</td>
<td>• No support from potential member local authorities&lt;br&gt;• Need to de-trunk the route, but majority of traffic is strategic&lt;br&gt;• Board would have limited powers&lt;br&gt;• Costs of upgrading tolling systems, plaza or building of around £5m to £8m&lt;br&gt;• Continued relationship between tolls and congestion and air quality problems elsewhere in Glasgow</td>
</tr>
<tr>
<td>Forth Estuary Transport Authority model</td>
<td>• No support from potential member local authorities&lt;br&gt;• Need to de-trunk the route, but majority of traffic is strategic&lt;br&gt;• Costs of upgrading tolling systems, plaza or building of around £5m to £8m&lt;br&gt;• Continued relationship between tolls and congestion and air quality problems elsewhere in Glasgow</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>• No support from potential member local authorities&lt;br&gt;• Costs of upgrading tolling systems, plaza or building of around £5m to £8m&lt;br&gt;• Continued relationship between tolls and congestion and air quality problems elsewhere in Glasgow</td>
</tr>
<tr>
<td>Transport Scotland</td>
<td>• Status quo – no immediate legislative implications&lt;br&gt;• Not necessarily able to re-invest tolling revenue in local area&lt;br&gt;• Cost of upgrading tolling systems, plaza or building of around £5m to £8m&lt;br&gt;• Continued relationship between tolls and congestion and air quality problems elsewhere in Glasgow</td>
</tr>
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</table>

3.5.2 Options for Forth Road Bridge

The Forth Road Bridge is a local road managed by the Forth Estuary Transport Authority (FETA). FETA is responsible for the management, maintenance and operation of the Forth Road Bridge and the funding of those activities. It has the power to develop, support and fund schemes and measures to reduce road traffic congestion on the bridge or to encourage an increase in the use of public transport across the Firth of Forth.

FETA is a local authority joint board, made up of representatives of the surrounding local authorities, which provides a high level of local representation. It is a local traffic authority and is therefore able to introduce RUC.
Option 1 – Remove tolls at Forth Road Bridge

As discussed at section 2.2.2, the Bridge suffers from severe congestion problems and frequently operates beyond design capacity. Congestion problems are exacerbated by the high proportion of single occupancy vehicles crossing the Bridge, particularly at peak times.

Traffic modelling carried out in Phase One and followed up in Phase Two indicates that these traffic problems would only be made worse by the removal of tolls at the Bridge. A decision to remove tolls would leave no effective means of managing demand (decreasing congestion problems or at least preventing them worsening by holding back traffic growth), or of promoting more efficient use of the surrounding road and other transport networks, through increasing vehicle occupancy, changing travel times and/or encouraging modal shift. No one during the consultation process identified any practical, cost effective method of reducing the congestion, or preventing its increase, without a tolling regime in place.

In financial terms, loss of tolling revenue which currently amounts to some £10m per annum would be a factor. FETA’s current 15 year financial expenditure plan amounts to some £141m which would, in the absence of tolling revenues, have to be found elsewhere. This would be likely to lead to calls for the Executive to trunk the route and for Transport Scotland to take on the management of the Bridge. This would be a significant additional financial pressure on the new Agency, becoming greater as the bridge gets older.

Given the congestion problems at the Forth Road Bridge, and the need to fund significant ongoing maintenance and upgrading works, the removal of tolls does not appear to be a viable option.

Option 2 – Tay Road Bridge Joint Board management model

Secondary legislation would be required to transfer ownership of and responsibility for the Forth Road Bridge from FETA to a new local authority Joint Board. This choice of model would effectively be a return to the powers available to FETA’s predecessor prior to 1 April 2002, when FETA replaced the former Joint Board.

A Joint Board approach, on the lines of the existing TRBJB, would effectively remove the new powers gained by FETA when it was set up in 2002, including the power to promote and implement a RUC scheme, and to invest revenues on transport schemes aimed at reducing or relieving congestion on and around the Bridge. Further, Joint Boards do not have the power to introduce RUC schemes, or to invest tolling revenues beyond the confines of the Bridge itself. This change would therefore halt FETA’s current plans to bring forward a RUC scheme to replace tolls on the Bridge. It would also mean that FETA’s current programme of wider transport improvements, including the funding of the A8000/M9 Spur upgrade, could not be taken forward.

The process of winding up FETA and setting up a new Board would involve some administrative costs, although we do not presently have an estimate of what these might be. However, the process itself could take some time, in terms of legislation and in terms of agreeing new structures and responsibilities with the affected local authorities. FETA took office some 15 months after the Transport (Scotland) Act 2001 took effect, but discussions and planning had taken place over a period of at least two to three years before this.
Option 3 – Forth Estuary Transport Authority management model

This is the existing management model at the Forth Road Bridge. There would be no new legislation or implementation costs associated with retaining this management structure.

As noted above, the new Authority, FETA, was set up under the Transport (Scotland) Act 2001 and the Forth Estuary Transport Authority Order 2002, aimed at addressing specific problems at the Bridge. FETA is responsible for the maintenance and operations needs of the Bridge and the surrounding transport network, and has a remit to manage traffic demand, ease congestion and improve the efficiency of wider transport networks, all of which are key objectives which we have identified for this Review. FETA has also recently approved a local transport strategy which sets out its objectives and spending plans for the period to 2018. In order to fund this programme, and to better manage demand at the Bridge, FETA is also committed to replacing the present tolling regime with a road user charging scheme, probably from 2008.

However, FETA faces considerable challenges in the future, given the financial and operational pressures which arise from the need for major planned and structural maintenance works, and from the capacity issues around cross-Forth travel on the Bridge itself and more widely. There is a continuing need for FETA to work closely with all major stakeholders, including the Scottish Executive, Transport Scotland, and the relevant local authorities and regional transport partnership. The current governance arrangements for FETA have not to date allowed these challenges to be faced in a stable manner.

Option 4 – Regional Transport Partnership

The role of the RTPs is set out at paragraph 3.2.2 above. As discussed there, the RTPs are new bodies and are not generally designed with the intention of being responsible for the operation of major pieces of infrastructure. RTP management of the Forth Road Bridge would fall most obviously to the proposed new South East Transport Partnership. However, the proposed membership of the partnership includes a number of local authorities, for example, Midlothian and the Scottish Borders Councils, which have little direct interest in the operation of the Bridge and which, for that reason, were not included as members of FETA when that Authority was set up in 2002.

Option 5 – Transport Scotland

The role of Transport Scotland is discussed at paragraph 3.2.1 above. Primary legislation would be needed to wind up FETA, transferring responsibility for the Bridge to Transport Scotland. In addition, it is likely that the bridge would need to be trunked.

A number of consultees stated that the traffic and congestion pressures at Forth and in Edinburgh mean that local responsibility and accountability for the Forth Road Bridge are important elements if continued tolling or charging at the Bridge is to be seen as acceptable.

As the Bridge represents a key link in the strategic network, management by Transport Scotland could allow Ministers to take direct control, particularly alongside the Agency’s responsibility for the Rail bridge which would allow consideration of the strategic need for cross-Forth travel. However, significant policy and legislative changes would be needed to
allow Transport Scotland to manage and operate the bridge, and manage traffic demand, particularly if road user charging were to be implemented.

Summary

Analysis indicates that tolls should remain on the Forth Road Bridge, and that the Forth Estuary Transport Authority (FETA) is, on balance, the most appropriate management option. FETA has the powers to address congestion and manage traffic demand, invest in wider transport improvements, make financial provision for planned maintenance and upgrading of the bridge (some £113 million between 2006/7 and 2020/21), and take forward a road user charge. However, it has experienced some significant problems recently due to its governance arrangements. This has led to uncertainty for bridge users. As the Bridge represents a key link in the transport network, management by Transport Scotland which also controls the Rail bridge could allow Ministers to manage cross-Forth travel in a more strategic manner. This would require primary legislation. The RTP option is less appropriate as not all local authority members have a direct interest in bridge issues and, in the early stages, the relevant RTP will not be set up to manage major infrastructure.

<table>
<thead>
<tr>
<th>Option</th>
<th>Summary</th>
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<tbody>
<tr>
<td>Remove tolls</td>
<td>• No practical mechanism for addressing issues of significant congestion and traffic management</td>
</tr>
<tr>
<td></td>
<td>• Primary and secondary legislation required to wind up FETA</td>
</tr>
<tr>
<td></td>
<td>• Loss of tolling income of around £10m per annum, costs of maintenance and investment programme likely to fall to Transport Scotland (£141m to 2020-21)</td>
</tr>
<tr>
<td>Tay Road Bridge Joint Board model</td>
<td>• Return to former Joint Board status</td>
</tr>
<tr>
<td></td>
<td>• Board would have limited powers – could not invest in transport improvements beyond Bridge</td>
</tr>
<tr>
<td>Forth Estuary Transport Authority model</td>
<td>• Status quo position</td>
</tr>
<tr>
<td></td>
<td>• FETA has powers to address congestion and manage traffic demand, invest in wider transport improvements, and make financial provision for maintenance and upgrading of bridge. These are key objectives of the tolled bridges review</td>
</tr>
<tr>
<td></td>
<td>• Significant problems caused by governance arrangements</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>• Not all local authority members have direct interest in Bridge issues</td>
</tr>
<tr>
<td></td>
<td>• The relevant RTP will not be set up to manage major infrastructure in the early stages</td>
</tr>
<tr>
<td>Transport Scotland</td>
<td>• Recognises strategic importance of cross-Forth travel</td>
</tr>
<tr>
<td></td>
<td>• Primary and secondary legislation required to transfer ownership and responsibility for Bridge</td>
</tr>
<tr>
<td></td>
<td>• Transport Scotland not able to implement Road User Charging scheme under current legislation</td>
</tr>
<tr>
<td></td>
<td>• Transport Scotland not currently able to ring-fence tolling revenues for bridge maintenance or wider transport investment, under current legislation</td>
</tr>
<tr>
<td></td>
<td>• Loss of local accountability</td>
</tr>
</tbody>
</table>
TRBJB is currently responsible for the administration, management, maintenance and operation of the Tay Road Bridge. Unlike FETA, it has no remit for improving local transport or contributing to other schemes to reduce congestion across the Bridge. It is a local authority joint board composed of representatives of the surrounding local authorities.

**Option 1 – Remove tolls at the Tay Road Bridge**

As discussed at section 2.2.2 and Appendix B, the Tay Road Bridge does not suffer from the same levels of congestion as the Forth Road Bridge. Nevertheless, there is a relatively short period of congestion at peak times, particularly during the evening commuter period due to vehicles queuing at the toll booths. This impacts mainly on the centre of Dundee and, with the increase in traffic growth, this situation is likely to get worse as time goes on.

As at Forth, traffic modelling carried out in Phase One and followed up in Phase Two indicates that these traffic problems would be made worse by the removal of tolls at the Bridge, and that it is unlikely that congestion can be managed effectively without tolling. No one during the consultation process identified any practical, cost effective method of reducing congestion without a tolling regime in place.

Loss of tolling revenue would be a factor. TRBJB’s capital expenditure programme amounts to some £55m between 2003-04 and 2023-24, and includes expenditure amounting to some £19.6m over the next three years to replace the main bridge bearings. In addition, the main legislation relating to the Bridge requires the Board to repay all outstanding loans by no later than 2016. The current debt outstanding is some £13m, and around 50% of toll income is used to meet capital and interest charges on this.

In the absence of tolling revenues, funding both to repay this outstanding debt, and to maintain and operate the bridge would have to be found. Like Forth, it is likely that this would lead to calls for the Executive to trunk the route and for Transport Scotland to take on the management of the Bridge. This would be a significant additional financial pressure on the new agency, becoming greater as the Bridge gets older. In addition, trunking of the Tay would not be consistent with its main function, as some 65% of traffic is undertaking local journeys. A number of those responding to the consultation emphasised the need for local accountability and transparency in relation to tolls collected and the expenditure on the bridges, and several made the point that this is particularly important at Tay, given the local nature of much of the traffic.

Given the congestion problems around the Tay Road Bridge, the need to repay outstanding debt, and the ongoing need to fund significant ongoing maintenance and upgrading works, the removal of tolls does not appear to be a viable option.

**Option 2 – Tay Road Bridge Joint Board management model**

This is the status quo position for the Tay Road Bridge. Maintenance is planned and carried out by the Bridge management in conjunction with the constituent local authorities. There is a high degree of local accountability, and sensitivity to the effects on local traffic. It should also mean effective planning, for example of maintenance, so that works do not coincide with maintenance closures on alternative routes.
No legislative change would be required if the Joint Board were to remain responsible for the operation and maintenance of the Tay Bridge. However, there is a strong case for amending the existing legislation to remove the deadline for repayment of debt on the Bridge. If the tolls collected are not sufficient to pay for the maintenance needed in any given year, or over a longer term project, then the Joint Bridge Board is theoretically able to borrow money to cover the costs. In practice, the fact that the Board must repay its outstanding loan debt by 2016 makes it increasingly difficult for the Board to consider significant further borrowing. Against this background, the Scottish Executive provides capital grant funding to the Board of £2.3m per annum in this spending period, to help it meet its current commitments.

However, the Board faces increasing financial pressures, including the need to replace the main bridge bearings. This is not affordable under the present arrangements without substantial support funding from the Executive, significant increases in toll levels which are thought to be unacceptable to Bridge users and/or further borrowing by the Board. By amending the legislation to remove the repayment date, the Board would be able to consider further, long term borrowing, or re-financing existing borrowing on a longer timescale.

Apart from the financial pressures noted above, the Board has no powers or remit beyond maintaining and operating the Bridge itself. While the Board works closely with its constituent councils and other stakeholders on a range of issues, including the current project to regenerate the Dundee Central Waterfront area, it cannot offer financial support for wider transport improvements, or promote wider congestion-related initiatives such as improved public transport provision, developing park and ride facilities etc.

The Board recently commissioned Hyder Consulting to examine options for upgrading the tolling systems and equipment at the Bridge. On 19 September 2005, the Board considered the consultants’ report and has accepted the recommendation to plan for the construction of a new toll plaza at the southern end of the Bridge, replacing the existing plaza. This would involve significant changes to the local and trunk roads at the southern landfall. During the Board’s discussion on this issue, some members questioned the Board’s powers to take this forward.

Looking to the future, the Joint Board is not a traffic authority within the terms of the Transport (Scotland) Act 2001 and could not replace the current tolling regime with a RUC scheme aimed at reducing congestion, if this was seen to be necessary.

Repayment of the outstanding debt on Tay should remain the main objective of the tolling regime, and for that reason, RUC powers or greatly expanded powers of investment in wider transport improvements might be unnecessary. However, the existing Board’s powers are currently very restrictive; ideally, these would be widened to allow it greater flexibility in meeting emerging challenges, e.g. to allow it to contribute money to projects related to traffic crossing the bridge that reduce congestion and assist in tackling air quality problems in Dundee.

Option 3 – the Forth Estuary Transport Authority management model

The Transport (Scotland) Act 2001 makes provision for replacing Joint Boards responsible for the management of bridges with a new Authority, with wider powers in terms of tolling or
implementing RUC schemes, and for investing in transport improvements and initiatives beyond the Bridge. These are the wider powers now available to FETA.

In the previous section we have discussed the challenges facing the existing Board, and have noted that it currently has limited powers to address these in a significant way. A new FETA-style authority could be a significant step forward in helping to address the needs of the Bridge and the wider issues of congestion in the area. It would also allow the new Authority to work more meaningfully with both the Scottish Executive and Transport Scotland, and the neighbouring local authorities, to promote a joined up approach to roads and other transport improvements. In particular, the Authority could play a full part in supporting the regeneration of Dundee Waterfront. This is particularly important given that a significant part of the land required to complete the regeneration project is currently owned by the Bridge Board, and that the northern section of the Bridge itself will have to be redesigned and rebuilt to realise the benefits of that project.

Replacing the existing Board with a new Authority, based on the FETA model, would require new legislation. This would mainly be secondary legislation, under the enabling powers set out in section 69 of the Transport (Scotland) Act 2001, and would follow the same general course as the Forth Estuary Transport Authority Order 2002. Necessary amendments to existing primary legislation could also be effected by means of the Order. Planning and preparation for the change would involve a period of discussion and consultation with the Board, local authorities, bridge users and other stakeholders before the Order could be laid in the Scottish Parliament. The process is already familiar from setting up FETA in 2002 and, in some cases, will involve the same stakeholders as then.

While moving to the FETA model under the Transport (Scotland) Act 2001 would allow the Board to be more flexible, recent experience at Forth has shown that the governance arrangements of FETA can be problematic. It would be important to ensure that these issues were not reproduced at Tay if a FETA-style body were introduced.

The greater powers available under this model would allow the new Authority to work more meaningfully with councils and other transport providers. However, the Authority would be required to take on and repay the existing loan debt, and maintain and operate the Bridge itself. These would be the first priorities for the Authority, and could be set out in the necessary Order. However, as with the existing Board model, there would be significant advantages in removing the requirement to repay all outstanding debt by 2016, to allow the Authority to address the current spending pressures brought about by the need to repair and maintain the Bridge itself, and to make meaningful long-term financial plans to address both bridge maintenance and wider transport initiatives.

There would be some costs involved in winding up the existing Board and setting up a new Authority. However, these are not considered to be significant.

Option 4 – Regional Transport Partnership

The role of the RTPs is set out at section 3.2.2 above. As discussed there, the RTPs are new bodies and are not generally designed with the intention of being responsible for the operation of major pieces of infrastructure.
The Tay Road Bridge will straddle the boundary between the proposed south-east RTP and the proposed new Central and Tay RTP. If the south-east RTP were to adopt the Bridge, this would not include Dundee City Council, which is the prime destination for most of the bridge traffic, whereas management by a Central and Tay RTP would exclude Fife Council from full membership, giving rise to likely criticism from the other side of the river, particularly given that the majority of northbound traffic using the Bridge originates in Fife.

Fife’s links with Central and Tay RTP could be addressed by including Fife as a non-voting but active “observer” on the RTP, and by including cross-Tay transport issues in the RTS. Bridge authorities could also be full or observer members of the RTPs, although this would primarily be a decision for the RTPs themselves.

Option 5 – Transport Scotland

The role of Transport Scotland is discussed at section 3.2.1 above. There are significant issues to address if this model is pursued. Primary legislation would be needed to wind up the Tay Road Bridge Joint Board, transferring responsibility for the Bridge to Transport Scotland. In addition, it is likely that the Bridge would need to be trunked under this option.

However, around 65% of all traffic using the Tay Bridge is of a local nature, with many of the journeys being relatively short distance commuter trips. Tay also feeds traffic directly into Dundee city centre, and therefore into the local road network. A number of consultees stated that the traffic and congestion pressures within Dundee mean that local responsibility and accountability for the Tay Road Bridge is crucial.

Further, the Board has an outstanding loan debt of some £13m, with around half of the tolls income collected going to repay capital and interest on these loans. If management of the Bridge were to pass to Transport Scotland, it would have to adopt this debt, repaying the outstanding amount, either up front or over the longer term through continued tolling.

Management of all the bridges by Transport Scotland would allow a single approach to management, and help to address wider issues of integration of the bridges with the roads and other transport networks. However, for Tay, these advantages appear to be outweighed by significant barriers to this model, in terms of the policy and legislative changes which would be needed to allow it to manage and operate the bridges, and manage traffic demand (particularly through the introduction of RUC schemes), and provide an acceptable level of local accountability.

Summary

Analysis indicates that tolls should remain on the Tay Road Bridge, and that the Tay Road Bridge Joint Board should continue to manage the bridge. The Board would benefit from having extra powers to tackle congestion on and around the bridge, and this would be assisted by removing the statutory requirement on the Board to repay all the outstanding debts by 2016/17.

The current Board has no remit beyond maintaining and operating the bridge itself. This limitation means that it cannot meet the complex challenges required to manage and maintain the bridge in the greater context of the transport network. Both the RTP and Transport Scotland options are, however, inappropriate options for Tay. The Bridge straddles the
boundary between two RTP areas and therefore selecting the appropriate RTP would be
difficult; the large majority of traffic on the bridge is local and therefore it would not be
appropriate to bring it into Transport Scotland at this time. While moving to the FETA
model under the Transport (Scotland) Act 2001 would allow the Board to be more flexible,
recent experience at Forth has shown that the governance arrangements of FETA can be
problematic, and those problems could be reproduced at Tay if a FETA-style body were
introduced. Furthermore, repayment of the outstanding debt on Tay should remain a priority
for the tolling regime. For that reason, the FETA model’s greatly expanded powers of
investment in wider transport improvements might be unnecessary. However, the existing
Board’s powers should be widened to allow it greater flexibility in meeting emerging
challenges.

<table>
<thead>
<tr>
<th>Option</th>
<th>Summary</th>
</tr>
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</table>
| Remove tolls                          | • No practical mechanism for addressing issues of congestion and traffic management  
                                         • Primary and secondary legislation required to wind up TRBJB  
                                         • Loss of tolling income of around £3.5m per annum, costs of maintenance and investment programme likely to fall to Transport Scotland (£56m to 2023-24)  
                                         • Outstanding debt of some £13m would have to be repaid from different source |
| Tay Road Bridge Joint Board model     | • Status quo position  
                                         • Limited powers in terms of addressing congestion and managing demand  
                                         • Limited powers in terms of working with other stakeholders and transport providers to improve transport provision  
                                         • Limited ability to make financial provision for maintenance and other costs  
                                         • Continued focus on repayment of existing debt  
                                         • Could grant some wider powers to allow Board to contribute to projects relating to the bridge |
| Forth Estuary Transport Authority model | • Wider powers to address congestion and manage traffic demand, invest in wider transport improvements, and make financial provision for maintenance and upgrading of bridge These are key objectives of the tolled bridges review  
                                         • Greater financial flexibility in setting long term plans  
                                         • Could attract governance problems that have affected FETA  
                                         • Main focus of expenditure continues to be repayment of debt, so greatly expanded powers potentially unnecessary |
| Regional Transport Partnership         | • Not all local authority members have direct interest in Bridge issues.  
                                         • The relevant RTPs will not be set up to manage major infrastructure in the early stages  
                                         • Tay Road Bridge straddles boundary between two RTPs |
| Transport Scotland | - Primary and secondary legislation required to transfer ownership and responsibility for Bridge
- Secondary legislation needed to de-trunk route
- Transport Scotland not able to implement RUC scheme under current legislation
- Transport Scotland not currently able to ring-fence tolling revenues for bridge maintenance or wider transport investment, under current legislation
- Loss of local accountability
- High volume of local traffic |
4. Setting the Tolls

This Chapter considers 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. It further considers a number of principles that might apply when setting tolls, focussing on the use of exemptions and discounts, and current and future developments which will influence decisions about tolling – technological developments, and moves to standardise vehicle classification.

4.1 Legislation and procedures for setting and changing tolls

The current procedures for changing tolls are set out in the relevant legislation for each bridge and are summarised at section 7.3 of the Tolled Bridges Review Phase One Report.

Only the Scottish Ministers can vary the Erskine, Forth and Tay Tolling Orders. Changes to tolls at the Forth and Tay Road Bridges can be proposed by the bridge’s management body and its constituent councils, and by any body which substantially represents the interests of bridge users or particular groups of bridge users. However, changes to tolls at the Erskine Bridge can only be initiated by the Scottish Ministers.

Although everyone has the right to object to proposed changes to tolls, the provisions for dealing with objections vary from bridge to bridge. In general terms, in the case of Erskine Bridge, objections made by a local authority, any organisation which substantially represents the interests of a particular group of bridge users, or any corporate body whose vehicles regularly use the bridge must be considered at an inquiry. In the case of the Tay Road Bridge, objections made by the Bridge Authority or any of its constituent councils or any ‘body’ (which is undefined in the legislation) must be considered at an inquiry. For the Forth Road Bridge, any written objection which is not withdrawn must be considered by an inquiry, if the objector so wishes.

Procedures for changing tolls at the Forth Road Bridge were followed in 2004 when FETA proposed a 20p increase to the toll payable by cars and light goods vehicles. Although approximately 12 million Forth Road Bridge tolls were paid in 2004, only two objections to the proposed increase were received, one of which was subsequently withdrawn. As a result of the remaining single objection, the Scottish Ministers were obliged to hold an inquiry to consider FETA’s proposals under the terms of Part V of the Forth Road Bridge Conformation Order Act 1958.

The inquiry was conducted in December 2004. The inquiry Reporter concluded that the proposed increase was justified and recommended that the increase be approved by the Scottish Ministers. The increase took effect from 1 May 2005, seven months later than FETA had planned. FETA estimate that this delay cost around £1.1m in lost tolling revenue. This recent experience of tolling changes at the Forth Road Bridge illustrates the time and costs which can be involved in the inquiry process.

80% of the respondents who commented on the current inquiry process in their response to the consultation paper perceived it to be an inappropriate way of changing tolls or charges to meet the cost of managing, maintaining and operating a bridge, although a small number said that the procedure is appropriate where public concern is significant. The time and cost of inquiries were the most frequently cited reasons for this lack of support. Those who
commented in favour of the current process said that it provides an essential means of public consultation and accountability. However, some of these respondents said that they believed this could be achieved by other, more straightforward means.

Irrespective of the way in which objections are dealt with, most respondents said that the Scottish Ministers should have final approval of changes to tolls or charges.

The views expressed in response to the consultation and recent experience of Forth toll increases suggest there is a need to amend the legislative and procedural arrangements for changing tolling or charging levels and periods.

As part of this review, we have researched legislation and procedures for admitting and resolving objections against proposals made by other Government bodies and Executive departments, and against proposals by other parties which concern the general law. This has included a review of planning procedures relating to proposals by: the Executive’s Development Department (both the current arrangements and the changes outlined in the Planning White Paper25); the Executive’s Trunk Road Division; Local Authorities in respect of parking charges; and Private Bills. We have also considered The Road User Charging (Consultation and Publication) (Scotland) Regulations 2003.

This has highlighted a number of questions that require further consideration before legislative and procedural changes can be proposed, for example:

- Should there be a lodging fee for objections?
- Should objections only be considered if they meet certain criteria?
- Should there be other ways to resolve an objection to a proposed tolling change instead of or in addition to an inquiry? What should they be? Should they be optional or obligatory? Should they be managed independently e.g. by the Scottish Executive Inquiry Reporters Unit?
- When is an inquiry appropriate? Should this be a discretionary matter for the Scottish Ministers or should the criteria be prescribed?

Further work is required to develop and appraise options for changing tolling or charging levels and periods, in a way that is transparent, flexible, justifiable, and responsive to changing circumstances.

**Summary**

The current legislation and procedures for setting or varying tolls are not consistent across the tolled bridges and, as the 2004 inquiry relating to the Forth Road Bridge tolls showed, may not be perceived as an appropriate way of handling objections to proposed toll changes. This conclusion is supported by most respondents to the consultation. It is important that tolled bridge users continue to be consulted on proposed changes and that their views are taken into account in the decision-making process, but Ministers should have final approval of changes.

http://www.scotland.gov.uk/Publications/2005/06/27113519/35231

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Further analysis is required to develop a consistent and fair approach for setting and varying tolls.

4.2 Tolling Exemptions

Exemptions for bridge tolls and road tolls may be given for a number of reasons. They may be used to maximise the efficiency of the route by ensuring that it is not blocked by accidents, to encourage the use of sustainable transport modes in order to reduce congestion and pollution, or to reduce delays for emergency vehicles. However, a balance has to be struck between the provision of exemptions, revenue requirements and managing demand for road space. In addition, the use of exemptions has administrative implications for toll operators, who must find ways of verifying eligibility that are efficient and effective.

4.2.1 Exemptions for disabled travellers

All three of Scotland’s tolled bridges offer exemptions for disabled travellers. This is rooted in the policy of facilitating mobility and enabling travellers to access the road network, and therefore work and leisure activities, when they may not have any viable alternative to travelling by car. Buses, for example, may be perceived as being inaccessible, either in terms of the vehicle itself, or in terms of getting to and from the bus at either end of the journey. This policy is reflected in The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004 (SSI No. 519) which exempts Blue Badge holders.

Tolling exemptions also currently apply to vehicles displaying a Blue Badge and vehicles which are exempt from Vehicle Excise Duty (VED). People who are entitled to the higher rate mobility component of the Disability Living Allowance, or the War Pensioner’s Mobility Supplement, are entitled to an exemption from VED due to their possible increased dependence on private transport.

The Blue Badge scheme is a UK scheme for which operational responsibility has been devolved. Blue Badges are issued by local authorities following their assessment of applicants’ eligibility against national criteria. Certain applicants automatically qualify for a Blue Badge, for example those who are registered blind or receive the higher rate of the mobility component of the Disability Living Allowance. Some applicants’ eligibility, however, is determined at the discretion of the local authority on the basis of medical reports.

There were approximately 230,000 Blue Badges on issue in Scotland on 31 March 200526, 51% of which were held by recipients of allowances or grants which provide an automatic entitlement to a Blue Badge, 47% had been issued on a discretionary basis to people with a permanent or substantial disability, and the remainder had been issued on a discretionary basis to organisations caring for people meeting one or more of the qualifying criteria.

Toll exemption problems experienced by some Blue Badge holders or those exempted from VED, as outlined at section 6.3.2 of the Phase One Report, are largely a result of the tolling operators’ need to validate exempt crossings by vehicles other than those used by the emergency services. Such problems can be avoided where the traveller has pre-registered

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http://www.scotland.gov.uk/Publications/2005/08/25100154/01557
with the bridge authority and has obtained a book of exemption vouchers. However, many travellers are unaware of this facility.

Many of those responding to the consultation were in support of continued exemptions for disabled travellers. Of the small number who questioned it, several pointed out that the Blue Badge scheme was originally designed to ease parking for disabled drivers, and not as a blanket exemption from transport costs. However, most of those responding thought the system of verifying exemptions, particularly Blue Badge exemptions, should be changed to speed passage through the tolls.

Several respondents suggested that Scottish Citizens Entitlement Cards (SCECs) may offer scope for encoding rights to tolling exemptions for Blue Badge holders and would align arrangements for obtaining concessionary fares and tolling discounts in the future. This would require tolling operators to install technology compatible with SCEC data at the tolling plazas. The current priority for SCECs is their issue to more than one million citizens who are entitled to concessionary fares by April 2006. The addition of toll exemption entitlements to SCECs would be a matter for Local Authorities unless prioritised by the Scottish Ministers.

A further issue raised on a number of occasions in the past, and during our consultation, is a concern amongst toll operators and others that the Blue Badge system is prone to fraudulent misuse. For toll bridges, this could lead to exemptions being claimed falsely, and so to a loss of toll income. Changes to the UK Blue Badge scheme are beyond the scope of this Review, but we will pass on the relevant findings of the Bridges Review to the Department for Transport.

Summary

The Scottish Ministers are committed to improving access for all travellers, including disabled travellers. Continuing exemption from bridge tolls for disabled drivers supports that policy and is consistent with The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004. However, there is a need to ensure that the verification systems can operate to speed travellers through the toll booths as quickly as possible, through improving current manual systems and by seeking to make the most of emerging technology to verify Blue Badge, and other, exemptions automatically.

4.2.2 Exemptions for emergency services vehicles

Emergency service vehicles (Police, Fire and Ambulance) are exempt from tolls at all of the tolled bridges. The Phase Two consultation paper noted that The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004 include an exemption for vehicles operated by the Coastguard. Respondents were asked whether a similar exemption should be offered by toll operators, and three-quarters of those responding to this question supported this extension of exemption for HM Coastguard vehicles.

A number of those responding to the consultation paper noted that the issue of such exemptions is more related to ease the passage of vehicles responding to an emergency than to the collection, or otherwise, of a financial toll. Given this, it was stated that exemptions should only apply in “blue light” situations. However, other consultees suggested that verifying whether vehicles were responding to an emergency would be impractical.
Some respondents to the consultation suggested further extending exemptions to other travellers, including doctors on call, free patient transfer vehicles, blood transfusion service vehicles, Royal Military Police and Bomb Disposal vehicles. There is little or no precedent for this, and it would be difficult for toll operators to verify whether such an exemption was being correctly claimed, as many such travellers use unmarked and/or private cars to undertake their journey. In addition, such travellers may be able to reclaim travelling costs, including toll charges, from their employer, which in many cases will be a public body.

**Summary**

There is widespread support for extending toll exemptions to vehicles operated by the Coastguard. A change to this effect is also in line with The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004. A strong case has not been made for extending exemptions to other groups or types of vehicle.

### 4.2.3 Exemptions for breakdown vehicles

The consultation paper also asked whether exemptions from tolls should be extended to commercial breakdown service vehicles responding to breakdowns on areas of the road network other than where this is the responsibility of the bridge authorities. For example, a vehicle which breaks down on the Forth Road Bridge will be relocated (free of charge) by one of FETA’s recovery vehicles to a position where it will not impede bridge traffic flows and where it may be recovered by a commercial breakdown service. Exempting commercial breakdown services – or offering a 100% discount – would be in line with the RUC scheme in London, and would in principle recognise the role such vehicles and organisations have in helping to clear vehicles and therefore ease traffic flows.

A significant majority of those responding to this question were not in favour of exempting such services. Many made the point that, although these vehicles respond to breakdowns on the main road networks, they do not operate on the tolled bridges, where almost all breakdowns are cleared by the bridge authorities themselves. Many respondents also pointed out that breakdown services are commercial organisations and will, as now, recover their costs from their customers or members. It was further noted that it would be very difficult to distinguish trips to respond to a call out from other trips, such as return journeys or “repositioning”.

Those in favour of exempting breakdown services noted that this would be consistent with road pricing policy and legislation elsewhere in the UK. While this is the case in London, the exemption is not set out in main legislation. It is specific to individual schemes. In practice, these exemptions are offered in recognition of the fact that breakdown vehicles operate within the “charging area” and assist in clearing vehicles, therefore easing traffic flow in that area and the wider network. In contrast, breakdown services do not attend vehicles on the tolled bridges themselves, and are not therefore required to pay the toll. There is not, therefore, any direct parallel with the RUC example.

In addition, while it might be possible to offer toll exemptions for well known, national breakdown services, there are many other companies which may also attend breakdowns in the vicinity of the tolled bridges. Arguably all such businesses should be treated equitably,
but it would be extremely difficult to identify all such companies and verify their entitlement to the exemption.

Summary

There is little support, or traffic management justification, for extending exemptions from tolls to commercial breakdown services. Such an exemption is generally seen as inappropriate, particularly given that such services do not attend breakdowns on the bridges themselves.

4.2.4 Exemptions for Public Service Vehicles

Public Service Vehicles (PSVs), buses for example, are charged a full toll at each of the three bridges. The tariff ranges from 60p in each direction at the Erskine Bridge to £1.40 at Forth (northbound only) and Tay (southbound only). The Forth and Tay tariff is more than the full cost to a car or light goods vehicle and less than the full cost to a heavy goods vehicle and applies to buses constructed for the carriage of more than 16 passengers. The Erskine toll is a flat rate toll which is payable by all chargeable vehicles.

Respondents to the consultation paper showed almost unanimous support for PSVs to be exempted from tolls. This is in line with the Executive’s policy of encouraging greater use of public transport and would be in line with The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004. It would also support the tolled bridges’ objective of addressing demand, where necessary.

There was some debate amongst respondents as to how “public service vehicle” should be defined, and which types of vehicle should or should not be included. The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004 specifically define PSVs by reference to the Public Passenger Vehicles Act 1981.

According to Scottish Transport Statistics No. 24: 2005 edition, there were 76,000 tolled bus crossings on the Forth Road Bridge and 49,000 on the Tay Road Bridge in 2004 which equates to £106,400 and £68,600 worth of tolls respectively. No separate count of different chargeable vehicle types is made at the Erskine Bridge as all chargeable vehicles pay the same amount. However we understand that bus traffic on the Erskine Bridge is relatively light.

Summary

There is strong support for exempting PSVs from bridge tolls in Scotland, consistent with the Executive’s policy of encouraging greater use of public transport. The Road User Charging (Exemption from Charges) (Scotland) Regulations 2004 provide a possible framework for defining and exempting public service vehicles.

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4.2.5 Exemptions for Multiple Occupancy Vehicles

Multiple occupancy vehicles (MOVs) are more efficient users of road space than single occupancy vehicles (SOVs) and support the tolled bridges objectives of addressing demand, where appropriate. The consultation paper asked whether this efficiency should be encouraged by tolling tariffs.

Most respondents commented in favour of tolling incentives for MOVs, particularly on bridges with congestion problems. Although most people who expressed an opinion favoured a tolling exemption for MOVs, some respondents said that a tolling discount would be more appropriate. The possibility of discounts for MOVs is discussed below.

MOV exemptions could offer bridge authorities some flexibility for managing demand when and where this is required by encouraging travellers to car-share. Such an exemption could apply around the clock or only at certain times of day according to the particular circumstances at each bridge. It would require “MOV” to be defined e.g. by reference to the number, and possibly type, of passenger e.g. would a vehicle carrying a driver plus one young child qualify as a MOV? Such a definition at a national level would reduce options for bridge authorities and would not be flexible to long term changes in driver behaviour (e.g. car-sharing schemes). Any such exemption would also need to be considered alongside technological developments – e.g. as FETA is introducing electronic tolling, the detection of vehicle occupancy rates would be important if such an exemption were applied other than through manually-operated toll booths, where verifying occupancy may still take a substantial time. Emerging technology may be able to detect vehicle occupancy automatically.

Tolling exemptions for MOVs could have an impact on tolling revenues and the need to strike an effective balance between managing demand and ensuring efficient use of the associated road space. On the other hand, funding of the ongoing maintenance requirements of the bridge could have an adverse effect on toll prices for chargeable vehicles. However, consultees noted that vehicle occupancy rates at Forth at peak times are currently very low – around 70% of traffic is SOV traffic – so a very large change would be required before this loss of income would be a major issue.

Summary

There is broad support for tolling incentives for MOVs where congestion is an issue. However, a national exemption does not offer flexibility for bridge authorities in managing demand in terms of numbers of vehicles and times of journeys.

4.3 Tolling Discounts

Like exemptions, tolling discounts may be given for a number of reasons; a balance has to be struck between the provision of discounts, revenue requirements and managing demand for road space. As with exemptions, the use of discounts has administrative implications for toll operators, who must find ways of verifying eligibility that are efficient and effective.

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4.3.1 Multiple Crossing Discounts

The legislation for each bridge allows the operator to enter into an agreement with drivers to “compound in advance” for the payment of tolls. Effectively, this allows for the sale of books of vouchers which may be tendered in lieu of tolls. At Erskine and Forth these vouchers are sold at a discounted price. Any Erskine Bridge user can purchase books of vouchers at a 10% discount, while at the Forth Road Bridge car and light goods vehicle drivers can purchase books of vouchers at a 10% discount, and heavy goods vehicles at a 35% discount. TRBJB sells books of vouchers at full cost although has recently raised the possibility of offering a 10% discount. The Board has agreed to await the outcome of this Review before taking this matter further. None of the bridges currently offer any multi-crossing discount incentive for buses or other PSVs.

Historically, vouchers were designed to speed traffic through the toll plaza, by avoiding the need for drivers to have or find the cash required, and to minimise cash handling by toll collectors. Cash handling and banking processes are also reduced centrally.

About a third of respondents who commented on multiple crossing discount vouchers during the consultation were in favour of them. However, a larger number were opposed to this type of discount in principle. Very few respondents perceived the availability of a discount to be an inducement to travel over the bridges, but several were concerned that the discount offered an “inappropriate” reward for certain types of crossing.

The availability of vouchers at a reduced price is generally seen as a “frequent user discount” and, arguably, might be considered to be a reward for travelling by car. This is contrary to the Executive’s aspirational aim of stabilising traffic volumes at 2001 levels by 2021. More specifically, the current system of offering discounts does nothing to support our aim of striking an effective balance between managing demand, ensuring efficient use of road space and funding ongoing maintenance requirements. However, it could be argued that these discounts provide some support to our aim of addressing access.

In offering a multi-journey discount there is an acknowledged trade-off between promoting the efficient flow of traffic and the wider policy implications of continuing to offer financial rewards to drivers. However, the efficiency gains which might once have flowed from the use of vouchers no longer apply at congested travel times. This is particularly true at the Forth Road Bridge where the governing factor over traffic flows is the physical layout of the toll plaza and bridge deck, and of the surrounding road network, rather than the time taken to collect tolls at the booths. At such times, the need to promote more sustainable travel modes and patterns – such as a move towards increased public transport use or multiple occupancy journeys – is more pressing. The possibility of discounts for promoting efficient means of payment is discussed further below.

Summary

The multi-crossing (or frequent user) discount is contrary to our aim of striking an effective balance between addressing access, managing demand (if required), ensuring efficient use of road space, and funding ongoing maintenance, and is out of line with wider objectives for traffic stabilisation.
4.3.2 Multiple occupancy vehicle discounts

Most respondents commented in favour of tolling incentives for MOVs, particularly on bridges with congestion problems. Although most people who expressed an opinion favoured a tolling exemption for MOVs, one in five felt that a tolling discount would be more appropriate.

Like a MOV exemption, MOV discounts could be used to encourage drivers to share their car with at least one passenger and could therefore help to reduce traffic volumes and congestion on tolled bridges, if required. This would be consistent with our aim of managing demand and ensuring efficient use of road space. Discounts may offer greater potential to spread the flow of MOV traffic across the day by increasing or decreasing the size of the discount at different times, instead of the ‘all or nothing’ approach offered by exemptions.

The rate of any MOV discount should reflect local circumstances such as the timing and duration of any periods of congestion.

Summary

Discounts for MOVs could help bridge authorities to better manage traffic demand in terms of the number and timing of vehicle crossings, where this is required, as well as offering bridge authorities greater scope for managing demand than an exemption, as the amount of the financial incentive can be subject to greater variation.

4.3.3 Other Discounts

Some consultees suggested that future developments in electronic tolling, which would require drivers to have a tag installed in their vehicle, would enjoy greater take-up if a discount were offered to those participating.

FETA is already undertaking work to redesign the toll plaza at the Forth Road Bridge and to introduce automatic electronic tolling or charging. TRBJB is also planning to replace the current out-dated tolling equipment at Tay Road Bridge, and is considering introducing a system which will allow automatic charging. Under electronic tolling, the operator can build on the benefits of reduced cash handling and speedier passage for vehicles through the use of prioritised approaches and toll lanes for tag users, while potentially promoting the benefits of more sustainable forms of travel, such as MOV trips.

A move towards electronic charging may require incentives such as reduced charges to encourage drivers to participate in such a scheme. Such discounts may be justified by the potential for central efficiencies in terms of cash handling, accounting and administration costs. However, extreme care needs to be taken to ensure that such discounts do not reward drivers for taking extra trips and that there is no adverse impact on transport and traffic objectives; care is also needed to ensure that substantial take-up of such a scheme, with many bridge users paying at a discounted rate, does not reduce revenues to the extent that longer-term investment plans are undermined.
Summary

There is scope for improving traffic flows and tolling efficiency through the use of electronic payment systems. Discounted toll charges could be used as an effective incentive to encourage travellers to use such schemes by, for example, fitting electronic tags to their vehicles. However, this would need to be balanced against traffic outcomes and the need to ensure extra trips are not rewarded.

4.4 The relationship between damage caused by vehicles and toll levels

All three of Scotland’s tolled bridges are now around or approaching 40 years old. They were designed at a time when traffic levels and projected growth were significantly lower than now, and when vehicle types were also very different, particularly in terms of overall weight.

In recent years all of the bridges have required significant investment in maintenance and strengthening to cope with these loads. There has recently been major work at Erskine to strengthen the bridge and refurbish the expansion joints, TRBJB is embarking on a three year programme to replace the main bridge bearings, and FETA is carrying out testing of the main suspension cables to assess damage and corrosion. (The results of this testing emerged after the completion of the Review). FETA has also stated that it will need to resurface the main carriageways of the Forth Road Bridge every nine years, as opposed to the twenty-five year replacement cycle originally envisaged.

Much of this work is caused by wear and tear on the bridges from all forms of traffic. However, bridge operators have stated that the increased weight of HGVs – now at a maximum of 44 tonnes – and the design of such vehicles, particularly those using “super-single” high pressure tyres, have had a significant effect on bridge surfacing and structures. Research carried out by the Transport Research Laboratory\(^{29}\) shows that increased traffic levels, higher axle loads generally, and the increasing use of super-single tyres all have a significant effect on road surfacing. In particular, that report states that the wide-based single tyre is more damaging to the road than other wheel types, particularly where the road pavement is relatively thin. This is the case at the Forth Road Bridge, where the road construction is bonded to the steel bridge deck.

The bridge operators and others believe that there is a strong case for setting toll levels for HGVs which better reflect this impact on the bridge structure and surfacing, and the present tolling structures at Forth and Tay Road Bridges already charge a higher toll for HGV traffic. At Erskine Bridge all chargeable vehicles currently pay the same toll of 60 pence per crossing.

The consultation paper asked whether respondents believed that tolls should be set at a level which reflected the relative impact of each vehicle type. The majority of responses to this part of the consultation supported the principle of tolls reflecting the cost of wear and tear. However, those against higher tolls for heavier vehicles said that this issue could not be viewed in isolation from others. In particular, a number of respondents pointed out the

importance of efficient freight transport to the national economy. Scottish Ministers recognise this and work has started for the first time on the development of a national freight strategy for Scotland. The aims of that strategy are to ensure that appropriate consideration of the key economic role of the freight and logistics sector is undertaken as local, regional and national transport policies develop and to ensure that the role of the sector is given a higher profile within decision making organisations.

Respondents also made the point that too large an increase or differential between different vehicle types, could be counter-productive, in terms of the overall economy and/or by diverting heavy traffic onto other, possibly less suitable routes. Some respondents also noted that HGV operators already pay significantly more in terms of VED and fuel duties than car drivers, and one respondent felt that this issue would be better considered in the context of the proposed move to a national road pricing system.

The broad range of opinions expressed in response to the consultation on this issue reflects the various factors to be considered in setting toll levels generally, and in deciding whether those tolls should relate, at least in part to the damage caused by individual vehicles.

**Summary**

It is necessary to strike a balance between ensuring the free transport of goods and services, to support the economy of Scotland, and asking bridge users to pay an appropriate contribution to the costs of maintaining the tolled facility. The present tolling structures at Forth and Tay Road Bridges go some way towards this, while the flat rate toll at Erskine takes no account of the impact of different vehicle types and loads. Overall there is probably a case for tolling structures including higher tariffs for HGV traffic, to reflect their impacts. However, tolls should not be set at so high a level as to discourage economic activity, or redirect significant heavy traffic to less appropriate routes.

**4.5 Current and Future Developments**

This section highlights current and future developments which will influence decisions about tolling – technological developments, and moves to standardise vehicle classification.

**4.5.1 Modernising tolling operations**

Tolling operations at Scotland’s bridges have been in place for many years and are generally in need of modernisation in terms of access for drivers, payment methods and systems, and back office systems such as IT.

**Erskine**

Tolling operations at the Erskine Bridge have not been upgraded for many years. Work carried out in parallel to Phase Two of the Tolled Bridges Review indicates that there is now a pressing need to upgrade the toll plaza area and the toll collection systems. In addition, significant refurbishment work is required on the tolling operations administration building. The total cost of this work has not been assessed in detail, but is likely to be significant – probably between £5m and £8m\(^{30}\), depending on the specification of the work undertaken.

\(^{30}\) Based on comparison with similar work at Forth
Forth

Work is currently progressing at the Forth Road Bridge to upgrade the toll plaza area, offer a range of payment options including cash, electronic tags and smart cards, and upgrade IT systems to include electronic billing. The system, which is due to go live in Spring 2006, will be compliant with the requirements of the EU Directive on interoperability, will allow for future application of differential toll levels throughout the day (if this is taken forward), and will be compatible with that in use on the M6 Toll Road and the Dartford Crossing. Cars can be fitted with an OBU or electronic tag, and charges may be paid by telephone, internet, or credit card. Although the current manual system will be replaced, the option to pay in cash will remain, and bridge users will also be able to pay using smart card technology. FETA is investing some £7.3m in this project.

Tay

Similarly, TRBJB has engaged consultants to advise on the modernisation of the IT and payment systems at the Tay Bridge. In addition, the Board is considering what benefits can be gained, in terms of easing congestion in Dundee city centre, by moving the toll plaza from the north end of the Bridge, where space is restricted, to the south end. This scheme is highlighted at section 2.2.2 above.

The work being done at the Forth and Tay Road Bridges is being taken forward against the background of developing European legislation and charging systems elsewhere in the UK and abroad. Both FETA and TRBJB have regular discussions between themselves and with other toll operators to share technical knowledge, monitor developments in charging systems and technology and to agree, where possible, how systems at each bridge (or in the wider context, tolled tunnels and roads) can be better aligned.

The systems being examined by both FETA and TRBJB involve the use of electronic tags or OBUs, and the benefits of the scheme depend on the uptake of these units. Indications are that the take up of tags is greater when a driver makes the journey once a week or more. Offering benefits to encourage the take up of tags, as long as this is compatible with wider policies, may be necessary. Consideration also needs to be taken of driver behaviour in relation to the technology selected. For example, the loss of the manual payments if payment is made automatically through a tag system (i.e. drivers no longer having to stop at the toll booth to hand over money physically) may mean that, even with an increased charge, drivers’ behaviour and route choice is affected less. Bridge authorities will need to balance effective means of payment and customer service with transport objectives.

DIRECTS

A research project, known as DIRECTS (Demonstration of Interoperable, Road user, End to end Charging and Telematics Systems) is currently being run in Leeds. DIRECTS is looking at an electronic method for charging vehicles using busy roads. Temporary equipment has been set up on a small network of roads in Leeds, and volunteers have small electronic charging units in their vehicles to test the system.

DIRECTS was set up to find out how various designs would work in real conditions and to provide guidance on which are best. It will make sure that equipment from different suppliers is compatible so that drivers only need one unit in their vehicles to pay local charges in different parts of the country. DIRECTS will also check that all parts of the system – from the electronic unit in the vehicle to the billing and administration centre – can work together.

To foster interoperability between electronic road user charging systems in the UK (and potentially those outside) the Department for Transport has produced OMISS (Open Minimum Interoperability Specification Suite) and this contains DfT’s view of the current best practice for interoperable road user charging systems using 5.8 GHz microwave technology. However, it does not provide a complete set of road user charging system or interoperability requirements. Representatives from FETA and the TRBJB have been involved in the DIRECTS project, to ensure that any relevant benefits for the Forth and Tay tolling operations can be taken on board.

Summary

Both FETA and TRBJB are moving towards the introduction of modern electronic tolling systems which offer a choice of payment methods to drivers and offer scope for better traffic management and improved flows at the toll booths, as well as reducing the costs and resources involved in handling cash transactions. The systems being introduced or investigated are compliant with EU requirements on interoperability of electronic toll systems, and will allow recognition of On Board Units (OBUs) from other charging schemes. At Erskine Bridge, tolling systems are currently manual only, but will have to be updated in the near future if tolling remains on the bridge.

4.5.2 Standardising vehicle classifications

At present, different vehicle classifications are used on each of the three tolled bridges in Scotland. On the Erskine Bridge all chargeable vehicles pay the same rate. On the Forth Road Bridge there are a number of classifications of vehicles and these are broadly in line with those on the Tay Road Bridge.

Classification of vehicles is necessary if different levels of tolls are to be applied to different classes of vehicles. Generally speaking, cars and light vehicles tend to be one classification; buses another and heavy vehicles another. There may also be separate classes for any of these vehicles towing trailers. There are a number of ways that classifications can be identified, such as by weight, height, length and number of axles. Within the UK, there are quite wide variations in classification on tolled structures.

As bridge authorities move to introduce new electronic tolling systems, the technological challenge is to identify classes of vehicles automatically, so as to speed their progress through the toll plazas. In addition, operators are looking at how systems could automatically identify how many occupants a vehicle is carrying.

The majority of respondents to the consultation were strongly in favour of a common system of classification. They also expressed the view that classification should be common not only across Scotland, but across the UK and indeed across Europe. A common system of classification (at any level) could improve analysis and comparison of traffic data. Work is
being undertaken at a European level to improve interoperability of tolling systems; this includes a move towards common classification.

In May 2004, the European Directive on the Interoperability of Electronic Road Toll Systems in the Community 32 came into effect. The Directive lays down the conditions necessary to ensure the interoperability of electronic road toll systems in the European Community and this could include tolling systems on bridges. It does not apply where tolling systems have no electronic collection means; where such systems do not require the fitment of on board units (OBUs); and it does not apply to small, strictly local systems where the cost of compliance with the Directive is disproportional to the benefits.

The Directive requires that where Member States have toll systems, they shall endeavour to ensure that 50% of all traffic flow at each toll station can use the electronic systems by 1 January 2007. It also sets up a European Electronic Toll Service (EETS) which will allow travellers to access a single service through all operators.

The Directive also states that all new electronic systems introduced after 1 January 2007 shall use one or more of the following technologies: global positioning systems (GPS); mobile communications (GSM-GPRS); and/or 5.8 GHz microwave technology. It recommends that new systems brought into service after the adoption of the Directive should use the first two of those three technologies. This is because microwave technology usually requires costly roadside infrastructure to support its operation whereas both satellite positioning and mobile communications technologies do not require such infrastructure. However this is less of an issue where charges are applied for crossing a particular structure.

However, while a common classification seems desirable there are a number of significant problems associated with it. Firstly, respondents to the consultation saw the detection of classification criteria as potentially problematic when using electronic recognition equipment. The identification of some classifications would be easier to implement than others. Secondly, standardisation of these classifications would require amending the relevant legislation which sets out the classifications used on each bridge.

Another way to move towards standardisation would be to replace the existing tolling regimes with RUC schemes. As discussed at section 2.3 above, this provides a consistent approach to charging across Scotland, and there would be a common set of classifications of vehicles under the Road User Charging (Classes of Motor Vehicles) (Scotland) Regulations 2003. However, this may not guarantee standardisation as these are classes from which an individual charging authority can choose. An authority may adopt some classes but need not adopt all.

The benefits of standardisation could be simplification and ease of management over the longer term. For users of the bridges, this could mean being treated the same at each bridge, and would aid understanding as there would only be one classification system for all, rather than different for each. However, this equality of treatment across the bridges need not extend to paying the same amount at each bridge to cross.

32 Directive 2004/52/EC
Summary

Standardisation of vehicles classifications can bring significant benefits to both bridge users and tolling operators. With the move towards electronic tolling, there is a real opportunity to drive operational costs down, by implementing technology to a common standard across all three bridges. While there are currently difficulties in agreeing a common set of classifications, and in designing systems which can automatically detect and distinguish between different vehicle types, these issues are being addressed on a UK and Europe-wide basis, e.g. through the introduction of the European Directive on the Interoperability of Electronic Road Toll Systems in the Community.
5. Conclusion

The Review has been led by the Executive’s Road Pricing Team in Transport Group, but has involved a large number of colleagues throughout the Executive, and in other organisations across Scotland. In particular, the Team is grateful to officials and staff from the Forth Estuary Transport Authority, Tay Road Bridge Joint Board and APCOA Parking (UK) Ltd, and to officials from a number of local authorities in the vicinity of the tolled bridges, for their assistance and input to the review process. Colleagues from the Office of the Solicitor to the Scottish Executive, and the Analytical Services, Air, Noise and Nuisance, Enterprise Networks, Transport Strategy and Legislation, and Trunk Road Network Management Divisions of the Executive have also made major contributions, along with consultants from Scott Wilson Scotland Ltd and MVA. Finally, the Team is grateful to those organisations and individuals who responded to the consultation paper published in April 2005.
APPENDIX A

Tolled Bridges Review – Phase Two Consultation

Analysis of Responses
1. EXECUTIVE SUMMARY

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2.2 Scope of Consultation Exercise
2.3 The Consultation Process
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1. Executive Summary

1.1 Exemptions
Tackling the issue of Blue Badge verification is believed by many respondents to go beyond the scope of the Tolled Bridges Review, but a number of measures could assist in alleviating the problems outlined in the Consultation Paper. Although MACS suggest that the way in which Blue Badge exemptions are described requires consideration, some respondents are not convinced about the justification for these exemptions.

There is almost unanimous support for exemptions for public transport vehicles and general support for exemptions for HM Coastguard vehicles, consistent with Road User Charging (Exemption from Charges) (Scotland) Regulations 2004. However most respondents believe tolling exemptions for commercial breakdown services is not justified in terms of direct benefits to traffic on Scotland’s tolled bridges.

Most respondents support tolling incentives for multiple occupancy vehicles, particularly on bridges with congestion problems, although some believe a discount is more appropriate than an exemption.

1.2 Discount Schemes
Most respondents believe public transport vehicles should be exempt rather than discounted. Many respondents support multiple crossing discount vouchers for all bridge users but a larger proportion believe this sort of discount offers inappropriate rewards, even though few respondents said it induces additional traffic. Many respondents would prefer to see discounts being used to encourage ‘positive’ behaviours such as multiple occupancy and efficient means of payment.

1.3 Classification of Vehicles
Most respondents agree that a common vehicle classification system is sensible but ideally should also apply beyond Scotland. Difficulties in defining and detecting the relevant criteria are anticipated by some respondents.

1.4 Reducing Traffic and Congestion on Tolled Bridges
Most respondents are in favour of tolls as a tool for encouraging modal shift. Some prefer a ‘carrot’ approach to a ‘stick’, others think both are necessary. Although around half of respondents believe increased tolls at peak periods would have some degree of success, such a measure received limited support. The lack of suitable public transport alternatives and the limited flexibility of many commuters were the main reasons for opposing this idea. Most said that better public transport alternatives are key to success in achieving modal shift.

1.5 Tolls Reflecting the Cost of Wear and Tear
Respondents were almost equally divided on this issue. Those against higher tolls for heavier vehicles said it is necessary to consider a much wider range of issues when setting toll levels and that the interrelationship of these issues is complex. Some respondents are concerned that too large an increase could be counterproductive and could have other unfavourable consequences beyond the bridges themselves. Others commented that as the number and impact of heavy vehicles varies from bridge to
bridge a common approach is not appropriate. Several respondents said that, ideally, the relevant criteria should be electronically detectable.

1.6 Procedure for Changing Tolls or Charges
Most respondents believe the PLI process to be an overly lengthy and unjustifiably expensive way of changing tolls or charges, although a small number think it is appropriate where public concern is significant. One in five respondents support the PLI process because they believe it provides a means of essential public consultation and accountability. However, some of these respondents said that they would be prepared to consider an alternative procedure if it balances democracy and efficient decision-making.

Most respondents believe the Scottish Ministers should approve changes to tolls or charges.

Most respondents either do not feel that tolls should be subject to increases linked to an inflation index or have concerns about the practicalities of such changes. Inflation is generally seen as just one of many factors that should be taken into account when periodically reviewing tolling prices.

1.7 Other Comments relevant to Tolling Strategy
Many respondents believe that measures to tackle some of the issues raised by the tolling questions (particularly: encouraging MOVs, exemptions for breakdown and recovery services, peak period tolling increases, and charges for heavy vehicles) should be part of a wider Road User Charging strategy and that it is inappropriate to operate such differential charges only at tolled bridges, particularly when not all of the bridges are congested and as effects may be experienced beyond the bridges themselves.

A significant number of respondents voiced objections to the continuation of tolling at one or more of Scotland’s tolled bridges.

Mandatory signage of free alternatives to the tolled Erskine Bridge route is expected by some respondents to present significant problems on completion of the M74 extension.

Several respondents said that definitions of ‘public service vehicle’ and ‘multi occupancy vehicle’ are needed.

1.8 Scottish Executive/National Transport Authority Option
Respondents associated both advantages and disadvantages with this option. Tensions between local and strategic issues, and between unique circumstances and a desire for consistency were evident.

1.9 Regional Transport Partnerships Option
Respondents were almost equally divided on whether powers and functions of current bridge authorities should be transferred to RTPs in future. Uncertainty was expressed in particular at whether operational and maintenance functions would sit well with the
RTPs’ strategic function. The location of the Tay Road Bridge on the boundary between two RTPs presents particular challenges for this option.

Few respondents were in favour of de-trunking the Erskine Bridge so that it could become the responsibility of the RTP for the West of Scotland.

1.10 Forth Estuary Transport Authority Model
Most respondents saw mainly advantages in the FETA model for management of the Forth Road Bridge but fewer were convinced about the suitability of this model for the Tay Road Bridge, mainly because of its lack of available funding for transport initiatives, or for the Erskine Bridge, mainly because demand management measures are not required there. Around 30% of respondents do not think the FETA model is appropriate for any of Scotland’s three tolled bridges.

1.11 Tay Road Bridge Joint Board Model
There was no support for the TRBJB management model for the Forth Road Bridge or the Erskine Bridge, and only a small number of respondents believe it to be the best model for the Tay Road Bridge. Just over half of the respondents said that this model is too restricted in its remit and powers with regards to application of tolling revenue although noted that its present financial commitments would limit its ability to provide for wider transportation initiatives.

1.12 Single Tolled Bridges Authority Option
Many respondents believe this option to have merit. However most respondents appeared to associate a Single Tolled Bridge Authority (STBA) with the Scottish Executive or National Transport Agency management option. As a result most comments were identical to those made in response to that option and the powers and functions suggested for a STBA were largely those that would be expected under the central SE/NTA management option.

1.13 Other Management Options
Four additional management options were suggested: a combined Forth and Tay management body, private sector management, a greater role for stakeholders within the chosen management structure, and Ministerial Chairmanship of the FETA model.

1.14 General Future Management Comments
The main concern of many respondents is that the chosen body/bodies be publicly accountable and work in partnership with all stakeholders to ensure local, regional and national issues and plans are identified and integrated.

Some respondents believe that bridge maintenance costs and demand management policies and strategies need not necessarily be the responsibility of the same management body.

Options requiring the direct involvement of Local Authorities in the west of Scotland in the management of the Erskine Bridge lack support by those Local Authorities.
2. **Introduction**

2.1 **Background to the Tolled Bridges Review Phase Two Consultation**

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." ¹

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." ²

The first phase of the review³ examined the existing tolling structures, including the impact of tolls and the way in which potential changes to tolls could help achieve the Scottish Executive's environmental and economic objectives of reducing pollution and congestion. The information gathered from Phase One was considered by Ministers in November 2004 and helped to identify a range of issues to be taken forward during Phase Two.

Some of the issues to be covered in Phase Two have been taken forward internally or in consultation with relevant experts and professionals. However, there are a number of broad issues which are of wider concern and interest and the purpose of the Phase Two consultation was to set out these issues and seek views on the options for future management arrangements in relation to tolled bridges in Scotland.

The findings from this consultation will inform the Scottish Executive’s Report on Phase Two of the Tolled Bridges Review, which is expected to be completed later this summer.

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¹ A Partnership for a Better Scotland, Scottish Executive, May 2003
http://www.scotland.gov.uk/library5/government/pfbs-00.asp

² Scotland’s Transport Future, Scottish Executive, June 2004
http://www.scottishexecutive.gov.uk/library5/transport/stfwp-00.asp

³ Tolled Bridges Review: Phase One Report (29 October 2004)
http://www.scotland.gov.uk/library5/enterprise/tobr-00.asp
2.2 Scope of Consultation Exercise

The Tolled Bridges Review Phase Two Consultation Paper posed twenty specific questions organised around two central themes:

- factors to be considered when setting tolling levels (questions 1 to 12)
- future management arrangements (questions 13 to 20)

The twenty questions are reproduced at Annex 5.1

The Consultation Paper sought stakeholders’ views on the presumption that tolling will continue at each of Scotland’s three tolled bridges. This approach did not mean that a decision had already been taken to retain tolls – it has not. As an evidence-based policy decision on whether to retain or remove tolls can only be made on the basis of understanding all the implications of all the options, informing this policy decision is the aim of the two-phased Tolled Bridges Review.

Consequences of removing and retaining tolls at each bridge were considered in some detail in Phase One and, as a result, a decision to end the discredited Skye Bridge tolling regime was taken. The further information gathered during Phase Two will enable the Scottish Ministers to decide the most appropriate course or courses of action for the remaining three tolled bridges. This will include full consideration of the consequences of retaining and removing their tolls.

2.3 The Consultation Process

The Tolled Bridges Review Phase Two consultation period began on 8 April 2005 when the Consultation Paper was published on the Scottish Executive’s Consultation web site. On the same day, a copy of the Consultation Paper was distributed to around one hundred key stakeholders and all Members of the Scottish Parliament. Both the web and paper versions of the Consultation Paper contained an invitation to participate in the consultation process from the (then) Minister for Transport. A copy of the invitation to participate is provided at Appendix 5.2 and the distribution list is provided at Appendix 5.3.

The consultation period ended on 8 July 2005, although responses received up to 25 July 2005 have been included in this Report.

Members of the Executive’s Tolled Bridges Review team also held a series of meetings with key stakeholders during June 2005 to discuss the twenty questions contained in the Consultation Paper. Invitees included: Local Authority transport officials, members of the Forth Estuary Transport Authority and the Tay Road Bridge Joint Board, transport providers, lobby groups and representative organisations.

2.4 Respondents’ Profile

Sixty-three written responses were received. Thirty-seven responses were received from the original distribution list, and a further twenty-six responses were received.
from other organisations and individuals. The thirty-seven respondents are indicated by boldface text at Annex 5.3 and details of the additional twenty-six respondents are provided at Annex 5.4.

Each of the sixty-three respondents has been assigned to one of twelve broad stakeholder categories. The number of responses received from each of these twelve categories is indicated in the table below.

<table>
<thead>
<tr>
<th>Stakeholder Category</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>18</td>
</tr>
<tr>
<td>LA</td>
<td>11</td>
</tr>
<tr>
<td>Rep. Org.</td>
<td>7</td>
</tr>
<tr>
<td>Lobby Group</td>
<td>7</td>
</tr>
<tr>
<td>OPB</td>
<td>4</td>
</tr>
<tr>
<td>Business</td>
<td>4</td>
</tr>
<tr>
<td>MSP</td>
<td>3</td>
</tr>
<tr>
<td>Transport Provider</td>
<td>2</td>
</tr>
<tr>
<td>RTP</td>
<td>2</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>2</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
</tr>
</tbody>
</table>

Key to abbreviations:

LA:  Local Authority  
Rep. Org.:  Representative Organisation  
OPB:  Other Public Body  
Business:  Business Sector  
MSP:  Member of the Scottish Parliament  
RTP:  Regional Transport Partnership

Most stakeholders who attended one of the consultation meetings also provided independent written responses, which count among the sixty-three responses received.

### 2.5 Public Access to Written Responses

All respondents were asked whether their written responses could be published in accordance with Scottish Executive practice. Copies of all responses have been placed in the Scottish Executive Library, K Spur, Saughton House, Broomhouse Drive, Edinburgh, EH11 3XD for public access. Copies of non-confidential responses can be viewed by visiting the library or can also be provided by post. Charges for photocopies are made on a cost-recovery basis. To request copies by post, enquire about charges or make an appointment to view responses at the library, contact the Library by telephone on 0131 244 4565 or by email at SELibrary@scotland.gsi.gov.uk.
Copies of non-confidential responses can be viewed have also been posted on the Scottish Executive consultation web pages at: http://www.scotland.gov.uk/consultations.

2.6  Presentation of the Data

2.6.1  Qualification
It is important to note that the findings of this Report are specific to the Tolled Bridges Review Phase Two Consultation exercise and do not purport to reflect the weight, range or diversity of views within the population as a whole as respondents have not been representatively sampled.

2.6.2  Evidence Included in the Findings
Most written responses were organised around the twenty questions posed in the Consultation Paper. Some responses to a particular question were more relevant to other questions and others were provided in a free style. As far as possible, comments were grouped under the most relevant question or questions and analysed accordingly.

Comments made at meetings but not reflected in written responses have also been incorporated into this report. However, as Chatham House rules were observed during those meetings, the verbal comments are not attributed.

Respondents suggested a large number of specific changes and ideas. In addition, many respondents offered views, and reasons for those views, on matters beyond those raised in the Consultation Paper, particularly in relation to tolling strategy. It is not possible to detail the entire range and diversity of comments made in the written responses and meetings in a summary document such as this report. The intention of this report is to provide a general summary of the themes of the consultation and an overview of the evidence. Accordingly, this report should not be interpreted as a “compendium” of every point made in response to the Consultation Paper.

However, all of the original responses to the consultation, containing all of the detailed individual points made in relation to each question are available to, and will be considered by, those involved in drafting the report on Phase Two of the Tolled Bridges Review.

2.6.3  Type of Information Received
The analysis process involved the gathering of both quantitative and qualitative material provided in response to the consultation exercise. Although there were some straightforward closed - “yes” / “no” - questions, most information received was of a qualitative nature.

2.6.3.1  Written vs. Verbal Comments
Comments made at meetings but not reflected in written responses have been incorporated into this report but have not been included in counts of overall responses to the twenty questions, nor in counts of responses to quantitative questions.
2.6.3.2 Quantitative Evidence
For each quantitative question, responses were counted and results are presented. Quantitative counts include only those responses that unequivocally stated the respondent’s view in writing. As not all respondents addressed closed questions directly and as some evaluated issues without committing to a particular opinion, the number of quantitative responses to a particular question is generally less than the total number of responses received to that question.

2.6.3.3 Qualitative Evidence
Questions 13 to 19 invited respondents to consider several different management options/models for the Scottish tolled bridges. As respondents were not asked to indicate which option/model they preferred for a particular bridge or particular bridges, such quantitative information is not presented. By inviting respondents to comment on each option/model, it was hoped that a fuller range of advantages and disadvantages would be identified.

For each qualitative question in the Consultation Paper, themes were identified from respondents’ comments and relevant responses were grouped into each of these themes. This allowed the range and diversity of opinions to be identified. Although this method also allowed the number of respondents who expressed a particular view to be calculated, it is considered inappropriate to present this data quantitatively for the following reasons:

- The qualitative questions allowed respondents scope in where, and how, their views were expressed, making it necessary to assess which comment related to which question. Suggestions would not necessarily be ‘counted’ where they were expressed, making it impossible to count accurately the number of responses that mentioned each issue at each question.

- Some responses represented the views of a number of people and in most cases it was not possible to count the number of people represented. For example:

  - some responses from Lobby Groups and Representative Organisations reflected the results of further consultation among their membership
  - one Local Councillor submission was made on behalf of a group of Councillors

- Although some responses explicitly did or did not relate to all three bridges, the relevance of some responses to one or more particular bridge was not always evident.

- Respondents to this consultation cannot be assumed to be representative of their sector.

For these reasons, there is no specific reference to the number of respondents making specific qualitative comments, although broad patterns are highlighted.

2.6.3.4 Summary of Counts Undertaken
The counts presented in this report are therefore restricted to three types:
the number of written responses received to the consultation paper as a whole

for each of the twenty questions – the number of respondents who gave a written response

for each of the quantitative questions – the number of respondents who expressed an unequivocal opinion in writing

In each case, the count reflects the number of responses by stakeholder type.

2.7 Factual Accuracy

The views presented in this analysis have not been vetted in any way for factual accuracy. The opinions and comments submitted to the consultation may be based on fact or may, indeed, be based on what respondents perceive to be accurate from their perspective, but which others may interpret differently. The report may, therefore, contain analysis of responses which may be factually inaccurate, but are objective in terms of their reflection of respondents’ perceptions.

2.8 Structure of the Report

This report presents the findings of the Tolled Bridges Review Phase Two Consultation. The findings are grouped into two main sections which reflect the two main themes of the consultation paper: Tolling Strategy (Chapter 3) and Management Options (Chapter 4).

Both chapters begin with details of the responses received for each of the relevant questions before presenting the findings. Both chapters end with a final ‘Other Comments’ section where additional themes and issues not covered by the twenty questions are highlighted.

An Executive Summary of the findings is provided at Chapter 1.
3. Towards a Strategy for Tolled Bridges

3.1 Number of Written Responses Received

The twelve Tolling Strategy questions each elicited between 32 and 41 responses, with an average of 36.3 responses per question.

Questions concerned with tolling measures to reduce traffic and congestion on tolled bridges (questions 7 and 8) elicited the highest number of responses, with an average of 40.5 responses each.

Question 9, which is concerned with tolls reflecting the cost of wear and tear, elicited the second highest number of responses (39).

Questions 5 (multiple crossing discount vouchers) and 6 (common vehicle classification system) each elicited 36 response, and questions concerned with exemptions (questions 1 to 4) elicited an average of 35.3 responses each.

Questions concerned with procedures for changing tolls or charges (questions 10 to 12) elicited an average of 34.3 responses each.

3.2 Findings

3.2.1 Exemptions

*Question 1: Do you think that the system for verifying Blue Badge exemptions should be changed? If so, can you suggest what these changes should be?*

The number of responses received to question 1 by respondent type is as follows:
<table>
<thead>
<tr>
<th>Question 1</th>
<th>No. of Responses</th>
<th>% of comments received</th>
<th>&quot;yes&quot; to change</th>
<th>&quot;no&quot; to change</th>
</tr>
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<tbody>
<tr>
<td>Business Sector</td>
<td>3</td>
<td>9%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>6</td>
<td>18%</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>27%</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>18%</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Provider</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
<td><strong>100%</strong></td>
<td><strong>19</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

Many respondents said that the need for and methods of verification are symptoms of a wider problem concerning Blue Badge Scheme administration and believed that such matters go beyond the scope of the Tolled Bridges Review.

Most respondents felt that the solution to Blue Badge verification problems lies in emerging technology, e.g. having Blue Badges with a readable barcode, rather than changes to current verification procedures by tolling operators, although some respondents anticipated problems with electronic tolling since Blue Badges are registered to individuals rather than vehicles.

Justification for tolling exemptions for Blue Badge holders was questioned by a small number of respondents who understand the Blue Badge scheme to have been designed to provide car-parking benefits, rather than exemptions from transportation costs, for qualifying travellers.

Not withstanding technological problems and solutions, the following changes to current arrangements were also suggested:

- Adopt a consistent system at all three tolled bridges
- Adopt the system developed for Edinburgh’s Road User Charge Scheme
- Adopt the same audit procedure that is used for other exempt vehicles
- Stop verification checks at the tolled bridges and accept the risk of misuse
- Facilitate pre-registration by making vouchers more widely available
- Blue Badge exemptions should operate in the same way as concessionary travel
- Provide dedicated tollbooths
- Develop a central register of Blue Badge holders

MACS, the Scottish Ministers’ statutory advisors on the incorporation of the interests of disabled people into Scottish transport policy, consider that Blue Badge exemption vouchers should be known as ‘exemption vouchers’ rather than ‘disabled vouchers’.
Tackling the issue of Blue Badge verification is believed by many respondents to go beyond the scope of the Tolled Bridges Review but a number of short and longer term measures could assist in alleviating the problems outlined in the Consultation Paper. MACS suggest that the way in which Blue Badge exemptions are described requires consideration. Some respondents are not convinced about the justification for these exemptions.

**Question 2: Do you consider that the exemptions for emergency service vehicles should remain limited to the Ambulance, Fire and Police Services, or should we consider extending this to cover other key services?**

The number of responses received to question 2 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 2</th>
<th>No. of Responses</th>
<th>% of comments received</th>
<th>&quot;yes&quot; to extension</th>
<th>&quot;no&quot; to extension</th>
</tr>
</thead>
<tbody>
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<td>Business Sector</td>
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<td>9%</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other Public Body</td>
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<td>1</td>
<td>1</td>
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<tr>
<td>Lobby group</td>
<td>4</td>
<td>11%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>4</td>
<td>11%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>26%</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>8</td>
<td>23%</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>100%</strong></td>
<td><strong>26</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Three-quarters of quantitative responses to question 2 consider that exemptions should be extended to other key services.

The most frequent suggestion was to make tolling exemptions consistent with Road User Charging (Exemption from Charges) (Scotland) Regulations 2004 or to exempt Coastguard vehicles, consistent with these Regulations. Several respondents suggested exemptions for Doctors on call and slightly fewer suggested exemptions for Bomb Disposal Unit vehicles.

“… it makes perfect sense to extend this exemption to include HM Coastguard registered vehicles. HM Coastguard is already a recognised ‘999’ service and particularly relevant to the bridges because of the proximity to busy commercial and leisure waters.”

- Lobby Group

Other suggestions included: the Royal Military Police vehicles, vehicles used by volunteer drivers who provide a free patient transport service, and other non-emergency vehicles used by medical services such as health visitors and the blood transfusion service. One respondent also supported local discretionary powers, as has benefited the Princess Louise Scottish Hospital for Limbless Sailors and Soldiers.
Most responses were indicative of an association between tolling exemption and faster bridge crossing time. Some respondents, however, perceived difficulties for toll collectors with the necessary ‘on-sight’ recognition of non-blue light vehicles and in distinguishing ‘emergency’ trips by such vehicles from trips for other purposes.

There is general support for consistency with Road User Charging (Exemption from Charges) (Scotland) Regulations 2004, which would permit exemptions for Coastguard vehicles, and some lesser support for exemptions for non-emergency medical trips. Most responses suggest there is a natural relationship between tolling exemption and faster bridge crossing time, which may not necessarily be the case for vehicles without a blue light.

**Question 3: Vehicles used by bridge authorities to respond to breakdowns on each bridge are exempt. Do you see a case for extending exemptions to the AA, RAC or other commercial breakdown services responding to breakdowns on the road network other than where this is the responsibility of the bridge authorities?**

The number of responses received to question 3 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 3</th>
<th>No. of Responses</th>
<th>% of comments received</th>
<th>&quot;yes&quot; to exemption</th>
<th>&quot;no&quot; to exemption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>3</td>
<td>9%</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lobby group</td>
<td>4</td>
<td>12%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>4</td>
<td>12%</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>27%</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>7</td>
<td>21%</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
<td><strong>100%</strong></td>
<td><strong>7</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

Most respondents were not in favour of extending exemptions to commercial breakdown services responding to breakdowns on the road network. The reasons given for this opinion were mainly:

- Adequacy of the service provided by bridge support vehicles
- Commercial organisations recover their costs from customers
- Difficulties distinguishing recovery trips from trips for other purposes

“(we) see no reason to exempt commercial breakdown services from paying tolls as they recover their costs from the motorist. They will not attend to the breakdown any quicker if they are exempt from paying a toll.”

- Bridge Authority

Those in favour of exemptions for breakdown services gave the following main reasons:
- Consistency with actual/planned exemptions in UK congestion charging schemes
- Breakdown services assist in the relief of congestion on the road network and provide an emergency service for drivers to the benefit of all road users
- Breakdowns on the wider road network can cause delays on the bridges

“Rescue and recovery services make a vital contribution to road safety and congestion management in providing swift management of roadside incidents thus improving traffic flow for public transport, commercial vehicles and private cars and positively impacting on the economy in helping to deliver more reliable journey times.”

- Business Sector

Some of those in favour of extending exemptions to commercial breakdown service providers further suggested that such an exemption should be limited to certified rescue and recovery operators. However, the respondent who expressed no opinion was concerned only that any extension be fair to all commercial breakdown operators.

| The predominant view is that tolling exemptions for commercial breakdown service providers is not justified in terms of direct benefits to traffic on the toll bridges and that the benefits experienced by road users more generally as a result of these services, although reflected in some UK congestion charging schemes, should not be reflected in a bridge tolling strategy. |

**Question 4: Should public transport vehicles and multiple occupancy vehicles be considered for exemption from bridge tolls?**

The number of responses received to question 4 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 4</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>4</td>
<td>10%</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>6</td>
<td>15%</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>13%</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>23%</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Individual</td>
<td>7</td>
<td>18%</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Transport Provider</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

All 40 respondents answered or commented on exemptions for public transport vehicles and 37 respondents answered or commented on exemptions for multiple occupancy vehicles (MOVs).
Exemptions for Public Transport Vehicles: Quantitative results were as follows:

<table>
<thead>
<tr>
<th></th>
<th>&quot;yes&quot; to exemption</th>
<th>&quot;no&quot; to exemption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Transport Provider</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>

Almost all respondents to this part of question 4 supported exemptions for public transport vehicles, consistent with exemptions under Road User Charging (Exemption from Charges) (Scotland) Regulations 2004.

“Ministers have already made a policy decision to exempt buses under road user charging regulations; the justification for this applies to the toll bridges as much as to urban charging schemes.”

- Representative Organisation

A number of respondents said they supported exemptions for public transport vehicles as this would be wholly in line with attempts to encourage modal shift and sustainable travel, to assist traffic management and stabilisation, and to reduce congestion.

However, several respondents felt that a clear definition of ‘public transport vehicle’ is required, with various, mostly conflicting, suggestions for inclusions and exclusions being made, including: tour and private hire coaches, buses and minibuses, and taxis.

One individual supported exemptions for public transport vehicles only if savings are passed on to passengers.

Exemptions for Multiple Occupancy Vehicles: Quantitative results were as follows:

<table>
<thead>
<tr>
<th></th>
<th>&quot;yes&quot; to exemption</th>
<th>&quot;no&quot; to exemption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Individual</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Transport Provider</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>
Most respondents to this part of question 4 were firmly in favour of a tolling regime that favours MOVs over single occupancy vehicles (SOVs). While twelve of these respondents supported relief by exemption, others – including some of those unequivocally opposed to exemptions for MOVs - said that a discounted toll for MOVs would be more appropriate.

Several respondents in favour of a discount rather than an exemption for MOVs suggested that discounts should vary according to the time of day and should reflect the individual traffic management needs of each bridge. One respondent, however, felt that discounts would have to be significant to be effective in encouraging car sharing. Opinions on discounts are discussed further under question 5.

“Exempting MOVs could place an undue burden on SOVs – many of which will be business. It may be worth noting that many vehicles which are classified as SOVs on passing through the tolls may have been MOVs when travelling in the opposite direction.”

- Business Sector

Six respondents were firmly against tolling regimes that favour MOVs. These, and other, respondents said that congestion management is outwith current tolling remits and that incentives to encourage MOVs should be part of a wider (local, regional or national) congestion charging strategy, not part of a tolling regime.

“The issue of Multi Occupancy Vehicles brings up the fundamental question – what is the purpose of the bridge toll? The purpose of the Tay Road Bridge toll is to cover the cost of maintaining the bridge, it is not congestion charging.”

- Local Authority

Several respondents felt that a clear definition of ‘multiple occupancy’ is required. One respondent was concerned that verification procedures could result in delays at the tolling plaza, and others have concerns about the detection of occupancy under electronic tolling.

There is widespread support for exemptions for public service vehicles, in line with Road User Charging (Exemption from Charges) (Scotland) Regulations 2004. Most responses were in favour of tolling advantages for MOVs, although many respondents felt that a discount is more appropriate than an exemption, and some felt the level of discount should reflect the particular circumstances of each bridge. Other respondents, however, believe that measures that encourage MOVs should belong to a wider congestion management strategy and should not be reflected in bridge tolling tariffs. Some respondents say that clear definitions of ‘public transport vehicle’ and ‘multiple occupancy vehicle’ are required.
3.2.2 Discount Schemes

Question 5: Should tolled bridges offer multiple crossing discount vouchers (MCDVs) to all bridge users, or particular classes of users such as buses or multiple occupancy vehicles? If so, why should this be?

The number of responses received to question 5 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 5</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>6</td>
<td>17%</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>25%</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Individual</td>
<td>7</td>
<td>19%</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Transport Provider</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Quantitative results were as follows:

<table>
<thead>
<tr>
<th>Question 5</th>
<th>MCDVs for all users</th>
<th>MCDVs for buses/MOVs</th>
<th>&quot;No&quot; to MCDVs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridge Authority</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Local Authority</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Transport Provider</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>7</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

30% of the quantitative responses to question 5 were in favour of general availability of MCDVs for the benefit of all types of frequent bridge users.

“It is normal practice for high users of any commodity to benefit from a discount.”

- Lobby Group

21% of the quantitative responses to question 5 were in favour of allowing MCDVs to MOVs only, or additionally to public transport vehicles if not fully exempt.
The remainder of the quantitative responses to question 5 did not support MCDVs for any class of bridge user, although most of these respondents said that public transport vehicles should be exempt. The main reason given for opposing MCDVs was a concern that MCDVs inappropriately reward certain types of crossing e.g. single occupancy vehicles travelling at peak periods. However there was little belief that the availability of these vouchers induce such crossings nor that their withdrawal would make much impact on levels of congestion.

Other Functions of Discounts: Most respondents who did not support discounts for multiple crossings were in favour of discounts to reward multiple-occupancy. There was also support for the use of discounts to reward efficient methods of toll payment, both now and under any electronic tolling system, with perceived benefits including reduced administration costs and faster passage through tolling plazas.

“In part, the principle of appearing to give discounted travel sends the wrong message. However, the use of vouchers actually permits bridge administrations to lower collection costs ... enabling them to pass on the cost-savings to customers as a form of encouragement to them to adopt that means of payment.”

- Individual response

One respondent suggested discounts could also be used as a tool to encourage ‘greener’ forms of transportation.

Most respondents believe public transport vehicles should be exempt rather than discounted. A significant number of respondents support multiple crossing discount vouchers for all bridge users but a larger proportion believe this sort of discount offers inappropriate rewards, though few respondents said it induces additional traffic. Many respondents would prefer to see discounts being used to encourage ‘positive’ behaviours such as multiple occupancy and efficient means of payment.

3.2.3 Classification of Vehicles

**Question 6: What are your views on a common vehicle classification system for levying tolls at all Scotland's tolled bridges?**

The number of responses received to question 6 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 6</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>3</td>
<td>8%</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>6</td>
<td>17%</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>25%</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>17%</td>
</tr>
</tbody>
</table>
There were no objections to this suggestion and the majority of respondents were strongly in favour. A common vehicle classification system is seen by most respondents as an essential element of interoperability and accordingly many urged that classification be common not just across Scotland, but across the UK and Europe. A common system was also said to provide greater consistency for travellers, although some respondents noted that a common classification system need not translate into a common tolling tariff for Scotland. Two respondents suggested a common classification system would improve the analysis and comparison of traffic data.

Although well supported, the establishment of a common classification system and the detection of the relevant criteria at tolling plazas and under electronic tolling were, however, seen as potentially problematic.

| Region                          | No. of Responses | % of comments received | "yes" | "no"
|---------------------------------|------------------|------------------------|-------|------
| Business Sector                 | 3                | 7%                     |       |      |
| Bridge Authority                | 2                | 5%                     | 2     |      |
| Other Public Body               | 2                | 5%                     | 1     |      |
| Lobby group                     | 6                | 15%                    | 4     |      |
| Representative Organisation     | 5                | 12%                    | 2     |      |
| Research Body                   | 1                | 2%                     | 1     |      |
| Local Authority                 | 9                | 22%                    | 6     |      |
| Local Councillor                | 2                | 5%                     |       |      |
| Individual                      | 7                | 17%                    | 6     |      |
| Regional Transport Partnership  | 2                | 5%                     | 1     |      |
| Transport Provider              | 2                | 5%                     | 2     |      |
| **Total**                       | **41**           | **100%**               | **25**| **0**|

**Principle:** Most respondents were generally in favour of encouraging modal shift on all tolled bridges. However a significant number felt that this should be considered on a bridge-by-bridge basis as levels of congestion, which was seen as the only...
justification for such a measure, vary. This was especially regarded as unjustified at Erskine Bridge.

A small number of respondents felt it would be inappropriate to encourage modal shift by means of tariffs at the tolled bridges as a matter of principle. For these respondents, modal shift aspirations are part of a much wider issue and should be considered in the context of National or Regional Road User Charging, rather than the narrower framework of bridge tolls.

“This question cannot be answered by reference to the bridges alone. In principle we agree with the points made but achieving these objectives are much more complex than indicated. Overall travel behaviour is more volatile and changeable than implied by a narrow representation of mode choice change within a single corridor ... Sustainable changes will only be achieved if “push” and “pull” measures are planned to work together and likely impacts will be over networks and lifestyles rather than narrow corridors and modes.”

- Representative Organisation

**Method:** The most effective means of encouraging modal shift on the tolled bridges was broadly agreed to be more frequent, capacious, reliable and attractively priced public transport alternatives, which are better tailored to the origins, destinations and shift patterns of bridge users and which offer seamless interchange facilities.

“Many users of the Forth Road Bridge are not travelling to central Edinburgh, but to surrounding areas such as West Lothian and Midlothian. For these users to be able to switch to public transport, a quality service must run to those areas.”

- Lobby Group

A broad range of methods for encouraging modal shift were suggested, including:

- A tolling differential or discount for multiple occupancy vehicles
- A higher toll for single occupancy vehicles at peak periods
- A tolling differential by time of day
- Directional tolling to target peak flows
- Introduction or extension of priority lane(s) and/or dedicated tollbooth(s) for efficient road users
- Introduction or expansion of Park & Ride/Choose facilities
- Better real-time information about bridge delays with pointers to alternative modes of transportation
- A strong lead in promoting car-sharing and more flexible working patterns to minimise trips on congested routes during peak periods

Many respondents were concerned that penalties for single occupancy vehicles travelling at peak periods could have unfavourable consequences for non-tolled routes and would be unfair to the very many drivers who have no reasonable alternative to their current time and mode of journey.
“Don’t just penalise the lone driver thinking they have an alternative ... My wife works shifts so cannot be guaranteed a straight timetable etc. Assuming her shift is when a bus and train is actually running, the bus/train is more expensive than the car and to go by train would mean 2 buses, then a train, then two buses at the other end, adding an extra 1½ hours to her daily journey. To go all the way by bus would add at least 2½ hours to her journey, and both (options) may also involve sitting about at either end as she may not get to town at exactly the time she is due to start. She drives against the flow of traffic so does not add to the congestion.”

- Individual Response

Most respondents are in favour of tolls as a tool for encouraging modal shift, but some believe it should be part of a wider congestion management strategy. Better public transport alternatives are widely held to be key to success but many respondents urged against penalties for travellers who are unable to shift either their mode or time of travel because of inflexible or irregular work obligations.

**Question 8: Do you think that raising tolls at peak times would result in less congestion at those times?**

The number of responses received to question 8 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 8</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>4</td>
<td>10%</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>6</td>
<td>15%</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>13%</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>23%</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Individual</td>
<td>7</td>
<td>18%</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Transport Provider</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Qualitative results are not provided for question 8 as only a very small number of responses were wholly unqualified.

Around half of respondents felt this measure would have some degree of success, with several respondents persuaded by the impact of London’s Congestion Charging Scheme. However, only a small number of respondents indicated unqualified support for such an initiative.

Other respondents to question 8 either rejected this option, did not express a view on the impact of increased tolls at peak times or qualified their view on the basis that such a measure would be unfair to the very many bridge users who have no or limited...
flexibility in their mode or time of travel because of the location of their place of work and/or inelastic or irregular shift patterns.

“Many drivers have little choice in the manner or timing of their crossings, often confined to travelling at peak time in order to conform with working hours or other time limited constraints. They may not have the option of transferring their journey to public transport for a variety of reasons - whether that is because public transport does not offer them access to their destination, takes longer than the car, is not available at the outset or is unsuitable to them or their need(s).”

- Lobby Group

There was therefore a strong view that this measure should only be considered in tandem with provision of the types of public transport improvements outlined in responses to question 7. Again, several respondents felt peak increases should be considered on a bridge-by-bridge basis as levels of congestion differ.

A number of respondents felt that a peak increase would have to be substantial to make a significant impact on congestion levels and concern was expressed that this could simply lead to spreading or moving of peak periods or displacement of congestion onto untolled routes.

One respondent suggested that the effectiveness of peak increases would be enhanced if coupled with a reduction or elimination of tolling charges during off-peak periods.

Most respondents are in favour of tolls as a tool for encouraging modal shift. Some preferred a ‘carrot’ approach to a ‘stick’, others think both approaches are necessary. Although around half of respondents believe increased tolls at peak periods would have some degree of success, such a measure received limited support. The lack of suitable public transport alternatives and the limited flexibility of many commuters were the main reasons for opposing this idea. Most said that better public transport alternatives are key to success.

3.2.5 Tolls Reflecting the Cost of Wear and Tear

<table>
<thead>
<tr>
<th>Question 9</th>
<th>No. of Responses</th>
<th>% of comments received</th>
<th>&quot;yes&quot;</th>
<th>&quot;no&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>4</td>
<td>10%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>5%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>6</td>
<td>15%</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>13%</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
Principle: The majority of quantitative responses to question 9 supported the principle of tolls reflecting the cost of wear and tear.

The qualitative responses included a significant number of respondents who were either firmly against this suggestion, or felt strongly that this issue should not be considered in isolation from others, such as the benefits that the haulage industry brings to the Scottish economy and the preference for a smaller number of heavy goods vehicles than a larger number of light goods vehicles in terms of traffic stabilisation and congestion. Others commented that as the number, proportion and impact of heavy vehicles varies from bridge to bridge a common approach or charge is not appropriate. Clear tolling objectives were therefore seen by many as key to an informed response to question 9.

“At one level it is logical for tolls to reflect the maintenance costs ... However, closer consideration reveals that the types of vehicle which would incur the highest charges are those vehicles which for other reasons might warrant the opposite. Conversely the type of use which represents the least efficient use of a bridge in transport, economic and environmental terms (the regular single occupant vehicle) incurs the lowest charge.”

- Local Authority response.

A few respondents commented that a toll set according to the principle suggested by question 9 must necessarily be arbitrary as a toll that accurately reflected cost of impact would be prohibitive to heavy vehicles. Displacement of traffic to uncharged roads was seen as a particular risk if tolls were to increase significantly for particular classes of vehicles.

One respondent further suggested that impact on bridge maintenance costs should instead be considered in the context of a National Road Pricing scheme and another felt that revenues are already collected in other ways for maintenance of the road network, with heavy vehicles paying a higher rate of Vehicle Excise Duty than other vehicles, and that costs associated with toll bridge maintenance should not be separately charged.

Several respondents discussed question 9 only in relation to public transport vehicles and repeated their views expressed in response to question 4 that public transport vehicles should be exempt from tolls as they are efficient users of road space.

Methods: Around one-quarter of respondents to question 9 commented on how tolls should reflect the impacts of different vehicle types on the need for maintenance, repair and strengthening programmes and made the following suggestions:
Toll based on axle loading
Toll based on number of axles and height of vehicle above its first axle
A graduated toll based on gross carrying capacity
The highest tolls should reflect the most damaging forms of suspension

Several respondents said that, ideally, the relevant criteria should be electronically detectable.

Respondents were almost equally divided on this issue. Those against higher tolls for heavier vehicles said it is necessary to consider a much wider range of issues when setting toll levels and believe that the interrelationship of these issues is complex. Some respondents are concerned that too large an increase could be counterproductive and could have other unfavourable consequences beyond the bridges themselves. Others commented that as the number and impact of heavy vehicles varies from bridge to bridge a common approach is not appropriate. Several respondents said that, ideally, the relevant criteria should be electronically detectable.

3.2.6 Procedure for Changing Tolls or Charges

<table>
<thead>
<tr>
<th>Question 10</th>
<th>No. of Responses</th>
<th>% of comments received</th>
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<th>&quot;no&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>2</td>
<td>6%</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>5</td>
<td>16%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>4</td>
<td>13%</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>28%</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>19%</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>100%</strong></td>
<td><strong>6</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

80% of the quantitative responses to question 10 do not think that the current process involving PLIs is appropriate for making changes to tolls or charges to meet the costs of managing, maintaining and operating a bridge. These, and other, respondents are mainly concerned about the time and cost involved in dealing with even single objections.

"The current arrangements result in the iniquitous position where a single objector can delay the introduction of necessary toll increases at great
expense to the public purse. A much quicker and more flexible approach is required so that tolls can be easily changed to meet changing circumstances but all still within a regulatory framework.”

- Representative Organisation

Several respondents commented that there are many other charges for public services, such as parking charges, which can be varied without the need to conduct a PLI.

Around a third of respondents believe that changes to meet the cost of maintenance and repairs in particular should not be subject to the current PLI process and some suggested that increases for those purposes should be provided for in the Tolling Orders or should be determined by the Bridge Authorities, possibly with approval of the Scottish Ministers.

Around one-fifth of respondents support the current process. Those in favour said it provides a means of essential public consultation and accountability, although some suggested that this should be assured through an alternative, less complex but still independent, process. And although not in favour of the current PLI process, two respondents felt that PLIs are appropriate where public concern is significant.

Most respondents believe the PLI process to be an overly lengthy and unjustifiably expensive way of changing tolls or charges, although a small number think it is appropriate where public concern is significant. One in five respondents support the process as it provides a means of essential public consultation and accountability. However, some of these respondents said that they would be prepared to consider an alternative procedure which balances democracy and efficient decision-making.

**Question 11: Do you consider that final approval by Scottish Ministers is an essential safeguard for toll/charge payers or do you think the final decision is a matter for the management authority for the bridge?**

The number of responses received to question 11 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 11</th>
<th>No. of Responses</th>
<th>% of comments received</th>
<th>SMs</th>
<th>BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
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<td>8%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>6</td>
<td>17%</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>14%</td>
<td>5</td>
<td></td>
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<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>25%</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>17%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Transport Provider</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
<td><strong>100%</strong></td>
<td><strong>23</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>
The majority of quantitative responses to question 11 said that final approval should lie with the Scottish Ministers.

A small number of respondents said that final approval should lie with the Bridge Authorities but that appeals to the Scottish Ministers should be allowed. One respondent suggested that decisions should be made by the Bridge Authorities but should be ratified by the Scottish Ministers, and that Ministerial powers to refuse ratification should be restricted.

Other suggestions about who should have final approval of changes to tolls were:

- The Scottish Executive
- The Bridge Authorities in consultation with the Scottish Executive
- An independent body with less complex procedures than a PLI
- Public referendum

**Most respondents believe that the Scottish Ministers should have final approval.**

**Question 12: Do you consider all tolls should be subject to increases linked to an inflation index?**

The number of responses received to question 12 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 12</th>
<th>No. of Responses</th>
<th>% of comments received</th>
<th>“yes”</th>
<th>“no”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>3</td>
<td>9%</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>5</td>
<td>14%</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>14%</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>26%</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>17%</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Transport Provider</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>100%</strong></td>
<td><strong>13</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Despite quantitative results, most responses were either not in favour of this suggestion or had concerns about the practicalities of inflationary increases.

"Increases should relate to the cost of maintenance and repair programmes, (also in the case of FETA any transportation initiatives) and be subject to regular review (Annual/Biannual) and take account of several factors including traffic growth, inflation index and likely cost of future maintenance. Any increases must be practical in terms of coinage."

- Representative Organisation

28
Many respondents felt that the level of tolls should be linked to operational needs, which may not necessarily justify tolling increases, and/or policy objectives. The frequency of such changes was also a common cause of concern as were consequential coinage problems. However two respondents recognised that both these problems would be ameliorated by electronic tolling.

| Most respondents either do not feel that tolls should be subject to increases linked to an inflation index or have concerns about the practicalities of such changes. Inflation is generally seen as just one of many factors that should be taken into account when periodically reviewing tolling prices. |

### 3.3 Objections to Tolling

A significant number of respondents volunteered objections to the continuation of tolling at one or more of Scotland’s three tolled bridges. Some of these respondents commented that questions 1 to 12 are relevant only if tolling is to continue and their responses comprised arguments, some very detailed, in support of ending tolls at one or more of the bridges. These comments have been summarised at Annex 5.5. Most of these respondents, however, commented on some or all of questions 1 to 12 in the event that tolling will continue, but asked that their fundamental objections to tolling at one or more of the three bridges be noted.

As mentioned in section 2.2, questions in the Consultation Paper have been asked on the presumption that tolling will continue at each of Scotland’s three tolled bridges. This approach did not mean that a decision had already been taken to retain tolls – it has not. Although beyond the scope of the Phase Two Consultation exercise, the implications of discontinuing tolling at each of the three bridges is being considered as part of the second phase of the Tolled Bridges Review.

All of the original responses to the consultation, containing all of the detailed individual points made in relation to each question are available to, and will be considered by, those involved in preparing the report on Phase Two of the Tolled Bridges Review.

| A significant number of respondents voiced objections to the continuation of tolling at one or more of Scotland’s Tolled Bridges. |

### 3.4 Other Comments Received

Free alternatives to tolled routes must be signed as the primary route, even where the tolled route is more direct. Several respondents anticipate that the requirement to sign alternative routes to the Erskine Bridge will cause significant problems for longer-distance traffic when the M74 extension is built.

A small number of respondents were concerned about the impact on tolling revenues available for maintenance costs should financial incentives such as exemptions for efficient road users be successful or toll increases prove prohibitive.

A small number of respondents suggested that payment of tolls through the purchase of crossing permits, similar to the operation of season tickets, should be considered as it is an efficient way of collecting tolling revenue.
One respondent expressed concern about the effect of a given vehicle qualifying for more than one discount e.g. for multiple occupancy and for travelling outside the peak period which could result from a more complex tolling strategy.

One respondent questioned the legal differences between exemptions and 100% discounts, particularly with regard to the continuation and variation of tolls.

| Mandatory signage of free alternatives to the tolled Erskine Bridge route could present significant problems in completion of the M74 extension. The effect of various tolling options on tolling revenues is of concern to some respondents, particularly with respect to funding maintenance programmes. Season tickets for tolled bridges are considered by some respondents to be an efficient way to collect tolling revenue. |

4. Future Management Options

4.1 Number of Written Responses Received

![Number of Responses per Question](image)

The five specific management options posed in questions 13, 14, 16, 17 and 18 each elicited between 24 and 36 responses, with an average of 31.6 responses per question.

The Executive/National Transport Agency option generated the most responses (36), followed by: the Regional Transport Partnerships option (35 responses), the Single Tolled Bridges Authority option (33 responses), the Forth Estuary Transport Authority model (30 responses) and the Tay Road Bridge Joint Board model (24 responses).

Eight respondents commented on the form, powers and function of a Single Tolled Bridges Authority (question 19) and three respondents offered other options for the
future management of the tolled bridges (question 20). Twenty-eight respondents commented on de-trunking the Erskine Bridge (question 15).

4.2 Findings

4.2.1 Scottish Executive/National Transport Agency Option

<table>
<thead>
<tr>
<th>Question 13: What advantages and disadvantages do you see if any or all of the tolled bridges were to be managed by the Scottish Executive or the national transport agency?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 13</td>
</tr>
<tr>
<td>Business Sector</td>
</tr>
<tr>
<td>Bridge Authority</td>
</tr>
<tr>
<td>Other Public Body</td>
</tr>
<tr>
<td>Lobby group</td>
</tr>
<tr>
<td>Representative Organisation</td>
</tr>
<tr>
<td>Research Body</td>
</tr>
<tr>
<td>Local Authority</td>
</tr>
<tr>
<td>Local Councillor</td>
</tr>
<tr>
<td>Individual</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
</tr>
<tr>
<td>Transport Provider</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Of the 36 respondents, around one-third perceived only advantages, another one-third perceived only disadvantages and the other one-third perceived both advantages and disadvantages. Each of the following points was made to a greater or lesser extent for individual bridges. Quantitative data on a bridge-by-bridge basis is not provided as the applicability of certain comments to certain bridges was not always evident.

Perceived advantages were mainly:

- Recognition of the strategic role of Scotland’s tolled bridges
- Accountability at national level
- Promotion of “joined up” transport
- Development of a common set of policies and consistent implementation
- Consistency of charging
- Savings through efficiency and rationalisation
- Better forward planning through greater consistency and recognition of wider issues
- Opportunity to establish a central body for registering exemptions

Perceived disadvantages were mainly:
The local and strategic significance of each bridge is different
The unique circumstances of each bridge are not suitable for central management
Potential conflict with Regional Transport and Planning Partnership Authorities’ functions
Competition for funding, legislative and regulatory requirements
Operational management does not accord with the National Transport Authority’s remit as set out in the 2004 Transport White Paper
Disruption of existing management structures
Difficulties in sourcing the necessary specialist skills and knowledge

Loss of local voice/accountability in planning and decision-making in addressing the non-strategic nature of the majority of Tay Road Bridge traffic and its significant impact on Dundee City centre was seen as a particular disadvantage of this option.

A number of respondents who were expressly not in favour of this option commented on the appropriate role of the Scottish Executive/National Transport Agency with respect to the tolled bridges should another management option be chosen. Views ranged from responsibility for strategy, over-arching policy and guidance to responsibility for maintenance, with policies set at the local or regional level.

One respondent said that under this option there would be a need for transparent accounting of tolling revenues by the Executive/NTA, with bridge maintenance a priority.

Respondents associated both advantages and disadvantages with this option. Tensions between local and strategic issues, and between unique circumstances and a desire for consistency were evident.

### 4.2.2 Regional Transport Partnerships Option

**Question 14: Should we consider transferring some or all of the powers and functions of current bridge authorities to Regional Transport Partnerships (RTPs) in future?**

The number of responses received to question 14 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 14</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
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<td>3</td>
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</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>9</td>
<td>26%</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>17%</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Transport Provider</td>
<td>2</td>
<td>6%</td>
</tr>
</tbody>
</table>
Although question 14 is a closed question, quantitative data is not presented as most responses were heavily qualified and the applicability of many responses to certain bridges was not always evident.

Just under half of question 14 respondents are receptive to future consideration of this option for one or more of the bridges, and the remainder are not in favour or are uncertain of the benefits.

The main comments from those who are receptive to this idea were:

- As major transport assets, the bridges could be an important constituent in the RTPs’ integrated regional transport strategies
- RTPs should have responsibility for transportation strategy and implementation of initiatives, with maintenance functions resting with the trunk road authority
- RTPs should evolve and gain additional functions as they develop and mature and should assume such powers and functions on a case-by-case basis

The main comments from those who are not receptive to this idea were:

- Funding provision could be put at risk by competing demands
- Bridge management should either be a national or local issue
- There is no obvious advantage in adding a third network to the existing trunk and local road networks
- RTPs will be concerned with high level policy & strategy, not operational matters
- RTPs lack the necessary specialist knowledge/experience to manage the bridges
- The current approach at Forth and Tay balances strategic and local trips well
- Existing authorities could co-operate fully with RTPs, possibly as members, without the need for transfer of powers
- Unnecessary involvement of Local Authorities with no direct transport interest in the bridge
- Disruption of existing management structures

The appropriateness of this option for the Tay Road Bridge was questioned in particular by a number of respondents who noted its position on the boundary between two RTPs. Specific concerns included consequences for the desired regional emphasis and difficulties in transferring powers. One suggestion was to have TRBJB as a non-voting member of both RTPs, another was to have TRBJB and the RTPs as mutual statutory consultees.

Respondents associated both advantages and disadvantages with this option and were almost equally divided on whether powers and functions of current bridge authorities should be transferred to RTPs in future. Uncertainty was expressed at whether operational and maintenance functions would sit well with the RTPs’ function. The location of the Tay Road Bridge on the boundary between two RTPs presents particular challenges for this option.

Question 15: As the Erskine Bridge functions as a key national and strategic link
for the West of Scotland as well as an important local link for communities north and south of the River Clyde, do you see any argument for de-trunking it so that it could become the responsibility of the RTP for the West of Scotland?

The number of responses received to question 15 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 15</th>
<th>No. of Responses</th>
<th>% of comments received</th>
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<td>2</td>
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<tr>
<td>Lobby group</td>
<td>5</td>
<td>18%</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>18%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>4%</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Local Authority</td>
<td>4</td>
<td>14%</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>4</td>
<td>14%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MSP</td>
<td>3</td>
<td>11%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>2</td>
<td>7%</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>28</strong></td>
<td><strong>100%</strong></td>
<td><strong>3</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Comments from those in favour included:

- As the majority of usage is for trips within the West of Scotland, de-trunking would assist better integration of regional transport and planning in the west

Comments from those not in favour included:

- Erskine Bridge can exercise a regional and local function with central control

Qualified comments included:

- Central management adds no value but a better alternative is not obvious
- A regional focus may conflict with Erskine Bridge’s national and strategic role
- Makes sense only if tolling is to continue and if consistency is a goal

Few respondents were in favour of de-trunking the Erskine Bridge so that it could become the responsibility of the RTP for the West of Scotland.
4.2.3 Forth Estuary Transport Authority (FETA) Model

**Question 16: Do you have any views on the advantages or disadvantages of the FETA model, for any or all of the bridges?**

The number of responses received to question 16 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 16</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>6</td>
<td>20%</td>
</tr>
<tr>
<td>Representative Orgn</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>8</td>
<td>27%</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Individual</td>
<td>4</td>
<td>13%</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Transport Provider</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Most respondents commented favourably on the FETA model, although around one-quarter of respondents discussed this model only in relation to the Forth Road Bridge.

Few respondents said that the FETA model is the best option for all three bridges. Those that did felt that its powers with respect to application of tolling revenue is a particular advantage.

Some respondents felt that the Tay Road Bridge’s direct relationship with Dundee City centre traffic meant that the FETA model would be advantageous. Others said that the FETA model is not suitable for the Tay Road Bridge in particular. Reasons were primarily the Joint Board’s lack of available funding for wider transportation initiatives and the more local nature of its issues, which are already the subject of a Local Transport Strategy.

A few respondents said that the FETA model is not suitable for the Erskine Bridge in particular. Reasons were primarily its trunk road status and the fact that it operates below its capacity which does not necessitate the need for wider transportation initiatives to help manage demand on the bridge.

Around 30% of respondents were not in favour of the FETA model for any of the bridges. Reasons given included:

- No advantage in the additional layer of transport planning to that at local and regional levels
- The FETA model has led to an excessive focus on enhanced road bridge capacity rather than on efforts to enhance modal shift and demand management
- The extent of FETA’s remit is necessary to ensure tolls/charges are set in an appropriate regional policy context but this remit should lie with the RTPs
Constituent councils often have conflicting views and actions depend on who holds the chair (also reported for TRBJB model)

Most respondents saw mainly advantages in the FETA model for the Forth Road Bridge but fewer were convinced about the suitability of this model for the Tay Road Bridge, mainly because of its lack of available funding for transport initiatives, or the Erskine Bridge, mainly because demand management measures are not required there. Around 30% of respondents do not think the FETA model is appropriate for any of Scotland’s three tolled bridges.

4.2.4 Tay Road Bridge Joint Board Model

**Question 17: Do you have any views on the advantages or disadvantages of the TRBJB model, for any or all of the bridges?**

The number of responses received to question 17 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 17</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>5</td>
<td>21%</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>4</td>
<td>17%</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>6</td>
<td>25%</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Individual</td>
<td>3</td>
<td>13%</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Just over half of the responses to question 17 said that the TRBJB model is too restricted in its remit and powers with regards to application of tolling revenue.

A small number of respondents felt the TRBJB model is the right model for the Tay Road Bridge. However there was no support for extending this model to either Erskine Bridge or the Forth Road Bridge.

There was no support for the TRBJB management model for the Forth Road Bridge or the Erskine Bridge, and only a small number of respondents believed it to be the best model for the Tay Road Bridge. Just over half of the respondents said that this model is too restricted in its remit and powers with regards to application of tolling revenue although noted that its present financial commitments would limit its ability to provide for wider transportation initiatives.
4.2.5 Single Tolled Bridges Authority Option

**Question 18:** Do you think there would be any merit in having a single body responsible for operating and managing all tolled bridges in Scotland?

The number of responses received to question 18 by respondent type is as follows:

<table>
<thead>
<tr>
<th>Question 18</th>
<th>No. of Responses</th>
<th>% of comments received</th>
<th>“yes”</th>
<th>“no”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>2</td>
<td>6%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other Public Body</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobby group</td>
<td>5</td>
<td>15%</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>5</td>
<td>15%</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Local Authority</td>
<td>8</td>
<td>24%</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Local Councillor</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>18%</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Regional Transport Partnership</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Transport Provider</td>
<td>1</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33</td>
<td><strong>100%</strong></td>
<td><strong>8</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

Despite quantitative results, there were slightly fewer respondents overall who were receptive to consideration of this option than those who were not. Most responses for and against this option duplicate comments made in response to question 13 (the Scottish Executive/National Transport Agency option) and it appears that a number of respondents did not envisage a body separate from the SE/NTA when responding to question 18. However, comments specific to a Single Tolled Bridges Authority option included:

- Creation of yet another body would add further confusion and fragmentation to public service provision in Scotland
- Has the disadvantages of the question 13 option without any of the advantages
- This option could work if its remit was operations and maintenance, with wider transportation powers resting with the RTP or Bridge Authority

One respondent questioned whether tolling income from each bridge would be ring-fenced or whether it would/should be available for cross-subsidisation.

Many respondents believed this option to have merit. However most respondents appeared to associate a Single Tolled Bridge Authority with the Scottish Executive or National Transport Agency option. As a result most comments were identical to those made in response to that question 13.
**Question 19: If you think all bridges should be run by one body what form, powers and functions should this body have?**

The number of responses to question 19 by respondent type in respect of the powers and functions of a single body other than the Scottish Executive/National Transport Agency is as follows:

<table>
<thead>
<tr>
<th>Question 19</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lobby group</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>Representative Organisation</td>
<td>1</td>
<td>13%</td>
</tr>
<tr>
<td>Research Body</td>
<td>1</td>
<td>13%</td>
</tr>
<tr>
<td>Local Authority</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>Individual</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The powers and functions suggested were:

- All powers needed to run a commercial operation
- Powers to manage the strategy and over-arching policy of tolled bridges
- Powers which support national objectives
- Powers to operate and manage the bridges as part of the national network
- Maintenance and essential development of the bridges

One respondent commented that any powers granted must be subject to the final authority of the Executive to protect users or particular groups of users.

The powers and functions suggested for a STBA were largely those that would be expected under the central SE/NTA management option.

### 4.2.6 Other Management Options

**Question 20: Are there any other management options that you would like to suggest?**

The number of responses by respondent type received to question 20 that are not covered by options posed in questions 13 to 19 is as follows:

<table>
<thead>
<tr>
<th>Question 20</th>
<th>No. of Responses</th>
<th>% of comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Sector</td>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td>Bridge Authority</td>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td>Lobby group</td>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The other management options suggested were:

- A combined Forth and Tay Board or Transport Authority, particularly if tolls end at Erskine
Experience outside the UK shows private companies can successfully run tolled infrastructure
Co-opt stakeholder representatives onto chosen management body

In addition, the appointment of the Minister for Transport as Chair of the FETA model was suggested at a consultation meeting.

Four additional management options were suggested: a combined Forth and Tay Board or Transport Authority, private sector management, a greater role for stakeholders within the chosen management structure, and Ministerial Chairmanship of the FETA model.

4.3 Other Comments Received
A number of respondents did not favour one future management option over another but emphasised the need for the chosen body or bodies to work in partnership with stakeholders of all types and at all levels, to be publicly accountable and to provide transparent information. Some respondents further commented that different models need not to be mutually exclusive e.g. it should be possible for the National Transport Agency to manage any or all of the tolled bridges with substantial RTP involvement.

A number of respondents said that there is a balance to be struck between the responsibility of the government to maintain the strategic transport network, and the application of tolling revenues. The weight of local, regional and strategic issues varies from bridge to bridge and respondents perceive advantages and disadvantages in all bridge management options as a result. Bridge maintenance costs and demand management policies and strategies are regarded by some respondents as separate matters which need not necessarily be the responsibility of the same management body.

All options requiring the direct involvement of Local Authorities in the west of Scotland in the management of the Erskine Bridge were felt to be unacceptable to a number of these particular respondents. For this reason, the FETA, TRBJB, and the RTP models were all felt by these respondents to be probably unachievable for Erskine Bridge.

The main concern of some respondents was that the chosen body/bodies be publicly accountable and work in partnership with all stakeholders to ensure local, regional and national issues and plans are identified and integrated. Bridge maintenance costs and demand management policies and strategies need not necessarily be the responsibility of the same management body. Options requiring the direct involvement of Local Authorities (LAs) in the west of Scotland in the management of the Erskine Bridge lack support by those LAs.
5. **Annexes**

5.1 **Invitation to Respond to the Consultation Paper**

Our Partnership Agreement made a commitment to carry out a review of all the tolled bridges in Scotland. The first phase of that review was completed in November of last year. The second phase will now look in more detail at the options for the future management and operation of the Forth Road Bridge, the Tay Road Bridge and the Erskine Bridge.

I am keen to receive your opinion on two major issues. The first is considering a tolling strategy - what objectives can we achieve or support through tolling? What factors should be considered when setting toll levels?

The other is the means by which those objectives can be achieved - what arrangements for managing our tolled bridges are appropriate?

I look forward to hearing your views on how Scotland's tolled bridges can be most effectively managed, and help make a real difference to the delivery of better transport in Scotland.

[Signature]

**Nicol Stephen MSP**
Minister for Transport
5.2 The Consultation Questions

Towards a Strategy for Tolled Bridges

Exemptions
QUESTION 1: Do you think that the system for verifying Blue Badge exemptions should be changed? If so, can you suggest what these changes should be?

QUESTION 2: Do you consider that the exemptions for emergency service vehicles should remain limited to the Ambulance, Fire and Police Services, or should we consider extending this to cover other key services?

QUESTION 3: Vehicles used by bridge authorities to respond to breakdowns on each bridge are exempt. Do you see a case for extending exemptions to the AA, RAC or other commercial breakdown services responding to breakdowns on the road network other than where this is the responsibility of the bridge authorities?

QUESTION 4: Should public transport vehicles and multiple occupancy vehicles be considered for exemption from bridge tolls?

Discounts
QUESTION 5: Should tolled bridges offer multiple crossing discount vouchers to all bridge users, or particular classes of users such as buses or multiple occupancy vehicles? If so, why should this be?

Common Vehicle Classification System
QUESTION 6: What are your views on a common vehicle classification system for levying tolls at all Scotland's tolled bridges?

Reducing Traffic and Congestion on Tolled Bridges
QUESTION 7: Should we encourage modal shift from single occupancy cars to public transport and multiple occupancy vehicles on all tolled bridges? If so, how might this be achieved?

QUESTION 8: Do you think that raising tolls at peak times would result in less congestion at those times?

Tolls Reflecting the Cost of Wear and Tear
QUESTION 9: Should tolls reflect the impacts of different vehicle types on the need for maintenance, repair and strengthening programmes? If so, do you have suggestions for how this might be done?

Procedure for Changing Tolls or Charges
QUESTION 10: Do you think the current process involving Public Local Inquiries is appropriate for making changes to tolls or charges to meet the costs of managing, maintaining and operating a bridge?
QUESTION 11: Do you consider that final approval by Scottish Ministers is an essential safeguard for toll/charge payers or do you think the final decision is a matter for the management authority for the bridge?

QUESTION 12: Do you consider all tolls should be subject to increases linked to an inflation index?

Management Options for the Scottish Tolled Bridges

Scottish Executive/National Transport Agency Option
QUESTION 13: What advantages and disadvantages do you see if any or all of the tolled bridges were to be managed by the Scottish Executive or the national transport agency?

Regional Transport Partnerships Option
QUESTION 14: Should we consider transferring some or all of the powers and functions of current bridge authorities to Regional Transport Partnerships in future?

QUESTION 15: As the Erskine Bridge functions both as a key national and strategic link for the West of Scotland as well as an important local link for communities north and south of the River Clyde, do you see any argument for de-trunking it so that it could become the responsibility of the RTP for the West of Scotland?

Forth Estuary Transport Authority Model
QUESTION 16: Do you have any views on the advantages or disadvantages of the FETA model, for any or all of the bridges?

Tay Road Bridge Joint Board Model
QUESTION 17: Do you have any views on the advantages or disadvantages of the TRBJB model, for any or all of the bridges?

Single Tolled Bridges Authority Option
QUESTION 18: Do you think there would be any merit in having a single body responsible for operating and managing all tolled bridges in Scotland?

QUESTION 19: If you think all bridges should be run by one body what form, powers and functions should this body have?

Other Management Options
QUESTION 20: Are there any other management options that you would like to suggest?
5.3 *Consultation Paper Distribution List*

Respondents are indicated in boldface type

All Members of the Scottish Parliament (MSPs)
Jackie Baillie MSP, Member for Dumbarton
Trish Godman MSP, Member for West Renfrewshire
Des McNulty MSP, Member for Clydebank and Milngavie
Amey Highways
Angus & City of Dundee Tourist Board

**Angus Council**
APCOA Parking (UK) Ltd

**Argyll & Bute Council**
Argyll, The Isles, Loch Lomond, Stirling & Trossachs
Association of Car Fleet Operators

**Association of Chief Police Officers in Scotland (ACPOS)**
Association of Commuter Transport
Association of Road Traffic Safety and Management

**Association of Transport Co-ordinating Officers**

**Automobile Association (AA)**
Bear Scotland Ltd
British International Freight Association
British Motorcycle Federation
British Roads Federation
British Vehicle Rental & Leasing Association

**CBI (Scotland)**
Centre for Scottish Public Policy
Centre for Transport Policy
CFOA (S) Intervention Business Stream

**Chartered Institute of Logistics and Transport**

**City of Edinburgh Council**
Clackmannanshire Council
Clydeport Operations Ltd
Commission for Integrated Transport
Communities Scotland

**Confederation of Passenger Transport (UK)**
Convention of Scottish Local Authorities (COSLA)
Cycling Scotland
Department for Transport
Disability Rights Commission
Disabled Drivers Association
Disabled Motorists Association

**Dunbartonshire Chamber of Commerce**
Dundee and Tayside Chamber of Commerce and Industry
Dundee City Council
Edinburgh & Lothians Tourist Board
Edinburgh Chamber of Commerce
Erskine Hospital
Faber Maunsell
Falkirk Council
Federation of Small Businesses
Fife Chamber of Commerce & Enterprise Limited
Fife Council
Fife Fire and Rescue Service
Forth Estuary Transport Authority (FETA)
Forth Ports PLC
Freight Transport Association
Glasgow Chamber of Commerce
Glasgow City Council
Greater Glasgow & Clyde Valley Tourist Board
Greenock Chamber of Commerce
Institute of Highways and Transportation
Institution of Civil Engineers
Institution of Highways & Transportation
Inverclyde Council
Lothian and Borders Fire Brigade
Maritime and Coastguard Agency
Midlothian Council
Mobility Access Committee for Scotland (MACS)
Mountain Rescue Committee of Scotland
MVA Ltd
NESTRANS
NHS Argyll & Clyde Board
NHS Fife Board
NHS Greater Glasgow Board
NHS Lothian Board
NHS Tayside Board
Perth & Kinross Council
Perthshire Chamber of Commerce
Perthshire Tourist Board
RAC plc
Renfrewshire Council
Road Haulage Association
Royal National Lifeboat Institution
Scottish Accessible Transport Alliance
Scottish Ambulance Service
Scottish Association for Public Transport
Scottish Chambers of Commerce
Scottish Enterprise
Scottish Environment Protection Agency (SEPA)
Scottish Trades Union Congress
Scottish Transport Studies Group
SESTRAN
Society of Chief Officers of Transportation in Scotland
SPOKES
Spokes Lothian UK
Stirling Council
Strathclyde Fire Brigade
Strathclyde Passenger Transport Executive (SPTA)
SUSTRANS
Tay Road Bridge Joint Board
Tayside Fire Brigade
TRANSform Scotland
Transport Initiatives Edinburgh (TIE)
Transport Planning Society
Transport Research Institute
TRL Scotland
VisitScotland
WEBS
West Dunbartonshire Council
West Lothian Council
WESTRANS
5.4 Additional Respondents

Civil Engineering Contractors Association
Councillor Jane Ann Liston, Fife Council
The Liberal Democrat Councillors in the East Area of Fife
Napier University School of Management
National Alliance Against Tolls (Scotland)
RAC Foundation
Scottish Council for Development and Industry
Stagecoach

Individuals:

Ronald Beasley
Steven Beaton
Gerald Cooper
Lyndsey Craik
Lynda Dobinson
Gilbert Forbes
Martin Gallagher
Alistair Graham
Peter Handley
R. Heyworth
Donald MacKintosh
Elizabeth McKerrall
Paul Maitland
Confidential x 5
5.5 Summary of Reasons Given in Support of Objections to Tolling

A significant number of respondents volunteered objections to the continuation of tolling at one or more of Scotland’s three tolled bridges. Although beyond the scope of the Tolled Bridges Review Phase Two consultation, a summary of these comments is provided in this section in the spirit of openness. The full text of all non-confidential responses can be seen as described in section 2.5 of this report.

Because of the qualitative nature of these comments, neither a count of their number nor a bridge-by-bridge analysis is provided for the reasons outlined at section 2.6.3.3 of this report. The factual accuracy of the comments summarised in this section is subject to the qualification at section 2.7.

Financial
- The original purpose of the tolls was to recover construction costs which have long since been met.
- Current accounting practice prevents repayment of the Erskine Bridge ‘book debt’ thus tolling is likely to continue indefinitely.
- The loss of tolling income would be partially offset by the discontinuation of administration costs and could easily be absorbed within the Executive’s budget.
- Bridge maintenance costs are already paid for by users through Vehicle Excise Duty and Fuel Duty and should be met from central government funds.

Function of Tolls
- Tolls are appropriate only for demand management purposes and this is currently unnecessary at all three tolled bridges.
- Many of the tolling strategy issues raised in the Consultation Paper would be resolved by abolition of the tolls.

Economy, Environment and Social Inclusion
- Tolls create an artificial barrier to trade, discourage the free movement of goods and labour, discriminate against users of certain parts of the road network and make already disadvantaged areas less competitive.
- Toll collection requires vehicles to make unnecessary stops which is damaging to the environment and to people’s health. It causes delays and prolongs periods of congestion, both of which can affect non-bridge traffic.
- Removal of tolls at Erskine Bridge would reduce congestion at other city centre crossings and encourage greater use of this under-utilised major transport asset.
- Tolls particularly affect the people of Fife who face a bridge toll at two entrances.
- Tolls are regressive charges which penalise those on low incomes.
- Tolls contravene Article 14 of the European Convention of Human Rights.
- Goods vehicles face the prospect of double charging with the introduction of Lorry Road User Charging.

Consistency
- Abolition of tolls would bring the three tolled bridges in line with all other bridges in Scotland, many of which are equally significant to the road network.
- As a trunk road, Erskine Bridge should be toll-free.
APPENDIX B – TECHNICAL ISSUES

Introduction

As part of the Phase Two analysis, detailed investigation has been undertaken by specialist transport consultants to model the effects of various scenarios under consideration for the tolled bridges in Scotland, using the Transport Model for Scotland (TMfS). TMfS is a multi-modal transport model capable of predicting the effects of transport interventions and able to provide a growth forecast for future years. Results from the modelling are indicative and focus on re-routing and changes of travel mode – so induced trips that may result from changes to the network are not included. The modelling carried out for Phase Two looks at the longer-term impacts of changes to the tolling regimes; short-term impacts in the immediate aftermath of any changes may not mirror the results of the modelling. The opportunity has also been taken to obtain up-to-date information on a number of High Occupancy Vehicle (HOV) schemes and HOV research projects currently being carried out in the UK and in other parts of the world.

These investigations have been categorised into three separate areas of work,

1. Analysis of Erskine toll scenarios and effects on the surrounding network
2. Analysis of Tay and Forth toll scenarios and interaction with other bridges
3. Investigation into measures to increase car occupancy over the Forth Road Bridge

Individual Reports have been produced for each of these three work studies and the reports are available separately. However, to facilitate understanding of the main issues for the Tolled Bridges Review the following sections summarise each report and reproduce the respective conclusions drawn up by the consultants for each study.

This traffic modelling builds on earlier work carried out in Phase One, also using TMfS. In Phase One, the following four tests were carried out at Erskine, Forth and Tay:

- The status quo;
- Removing tolls;
- Halving tolls;
- Doubling tolls.

As well as those general tests, there were several independent tests carried out –

- A differential tolling scenario of 50p for cars and £1.00 for HGVs (both each way) was modelled for Erskine;
- as TMfS was not sufficiently developed to model toll differentials by time of day during Phase One, 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 larger increase was not modelled for Erskine as it does not have a congestion problem;
- the effect of one-way tolling at Erskine Bridge was tested.
1. Erskine Bridge

Modelling work has been carried out using the Transport Model for Scotland (TMfS) to apply different toll levels to the Erskine Bridge and examine the effects on the surrounding road network, with particular attention to the A82 traffic corridor and other major Clyde crossings within the Glasgow Council area.

The consultant was required to use the model to test the following three scenarios for the forecast years of 2006 and 2011.

- maintain the current bridge toll of £0.60 (in each direction for all vehicles)
- remove the toll in both directions for all vehicles
- change the toll to £0.50 for Cars and £1.00 for OGVs (in each direction)

The conclusions from the study were:-

Conclusions (extracted from the consultant’s report)

- When tolls are removed from the Erskine Bridge (Test B01 in 2006 and B02 in 2011) there is a large increase in traffic flow in both directions across the bridge itself, approximately 11,000 vehicles per day in each direction. A large proportion of this ‘new’ traffic crossing the bridge is re-routeing from the Clyde Tunnel which is itself reduced by approximately 2,400 vehicles per day in each direction. The effect of removing the toll on Erskine Bridge has a minor effect on the Kingston Bridge.

- The flow on Erskine Bridge increases slightly when the charge for cars is decreased and goods increased (Test C01 in 2006 and C02 in 2011). In this test, the effect on the Clyde Tunnel and Kingston Bridge is minimal.

- The test that produces the most significant change in results from the Reference Case is the removal of tolls as one would expect (as it is the largest change to the toll regime). The removal of tolls has an interesting effect on route choice. It was found that a higher percentage of traffic using the Erskine Bridge terminates in Glasgow, i.e. swapping their choice of routes from the North bank corridor of the Clyde (A82 and A814 etc) to the South bank corridor (M8 and A8 etc). This in turn provides a degree of congestion relief around the North bank corridor.

- The model output demonstrates that there is no consequent increase in delay in and around the Glasgow area for traffic re-routeing to the South bank of the Clyde (via the M8) from the North bank. This suggests that this traffic may link back to their original route choice closer in to Glasgow or that the redistribution of route choices maintains a status quo of link and junction delays, with no significant change in flow orientation that would cause significant junction delays along the North or South Clyde Corridor. Indeed, the results suggest that it would be more likely that increases in toll would cause delays along the North Bank of the Clyde as the removal of tolls attracts traffic away from the North Bank. This confirmed earlier modelling work done in Phase One.

- The removal of tolls does result in an increase in delay on and around the Erskine Bridge – both North and South Bridgeheads and on the secondary road network.
The most significant diversion of vehicles occurs at Erskine Bridge itself (as expected). By the time traffic has re-routed as a consequence of the toll removal, the changes around Kingston Bridge (both increases and decreases depending upon time of day and direction of travel) are generally insignificant. Any predicted increases are estimated to be less than 100 vehicles per hour (although this may also be due to capacity restraint effects on Kingston Bridge).

When the charge for crossing the Erskine Bridge is amended (to £0.50 for Cars and £1.00 for OGVs) as in tests C01 and C02 (for 2006 and 2011 respectively), a minor reduction in Annual Average Daily Revenue occurs, despite a slight increase in traffic utilising the Erskine Bridge. This is predominantly down to the make up of traffic using the bridge – more cars (paying less tolls) and less OGVs (paying higher tolls) use the bridge which nets out at a reduction in toll revenue.

In the case of the removal of tolls, the percentage OGVs using Erskine bridge reduces from around 9% to around 5%.

There are insignificant effects to changes in destination and mode choice within these Erskine Tests.

The following three maps show traffic congestion projected to 2011 during the AM peak on a typical day in Glasgow city centre and the surrounding area under the current tolling regime (Figure 1); the congestion in the same area if the tolls are removed (Figure 2); and the difference in congestion levels between the two scenarios (Figure 3).

Figure 1. Congestion in 2011 AM Peak: Current Tolling Regime.
For further details of this work refer to the full report entitled “Tolled Bridges Study: Phase Two – Erskine Bridge”, July 2005. Prepared for the Scottish Executive by Consultants MVA. This is available on request.
2. Tay and Forth Road Bridges – Additional Work

In a similar manner, TMsS modelling has been applied to the Tay Road Bridge to investigate the effects of alterations to the tolling arrangements. In addition, the interaction of the Forth and Tay bridges has been considered with regard to through traffic through Fife for the scenario when both bridges are tolled one way, in the same direction. General observations have also been made regarding the interaction with other major bridges and the effect on toll revenue.

The specific tests that have been undertaken are as follows:

- **Reference case** – the status quo at all bridges.
- **Test 1** – Two-way tolling on all bridges. On the Tay Road Bridge the toll is £0.40 for cars and £1.00 for goods vehicles in both directions. On the Forth Road Bridge the charge is £0.50 for cars and £1.00 for goods vehicles in both directions. Erskine Bridge remains unchanged.
- **Test 2** – The toll plaza on the Tay Road Bridge is moved to the south end of the bridge and tolled in the northbound direction. All toll charges remain the same as they are at present.
- **Test 3** – Tolls are removed from Tay, Forth and Erskine. The effects of removing the tolls at Erskine are examined in detail at section 1 above.

The conclusions from the study are:-

**Test 1 - Conclusions**

- The Tay and Forth Road Bridges both experience an increase in flow in the current toll direction as the toll decreases to accommodate the two-way toll. In the previously untolled direction, both bridges note a reduction in flow as the cost of using the bridge in this direction increases.

- The move to two-way tolling has knock on effects on both the Kincardine Bridges. There is also an effect on Friarton Bridge on the M90 (and to a lesser extent the M9 at Stirling). The flow on Kincardine Bridge increases significantly Southbound due to the introduction of the Southbound tolls on the Forth Road Bridge, but the flow decreases Northbound. Similarly Friarton Bridge flows increase Northbound and decrease Southbound as the Tay Road Bridge becomes tolled in both directions.

- The principal traveller response to the changes in toll regime is to change route choice. Mode and destination choice effects of altering the existing one-way toll regime are negligible.

- As a result of the introduction of two-way tolling both Forth and Tay Road Bridges experience a net drop in CO₂ emissions, but Kincardine Bridge and Friarton Bridge both experience increases.
The revenue generated as a result of two-way tolling has little effect on the Tay Road Bridge, but results in a slight increase in tolls over the Forth Road Bridge.

Test 2 - Conclusions

- Changing the toll on the Tay Road Bridge to become a Northbound toll rather than a Southbound toll decreases the Annual Average Daily Traffic (AADT) flow Northbound on the bridge by around 15%, whilst there is an increase in AADT traffic Southbound over the bridge of around 19%. The overall two-way AADT flow on the Bridge is however largely unchanged.

- There are impacts that this tolling strategy would have on the Road network in Fife. Both the A91 and the A92 will note increases in the amount of Southbound traffic on them, whilst experiencing a decrease in Northbound flow.

- The principal traveller response to the changes in toll regime is to change route choice. Mode and destination choice effects are negligible.

- There are slight decreases in emissions of CO₂ on the Tay Road Bridge and the M90 Southbound, but there are increased emissions on the M90 Northbound.

- The Annual Average Daily Revenue (AADR) generated in this test decreases by just under £1,000 in both modelled years.

Test 3 - Conclusions

- The removal of tolls from all the tolled bridges gives rise to large increases in flows across each (previously tolled) bridge.

- As the most sensitive traveller behaviour to the removal of tolls is to change route, as a result of the increase in flow at the Forth and Tay, there are consequent reductions in flow on some of the alternative routes. However, these reductions are not large enough to substantiate the increases; additional traffic is attracted to the untolled bridges as a result of mode choice (to change from PT to Car), destination choice (for example, as a long term consequence to move house or place of work for Home Based Work travellers, to move shopping/leisure locations for Home Based/Non Home Based Other travellers) or induced traffic.

- As a result of these increases in flow, there are large increases in Congestion and Emissions (both NOₓ and CO₂) over each of the Bridges. This results in decreases in congestion and emissions elsewhere in the road network.

- For Forth and Tay, the noticeable increases in Congestion and Emissions occur on the A91 in Fife, and on the Edinburgh City Bypass. The main decreases of note are on Friarton Bridge, the A90 near Dundee, and around Kincardine Bridge.

- There is no toll revenue generated as a result of this test.
The following maps show headline results of this modelling for Forth and Tay – the congestion experienced at both bridges projected to 2011 during the AM peak on a typical day under the current regimes (Figures 4 & 7 respectively); the congestion that modelling suggests would be experienced if tolls were removed (Figures 5 & 8 respectively); and the difference in congestion levels between the two scenarios (Figures 6 & 9 respectively). Two additional maps for Tay show the congestion levels that modelling suggests would be experienced if the toll booths were moved to the south side of the bridge (Figure 10), and the difference between those congestion levels and the congestion experienced with the toll booths in their current position (Figure 11).

Figure 4. Congestion in 2011 AM Peak: Current Tolling Regime.
Figure 5. Congestion in 2011 AM Peak: When Tolls are removed on bridges.

Figure 6. Changes in Congestion in 2011 AM Peak: When Tolls are removed on bridges.
Figure 7. Congestion in 2011 AM Peak: Current Tolling Regime.

Figure 8. Congestion in 2011 AM Peak: When Tolls are removed on bridges.
Figure 9. Changes in Congestion in 2011 AM Peak: When Tolls are removed on bridges.

Figure 10. Congestion in 2011 AM Peak: When toll booths are moved to the south side of the bridge and toll collected northbound.
Figure 11. Changes in Congestion in 2011 AM Peak: When Tay is tolled northbound and toll booths situated on the south side of the bridge.

For further details of this work refer to the full report entitled “Tolled Bridges Study: Phase Two – Additional Work”, August 2005. Prepared for the Scottish Executive by Consultants MVA.
3. Car Occupancy over the Forth Road Bridge

The primary aim of this study is to investigate possible measures that can be developed to increase car occupancy over the Forth Road Bridge, particularly during the peak periods. A large number of schemes under consideration around the world, and in many cases under successful operation, have been examined with the specific intention to promote application of the methodology to the Forth Road Bridge.

The main objectives of the study were as follows:

1. Literature Review of potentially relevant schemes/applications including website information and advice from authorities such as the International Bridge Tunnel and Turnpike Association (IBTTA).
2. Review of historic schemes and proposals relating to car occupancy that have been considered for the Forth Road Bridge with comments on their applicability, e.g. “Forth TRIP: Radical Measures Study” and “Forth Road Bridge Short Term Measures Study”.
3. Discuss practical application of HOV lanes concept for the Forth Road Bridge.
4. Discuss practical aspects of differential tolling and the concept of higher toll charges for SOVs. Highlight any problems for implementation using the existing plaza layout and investigate the potential of electronic tolling methods with regard to HOVs and SOVs.
5. Investigate any similar bridge scenarios in the world (i.e. two lane dual carriageway) where a workable scheme to reduce single occupancy car usage has been successful and discuss applicability to the Forth Road Bridge.
6. Any other observations, general recommendations and advice on cost effective solutions.

A summary of the report of these findings has been taken from the report and is reproduced below.

Conclusions (extracted from the consultant’s report)

- The Forth Road Bridge presently operates at capacity during peak times with an average daily traffic flow of approximately 65,800 vehicles in 2004, of which some 91% were cars and light goods vehicles and 6% were heavy goods vehicles over 3500 kg. The remaining vehicles comprised motorcycles, buses and exempt vehicles, with a negligible number of escorted vehicles.

- During peak periods, approximately 70% of vehicles crossing the bridge are single occupancy vehicles.

- The results from the research presented in this report indicate that demand exceeded bridge capacity on approximately 270 days during 2003 and notes that traffic volumes are projected by FETA to increase by between 2% and 3% per annum over the next 5 years.

- Previous analyses have confirmed that simply removing the tolls will not increase bridge capacity as two lanes on the bridge can accommodate 3,600 veh/hour and the bridge’s seven manual tollbooths can process up to 520/hr each, which equates to a
total of 3640 veh/hour. As a result, a strategy to encourage high occupancy vehicles (HOVs) on the bridge or increase public transport usage seems the most likely solution to address the delays and congestion experienced by road users.

- HOV lanes have become widely adopted in the United States since they were introduced in the 1970s. There are over 125 HOV projects in 30 cities, covering over 2,500 lane-miles and carrying more than 3 million commuters a day.

- The possibility of using HOV lanes on the Forth Road Bridge is potentially attractive because of the opportunities it offers to reduce the volume of single occupancy vehicles crossing the bridge during peak periods. However, results from the research presented in this report indicate that there are only a few bridges in the world that incorporate an HOV facility, including two bridges in Canada and seven in the United States, of which two have a similar traffic demand to that on the Forth Road Bridge. The Dumbarton Bridge Toll Plaza and the Coronado Bridge Toll Plaza, both in California, have average daily traffic flows of approximately 61,000 vehicles and 68,000 vehicles respectively. However, these bridges differ from the Forth Road Bridge in that the Dumbarton Bridge has three lanes in each direction and the Coronado Bridge has two lanes in each direction and a reversible median HOV lane.

- As the Forth Road Bridge is limited to two lanes in each direction, with no hard shoulders, developing an HOV lane would require the physical separation of the two lanes over the bridge to create one HOV lane and one general purpose lane and the direction of HOVs through the northbound HOV tollbooths to access the dedicated HOV lanes.

- The provision of a dedicated HOV lane in addition to general purpose lanes can be a cost effective solution on a land based roadway where sufficient land is available to widen or upgrade a road. However, due to the limited road space available on the Forth Road Bridge, the results of previous studies have concluded that this is not technically viable.

- In the United States, a new congestion management technique has been developed using high occupancy toll (HOT) lanes which combine the HOV approach with pricing strategies to allow SOVs access to HOV lanes by paying a toll. These are limited access: normally barrier separated roadway lanes that provide free or reduced cost access to qualifying HOVs and also provide access to other paying vehicles which do not satisfy the passenger occupancy requirements. By using price and occupancy restrictions to manage the number of vehicles travelling on these lanes, HOT lanes can maintain volumes consistent with uncongested levels of service even during peak periods, and eliminate the “unused lane syndrome” normally associated with HOV schemes.

- The "unused lane syndrome" is a characteristic that can exist when HOV lanes are introduced on roads where the volume of HOVs is significantly lower than the volume of SOVs. In this case, the HOV lane can be relatively lightly trafficked or under-utilised compared to the SOV lane.
The Forth Road Bridge does not presently exhibit this characteristic because traffic is free to use both lanes. However, if an HOV lane were introduced on the Forth Road Bridge, setting aside an existing lane for this purpose, it is feasible that the "unused lane syndrome" would appear with a correspondingly long queue in the SOV lane. Results from the Phase 1 study indicate that the exclusion of SOV traffic from the dedicated and more lightly trafficked HOV lane could generate queues in the general purpose lane of more than 7km.

A strategy based solely on occupancy pricing on the general purpose lanes through the introduction of differential charges at the toll collection point would assist in discouraging single occupancy vehicles on the Forth Road Bridge, where road users have the option of car sharing, whilst balancing traffic demand across the available lanes.

However, in the United States, HOT lanes, which are still at the experimental stage, are considered to be the next development of the HOV lane operation where SOVs can choose to pay a higher toll to use an HOV facility. In the case of the Forth Road Bridge, this could apply where HOV toll booths are used by SOVs to save time by avoiding delays at the SOV toll booths.

Implementing an HOT scheme on the Forth Road Bridge could benefit from an electronic toll collection (ETC) and traffic information system to facilitate variable, real time toll pricing of non-HOV vehicles. Hence different charges could apply to SOVs and HOVs depending on vehicle occupancy and time of travel. All relevant information could be clearly displayed on variable message signs on the approach to the toll collection points.

An integrated ETC and vehicle occupancy detection monitor could enforce the HOT lane to deter potential violators. Such a system would monitor vehicle occupancy and toll pricing and record when incomplete or anomalous transactions occur at the tollbooths.

It should be noted that the information presented in this report represents an overview of the possible measures to increase car occupancy on the Forth Road Bridge and that more detailed work, including investigating operating conditions on the approach to the toll booths, would be required to assess the extent to which implementation of these measures would be successful.

For further details of this work refer to the full report entitled “Overview of Measures to Increase Car Occupancy over the Forth Road Bridge”, August 2005. Prepared for the Scottish Executive by Consultants Scott Wilson (Scotland) Ltd.
### APPENDIX C - ABBREVIATIONS

#### List of Abbreviations

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>AADT</td>
<td>Annual Average Daily Traffic</td>
</tr>
<tr>
<td>AADR</td>
<td>Annual Average Daily Revenue</td>
</tr>
<tr>
<td>AQMA</td>
<td>Air Quality Management Area</td>
</tr>
<tr>
<td>EETS</td>
<td>European Electronic Toll Service</td>
</tr>
<tr>
<td>ETC</td>
<td>Electronic Toll Collection</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>FETA</td>
<td>Forth Estuary Transport Authority</td>
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<tr>
<td>GPS</td>
<td>Global Positioning System</td>
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<tr>
<td>HGV</td>
<td>Heavy Goods Vehicle</td>
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<tr>
<td>HOT lane</td>
<td>High Occupancy Tolling lane</td>
</tr>
<tr>
<td>HOV lane</td>
<td>High Occupancy Vehicle lane</td>
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<tr>
<td>IBTTA</td>
<td>International Bridge Tunnel and Turnpike Association</td>
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<tr>
<td>LTS</td>
<td>Local Transport Strategy</td>
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<tr>
<td>MOV(s)</td>
<td>Multiple Occupancy Vehicle(s)</td>
</tr>
<tr>
<td>OBU(s)</td>
<td>On Board Unit(s)</td>
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<tr>
<td>OGV(s)</td>
<td>Other Goods Vehicles - i.e. Heavy Goods Vehicles</td>
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<tr>
<td>PSV(s)</td>
<td>Public Service Vehicle(s)</td>
</tr>
<tr>
<td>RTP(s)</td>
<td>Regional transport partnership(s)</td>
</tr>
<tr>
<td>RTS</td>
<td>Regional Transport Strategy</td>
</tr>
<tr>
<td>RUC</td>
<td>Road User Charging</td>
</tr>
<tr>
<td>SCEC(s)</td>
<td>Scottish Citizens Entitlement Card(s)</td>
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<tr>
<td>SESTRAN</td>
<td>South East Scotland Transport Partnership</td>
</tr>
<tr>
<td>SITCoS</td>
<td>SESTRAN Integrated Transport Corridor Studies</td>
</tr>
<tr>
<td>SOV(s)</td>
<td>Single Occupancy Vehicle(s)</td>
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<tr>
<td>TETA</td>
<td>Tay Estuary Transport Authority</td>
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<tr>
<td>TMFS</td>
<td>Transport Model for Scotland</td>
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<tr>
<td>TRBJB</td>
<td>Tay Road Bridge Joint Board</td>
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<tr>
<td>TROC</td>
<td>Trunk Road Operating Contract</td>
</tr>
<tr>
<td>VED</td>
<td>Vehicle Excise Duty</td>
</tr>
<tr>
<td>WESTRANS</td>
<td>West of Scotland Transport Partnership</td>
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