

**Highlands and Islands Enterprise
and
HITRANS**

**Evaluation of the Economic and
Social Impacts of the Skye Bridge**

Final Report

22 February 2007



Executive Summary

It is now over 10 years since the bridge opened, and on 21 December 2004 the tolls were removed from the crossing. This report: reviews the available data and previous research, reports the results of an extensive new survey programme, assesses the scale of the impacts which have occurred, and reviews the lessons learned. The work has been undertaken by staff from DHC with detailed support and advice from Peter Mackie and James Laird at the Institute for Transport Studies at the University of Leeds.

The transport changes have been significant, affecting the time, cost, comfort, convenience, reliability, and image of travelling to Skye. Fixed links to islands have the potential to deliver step changes in quality of life to island residents and profitability to businesses. The most significant journey time change was when new ferries were introduced in 1992. Once the bridge was opened, cost replaced time as the most important factor affecting the accessibility of Skye, and substantial cost savings for travellers were subsequently made in 2004 when the tolls were removed.

Changes in travel

There has been a significant increase in vehicle traffic on the Kyle-Kyleakin crossing since 1985. The introduction of the 24 hour ferry made little difference to traffic growth, but a significant jump of about 20% was experienced in traffic levels as a result of the change from the ferry to the tolled bridge. Since the toll removal, vehicle traffic has been increasing rapidly and it is too early to identify what the eventual implications of a free bridge on traffic levels will be. Traffic has already increased by about 50% since the tolls were removed. There was significant suppression of local pedestrian trips when the bridge was built, with an immediate loss of 275,000 journeys rising to 410,000 by 2004. This accounts for around a third of the people movement at Kyle of Lochalsh in 1995.

The vehicle trip growth since the removal of the bridge tolls has been dominated by strong growth in the local trips between Kyleakin/South Skye and Kyle of Lochalsh/Lochalsh. Local trips are dominated by shopping and personal business journeys. The mix of traffic by vehicle type has remained largely consistent.

Developments at the Kyle-Kyleakin crossing make routes to Uist and the Western Isles more attractive, but there has been no abstraction from the Ullapool to Stornoway route, since ferry speed and capacity improvements on this route have had a greater impact.

Economic benefits

The impacts of the transport changes on the economy of the area have been significant. In the early 1990s the congestion at Kyle of Lochalsh was acting as a constraint on the development of Skye. The introduction of the 24 hour ferries overcame this problem, and helped the economy of Skye to grow. The toll bridge consolidated the benefits of the ferry improvements, and made them more permanent.

To date, the user benefits from the bridge have been nearly £100 million at 2006 prices. The single year benefits comparing the free bridge with the ferry services are £12.2 million and about half of this benefit is from the removal of tolls. Forecasting of traffic growth is not possible based on the analysis undertaken for this work. However, even assuming low future growth of traffic, the 60 year benefit is likely to be in excess of £400 million at 2006 values and prices. This compares to a construction cost in 2006 prices of less than £100 million.

Community and business impacts

The toll removal has changed perceptions of the Skye Bridge, so that it is now, almost universally, perceived positively by local residents and businesses. This has the dual benefit of helping to underpin business confidence and making the area a better place to live and visit.

There have been both positive and negative effects on local markets. The greatest changes have occurred since the toll removal. In general the companies that were already successful have become more successful, and those that were facing decline have seen the rate of decline grow.

Removing the tolls has helped to re-integrate the local economies of Lochalsh and South Skye. The bridge had a large severance effect on Kyle of Lochalsh and Kyleakin as demonstrated by the loss of many free pedestrian trips. The removal of tolls has gone some way to re-integrating the two communities.

The bridge, and the controversy relating to the tolls, has helped to market Skye across the UK and overseas. Visitors largely view the bridge as an asset.

The survey data does not identify any significant positive impacts on business profitability and employment from the removal of the tolls, but the toll savings have been small in relation to increasing fuel costs. Undoubtedly the toll removal has shielded the Skye economy from some of the fuel price increases, but it is difficult to disentangle the two effects.

Local employment markets have benefited, increasing the scope for business growth in the Lochalsh and South Skye areas. The labour market effects have been primarily related to the toll removal, and these are long term effects. This research is too early to assist in assessing the ultimate scale of the impact.

The bridge is only one element in the social and economic development of the area, and its impacts are entwined with wider market changes for house prices, fuel prices, international tourism market fluctuations, the rise of e-lifestyles and remote working, and other wider trends.

The Skye Bridge was promoted as a project of strategic interest to the Highlands. These strategic benefits were broadly achieved by the tolled bridge, but were not matched by equivalent local benefits. The toll removal has extended the strategic benefits to ensure that local people can benefit more, also helping the bridge to be perceived more positively by both residents and businesses.

Implications for future appraisal

There are some important lessons that future transport appraisal can learn from Skye:

- It is necessary to include all modes affected by investment, including pedestrians in user benefit calculations. Identifying the relationships between modes is also vital even if this is only the walk to the car (or in the case of Skye the pedestrian ferry trip from the car to the shops).
- The relationship between travel cost and demand, requires a highly segmented approach to travel behaviour analysis, particularly where money costs are involved. These effects are can also be more sensitive in remote areas.
- Transport investment appraisal needs to include issues such as convenience, comfort, reliability and image in addition to cost and time.
- A 'fixed link' factor may exist, related to the uncertainty that communities and businesses experience when reliant on ferry services. There is however no evidence as to the size of such a value from the Skye Bridge experience.
- Many of the most important impacts are uncertain. In the case of Skye the greatest impacts have depended on a few companies or entrepreneurs who have been able to take advantage of the change. Project development and appraisal should consider how to lock in potential benefits as part of project delivery wherever possible.
- It is necessary to include indirect and consequential effects as well as direct impacts. Although, it is not possible to predict all consequential changes correctly, it is possible to scale the most important effects to identify the range of certainty.
- Labour markets are relatively important influences in remote economies.
- Agglomeration benefits appear to be less important in remote regions.
- The distribution of benefits is important not just for equity but for public acceptability. In the case of Skye, the fact that many local trips experienced a disbenefit helped to create particular instability in public acceptability.
- Appraisal needs to consider which social and business networks influence behaviour, and ensure that investment appraisal includes appropriate complementary marketing interventions alongside the infrastructure works.
- The geographical scale needed for robust analysis can make appraisal very complex, particularly where investment decisions relate to different expenditure programmes. This emphasises the importance of establishing investment priorities within regional strategies so that scheme appraisal is more related to optimising scheme design and delivery, than decisions on overall priorities.
- The extent to which transport changes support the economic and social strengths of the area is crucial. Although these concepts are already

included within the STAG appraisal approach, the Skye Bridge emphasises the particular importance of appraisal against local objectives in remote areas.

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1.0 Introduction

1.1 Evaluating the benefits of transport changes in remote areas is one of the most significant challenges in transport appraisal. There is much to be learned from the experience of the Skye Crossing over the last decade or more. The impacts of the Skye Bridge have been tracked from baseline surveys from before it was constructed with household, business and travel surveys approximately every two years since then.

1.2 It is now over 10 years since the bridge opened, and on 21 December 2004 the tolls were removed from the crossing. This report reviews what can be learned from the case of the Skye Bridge about the impacts of major transport investment and pricing changes in remote areas, and in particular the bridge toll removal.

Approach to the project

1.3 The work has consisted of four main stages.

- A review of existing data and previous research
- Surveys of current travel, attitudes, and behaviour comprising: focus groups, telephone surveys, postal surveys and travel surveys of households, businesses, visitors, and public agencies.
- Review of potential impacts and analysis of data to identify the scale of impacts.
- Review of lessons learned.

1.4 This report:

- Outlines the methodology for the work in Chapter 2.
- Reviews the changes in travel patterns, user experiences and cost of transport in Chapter 3.
- Reviews the user economic benefits in Chapter 4.
- Identifies the impacts on business location, growth, and competitiveness in Chapter 4.
- Identifies the impacts on households, location choice, and demography in Chapter 5.
- Reviews how the above changes relate to the wider economic context in the area in Chapter 6.
- Summarises the conclusions in Chapter 8.
- Recommends how future investment and appraisal can learn from the findings in Chapter 9.

1.5 The work has been undertaken by staff from DHC with support and advice from Peter Mackie and James Laird at the Institute for Transport Studies at the University of Leeds.

2.0 Concepts and Methodology

Overview of the Changes

- 2.1 The transport changes have been significant, affecting the time, cost, comfort, convenience, reliability, and image of travelling to Skye. Table 2.1 summarises the main changes. A more detailed timeline of events is shown in Appendix A.

Table 2.1 – Key Milestones

Date	Event	Principal Direct Impacts
April 1992	24 hour ferry services introduced.	Time, reliability
17 October 1995	Bridge opens and ferry services cease. Tolls were slightly cheaper than ferry fares for all vehicle categories.	Time, image, comfort, reliability, and cost
1998	Toll regime change funded by Scottish Executive, with reductions in tolls for local people via books of tickets to £1.34 per single journey.	Cost
21 December 2004	Tolls removed.	Cost, time

- 2.2 The most significant journey time change was when new ferries were introduced in 1992. Prior to this, regular peak delays of several hours and no overnight service meant that journey planning was needed for a trip to Skye. The introduction of these ferries coincided with the announcement that a bridge was to be built.
- 2.3 When the bridge opened in 1995 it delivered further time savings, but also some cost changes. These included small cost reductions for most motorised trips but cost increases where journeys had previously been made by free ferry crossings, principally by walkers.
- 2.4 Once the bridge was opened, cost replaced time as the most important factor affecting the accessibility of Skye. The 1995 tolling regime envisaged that these cost factors were only short term with the bridge becoming free by about 2007. However, in the face of local concerns about the high short term toll, the costs for most local users were reduced in 1998, and the planned tolling period extended. A further reduction in tolls was then made in 2004 when the tolls were removed.

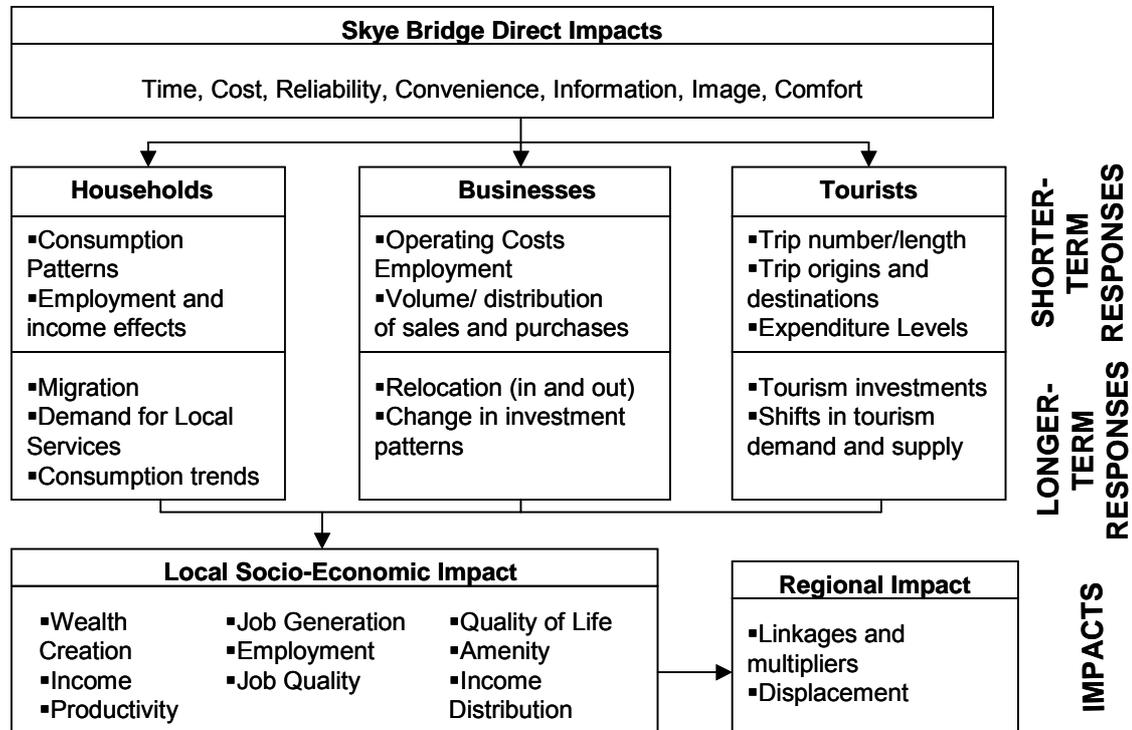
Measuring the impacts

- 2.5 The direct transport impacts have wider effects on the economy and society. These wider impacts depend on the responses of households, businesses, agencies, visitors and other actors to the transport changes.
- 2.6 These impacts are extremely difficult to disentangle from other changes within economies, so the approach to this work has been to:
- Identify the mechanisms for change from hypotheses in previous work.
 - Conduct survey work to establish whether these and other mechanisms are being observed locally.

- Carry out analysis to estimate the scale of each impact from the available data.

2.7 Figure 2.1 describes the conceptual approach.

Figure 2.1 – Impacts of the Skye Bridge



2.8 Different impacts take place on different timescales. With several changes to the quality and cost of the crossing having been made since 1992, isolating the separate effects of each parameter is probably not helpful. It is more useful to identify the overall level of change and the overall impacts that have resulted, taking account of the phasing of transport changes and impacts.

2.9 One of the key issues in any ex-post study is the identification of the counter-factual. Wherever possible it is necessary to separate out the effects of background economic and population change from those that have been initiated by the bridge and the removal of tolls. This is always a difficult task, particularly for a region like Skye and Lochalsh, which was experiencing economic and population growth prior to construction of the bridge. The changes in the local area have been compared with other parts of the Highlands and Scotland where possible. In addition, the analysis draws broadly from wider evidence and theory as required to allow the scale of the impacts to be assessed.

Assessing the direct impacts and final impacts

2.10 Fixed links to islands have the potential to deliver step changes in quality of life to island residents and profitability to businesses through increasing accessibility to education, jobs, healthcare, customers, suppliers, as well as reducing uncertainty. Valuing each of these final

impacts individually is an extremely complex task. The cross sectoral value of accessibility as a social and economic benefit is increasingly recognised within government policy.

- 2.11 Currently within appraisal, the quantifiable elements of the indirect benefits are measured through the value that households, businesses, agencies and individuals attribute to the direct transport impacts. Direct transport impacts such as time savings have value to households, individuals and businesses not because they primarily value those impacts *per se* but because they facilitate the household, business or individual achieving a final impact – which has value. For example businesses value cost and travel time reductions because they reduce business costs and increase the productivity of the workforce. Households and individuals value cost and travel time reductions because household disposable income increases, and because in a time constrained world destinations that were too far away (e.g. the supermarket) now become accessible or time that was spent travelling can now be allocated to other more useful activities.
- 2.12 If we are to use the direct transport impacts as an indirect measure of the value of a fixed link we need to have an accurate understanding of how households, businesses and individuals value changes in transport quality. In addition to time and cost savings a fixed link might be expected to deliver other quality enhancements above that offered by a ferry. These would include improved reliability, increased travelling comfort, a more ‘connected’ image and a reduced need to plan activities (in order to fit in with a ferry timetable).
- 2.13 There is very little UK and international evidence on the value that remote communities attach to these quality impacts (see Appendix K). It is important therefore to set the Skye bridge findings in the context of the wider evidence relating to inconvenience costs such as that contained in the recent update to the Norwegian appraisal guidance¹. Inconvenience costs are defined as the willingness of users to pay for a fixed link relative to a ferry. They are additional to time and out of pocket costs.
- 2.14 In addition to inconvenience costs it is possible that businesses and households may attach a value to a fixed link over a ferry that is not related to their use of the link – i.e. some form of non-use value. Such a value may be associated with, for example, the increased confidence

¹ The Norwegian appraisal guidance is based on ex-post research (Bråthen and Hervik, 1997) undertaken in the late 1990s on five fixed link crossings on the Norwegian west coast. The ferry services that were replaced by the fixed links were all frequent (more than 2 an hour in the peak) and had long hours of operation (from 5.30am to midnight). In this instance the inconvenience costs reflect both changes in headway and the benefits of increased hours of operation. Bråthen and Hervik’s research identified that inconvenience costs ranged from US\$5.2 per car to –US\$1.3 and that inconvenience costs can increase the economic benefits of a fixed link by up to 60%. However, this is scheme dependent and Bråthen and Hervik found that, for some schemes, benefits only increased by 19% and for the scheme where inconvenience costs were negative benefits were deflated by 25%.

that may be derived from an increase in the labour market catchment or the security that may be derived from the continued vitality of a community. This may provide a link with the perceived social benefit of retaining or growing the population in remote areas. Increasingly the size of these catchment changes are reported in accessibility plans and accessibility appraisals separately from transport economic benefits. This is because the value of catchment characteristics is sensitive to the local context, and this is particularly true in remote areas. There is therefore no satisfactory UK or international evidence on the economic value of the size of such a non-use value (see Appendix K).

- 2.15 The last decade has seen a strong interest in how improvements in transport can facilitate economic growth. In certain circumstances this economic growth can stimulate changes in the structure of the economy stimulating further growth. This is particularly the case for sectors of the economy where economies of scale, scope or density have an influence (Laird, Nellthorp and Mackie,2005). Whilst typically being associated with large conurbations, these 'network effects' may also have an important economic impact in remote regions.
- 2.16 Of particular significance in remote areas can be the links between transport, social and business networks. However data on how social and business networks operate is very difficult to establish (e.g. who joins a chamber of commerce or the impact on business location of a US business executive having relatives in the Highlands of Scotland). Practical appraisal is therefore a complex mix of qualitative and quantitative measures but this can provide a reasonable measure of the total economic impact of a transport project.
- 2.17 The approach adopted within this study examines the changes in traffic and travel patterns as a consequence of the transport quality and toll changes on the Skye Bridge and then, using household and business surveys, relates this to the 'final' impacts that can be attributed to the removal of tolls from the bridge. Comparisons are also made between accessibility change and the way that households and businesses value accessibility. Drawing from these survey results, a measure of the total economic impact of constructing the bridge and removing tolls from the bridge is made.

3.0 Travel Patterns

Changes in travel patterns

3.1 The Skye Bridge is one of three possible ways of travelling from and to Skye and many people access the Western Isles via Skye. The starting point for the study is to understand the travel patterns in the area and changes in the travel patterns. To facilitate this, there have been regular surveys of travel patterns since 1995. These include:

- Origin-destination surveys at:
 - The Skye Bridge (1995, 1997, 1999 and 2006)
 - Glenelg/Kylerhea ferry (1995 and 2006)
 - Mallaig/Armadale ferry (1995, 1998, and 2006)
 - Ullapool/Stornoway ferry (1995, 1998, and 2006)
 - Uig/Tarbert/Lochmaddy ferry (1995, 1998 and 2006)
 - Kyle of Lochalsh to Kyleakin and Broadford buses. (1995, 1998, and 2006)
 - Kyle of Lochalsh rail station (1995, 1998, and 2006)
- Bus passenger surveys on all services passing through Kyle of Lochalsh.
- Traffic count data from the Scottish Executive and Highland Council covering all available data from traffic counts in the area since the 1985.
- Some selected ferry service data from Caledonian MacBrayne and the Scottish Executive covering ferry usage since 1995.
- Rail data from ScotRail and Highlands and Islands Enterprise with the results of recent trends in rail travel.

3.2 The analysis of these travel patterns is helpful in explaining how people have responded to transport changes in the area. The zoning system has used for the analysis is as follows:

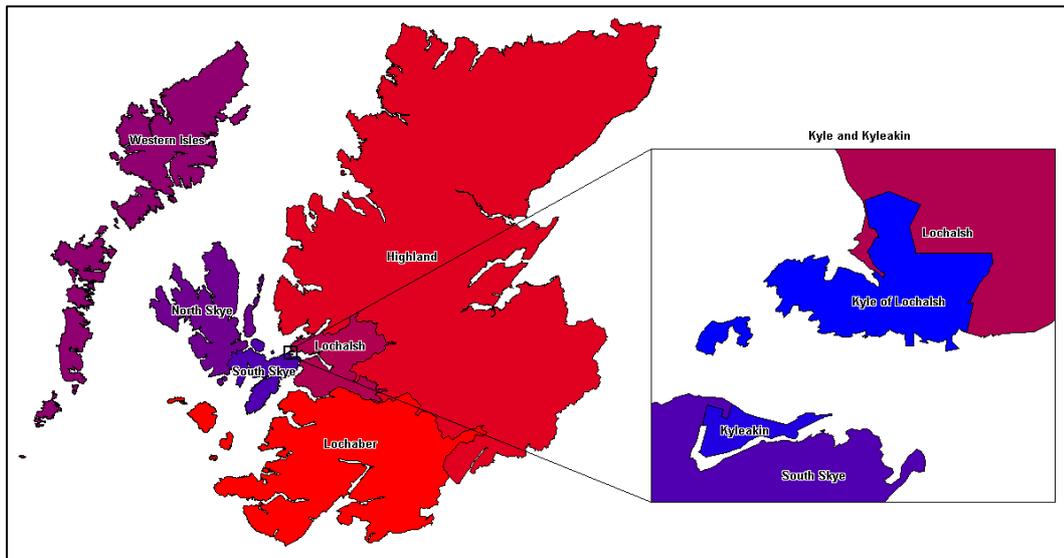
Mainland

- Kyle of Lochalsh
- Rest of Lochalsh
- Rest of Highland
- Lochaber
- Elsewhere e.g. central belt

Skye and Islands

- Kyleakin
- South Skye
- North Skye
- Western Isles

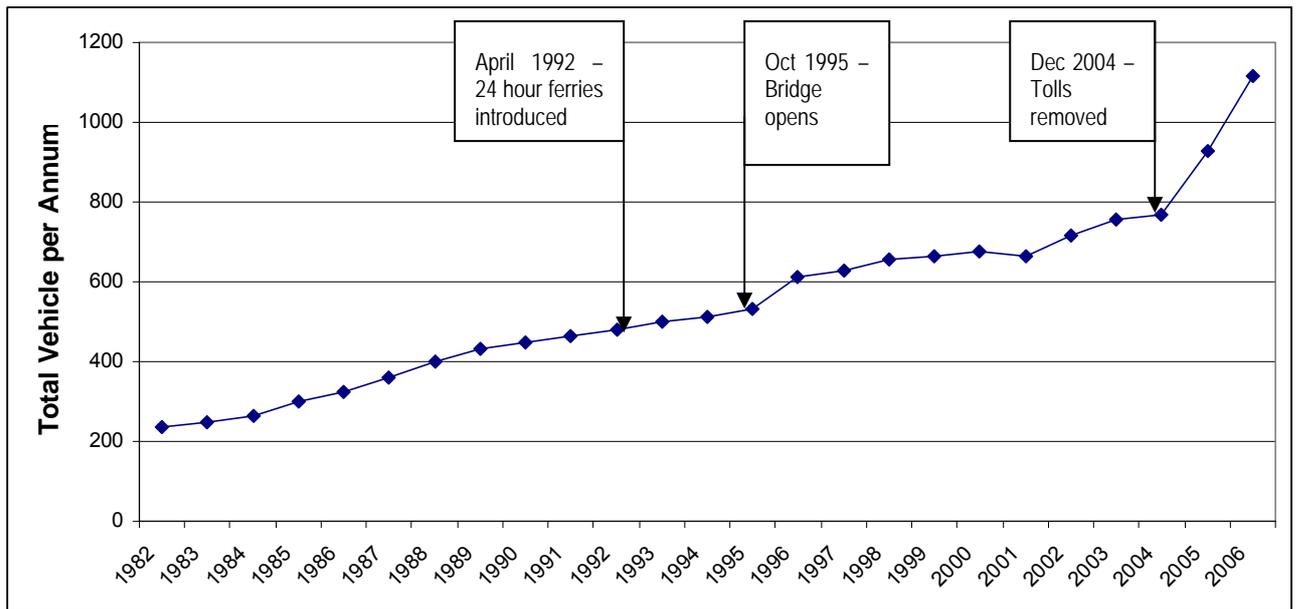
Figure 3.1 – Analysis Zones



Traffic Flows on the Kyle-Kyleakin Crossing (Ferry and Bridge)

- 3.3 Figure 3.2 shows the annual traffic count data for both the Kyle-Kyleakin Ferry and the Skye Bridge. Toll and ferry data was obtained from Scottish Transport Statistics, and previous studies of the Skye Bridge (TRL, 1995; DTZ, 1999).
- 3.4 Since the toll removal, traffic has been increasing rapidly and it is too early to identify what the eventual growth rate will be with a free bridge. Traffic has already increased by about 50% since the tolls were removed.
- 3.5 The data also shows a significant jump (of approximately 20%) in traffic as a result of the change from the Ferry to the Bridge. However, reporting methods and data recording on the Bridge are likely to be more rigorous than those on the ferry (as a result of the Toll data vs. manual recording of the ferry crossings, and the variety of sources used for the ferry analysis). Ferry crossings may also have been underreported for some trips. As a result, the level of increase resulting from the introduction of the bridge could be overestimated.

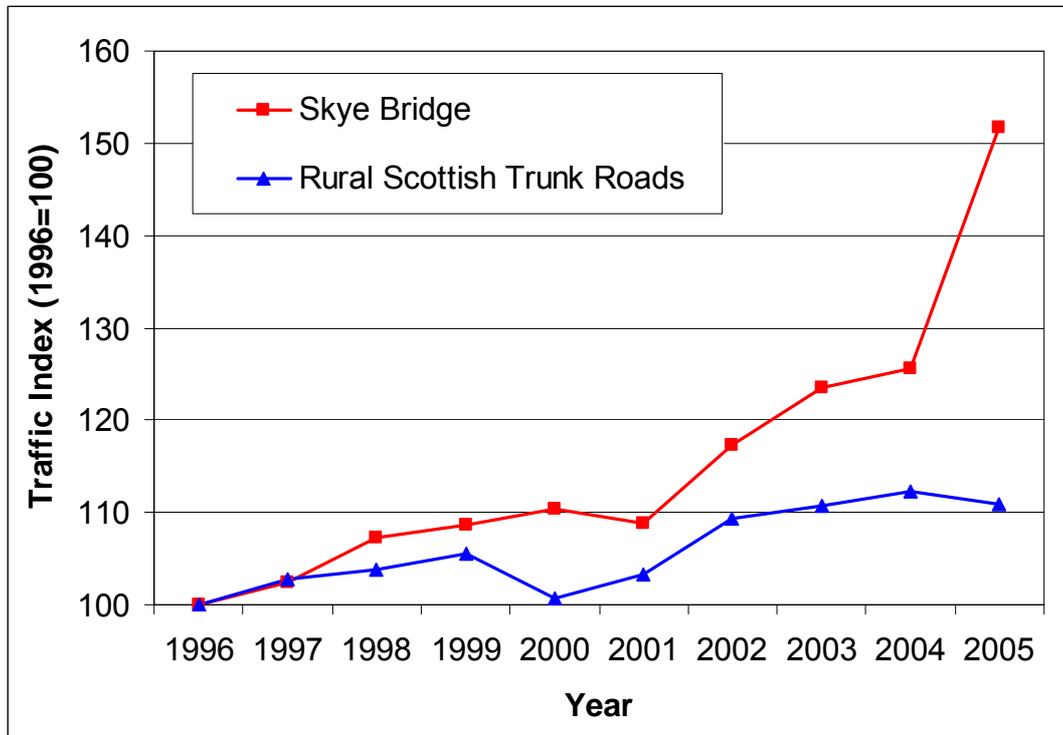
Figure 3.2 - Kyle – Kyleakin Annual Vehicle Crossings



- 3.6 A slight levelling off of annual traffic growth on the ferry occurs after 1989. The introduction of the 24 hour ferry appears to have made little difference to the overall trend. However, this change may have provided the increased capacity to meet the continuing steady increase in demand. The significant dip in crossings in 2001 is thought likely to be a result of the UK foot and mouth crisis.
- 3.7 An examination of seasonal variation demonstrates consistent traffic peaks in August, and troughs in December. The year to year traffic flows are broadly consistent (excepting the foot and mouth affected 2001 data) until the end of 2003, when the rate of growth increases.
- 3.8 Figure 3.3 shows that traffic levels increase on the Skye Bridge in 1998 relative to national figures. This increase coincides with the introduction of enhanced discounted tickets for local residents in 1998, which gave rise to an immediate and significant increase in local trips. However, the figure also demonstrates that the relative traffic levels on the Skye bridge have continued to grow at a faster rate than occurred at a national level. Although incomes are higher and unemployment lower in Skye and Lochalsh than for the Highland average, the difference in the levels of traffic growth cannot be completely attributed to differences in these economic drivers of traffic growth, since the traffic growth is generally larger than the growth observed in these headline economic statistics.
- 3.9 This finding is reinforced by the 1998 household survey results and traffic data analysis (DTZ 1999); by late summer 1998, 28% of residents had increased their use of the bridge as a result of the discounted charges, making an average increase of 2 return trips (four crossings) per week. This travel behaviour change appears to have been

maintained for a number of years subsequent to the toll discounts being introduced.

Figure 3.3 - Skye Bridge Traffic and Trunk Road Traffic Indices



3.10 Classified count data at the bridge and Broadford shows that:

- The composition of the traffic across the bridge has been fairly stable despite large changes in overall levels.
- Over the period 1996 to 2004, 92% of tolls collected were for cars, 4% for heavy goods vehicles, 2% for buses, and 2% for motorcycles.
- The introduction of the bridge had increased the number of buses by 30% and commercial vehicles by 12%.
- There had been a slight decrease in the proportion of heavy goods vehicles

Pedestrians and Bus Travel on the Kyle-Kyleakin Crossing

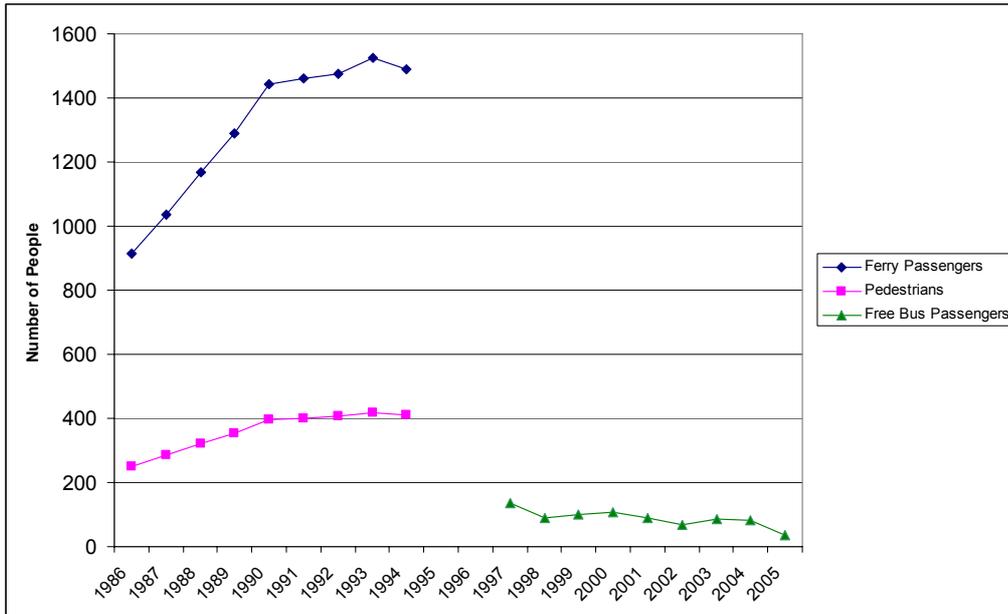
3.11 It is not possible to identify accurately how many passengers used the ferries. Most people walked on rather than stayed in their vehicles and vehicle occupancies data was not obtained in the 1995 surveys.

3.12 However using average vehicle occupancies from the 2006 winter and summer OD surveys, it is estimated that there were approximately 410,000 person trips across the Kyle of Lochalsh at the time the ferries

stopped operating². The vehicle occupancies in 1995 were not known, but based on national trends, occupancies have reduced slightly over time, so this figure may be an underestimate.

- 3.13 After the introduction of the bridge, a subsidised shuttle bus service (Service 370) was introduced between Kyle and Kyleakin to replace the foot passenger service offered by the ferry. No counts are available for people who chose to make the (approximately 20 minute) walk across the bridge.

Figure 3.4 – Ferry and Shuttle Bus Passenger Volumes



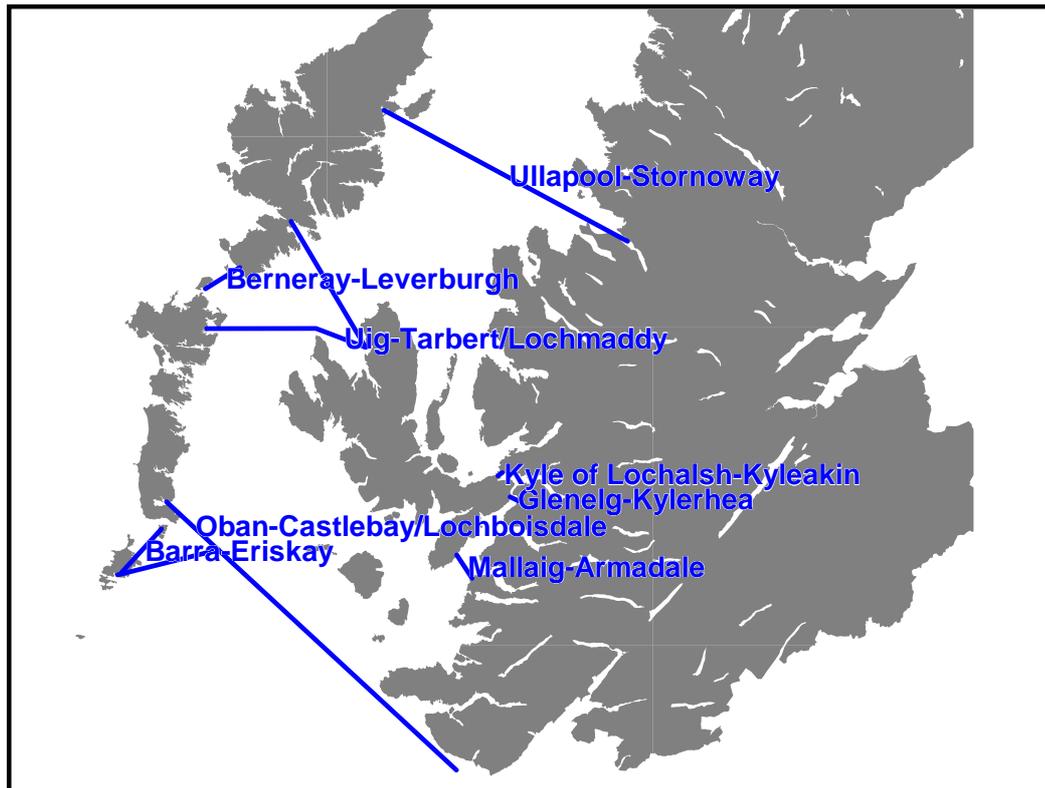
- 3.14 The first year for which there was data for the shuttle bus (1996-97) the patronage was about 135,000 but there was a steady decline in this traffic in the years that followed. A few people may have continued to walk and many will have shifted to car. This will have been a very important factor affecting the growth of car traffic shortly after the bridge opened. However the loss of up to 275,000 pedestrian trips is equivalent to about half of the total vehicle flow across the bridge. Trip suppression of this order could be expected to have significant economic (and political) consequences.
- 3.15 Further detail on these flows and the decline of the shuttle bus is provided in Appendix B.

² The passenger figures on the ferries did not distinguish between foot passengers and passengers in cars, buses, lorries and coaches. This estimate therefore assumes an average car occupancy of 1.8. Peak summer occupancies are higher than this and winter occupancies are lower. The number of pedestrians on the ferries is sensitive to the average value chosen.

Ferry Traffic

- 3.16 Figure 3.4 shows the ferry routes which could potentially be affected by the Skye Bridge. All but one of the ferries, Glenelg to Kyleerhea, is operated by Caledonian MacBrayne (Cal-Mac). Kyle-Kyleakin ceased operating in October 1995. Otternish-Leverburgh started operating in June 1996, later transferring to a new North Uist terminal at Berneray. The Sound of Barra service started operating in 2003 between Barra and Eriskay.

Figure 3.4 - Ferry Routes



- 3.17 Analysis of the ferry data summarised in Appendix B (Figures B4 to B8) shows that:
- There does not appear to have been abstraction from the Ullapool to Stornoway ferry as a result of the Skye Bridge. This is likely to be partly as a result of the introduction of the enhanced ferry services on this route.
 - The Mallaig-Armadale route has delivered a steady and significant increase in commercial (bus and LGV/HGV) vehicles since the introduction of linkspans on this route in 1994. There may have been some abstraction of car traffic from this route but overall the 1994 investment has been more significant for this route than any negative impacts from the Skye Bridge.
 - Passenger and car traffic on the Uig-Tarbert-Lochmaddy service grew by over 20% between 2001 and 2004 despite a weak

economy in the Western Isles. The improvements at Kyle-Kyleakin have made this a more attractive route, since there were risks of being held up at Kyle and missing the ferry at Uig prior to 1992/95. Whilst it is difficult to assess how things may have been different had the bridge not been built, it is clear that the bridge has been a factor. The decline in freight traffic on this route since 1999 reflects the declining economy, the salmon farming industry transferring business from the Calmac ferries to their own boats and freighters, and the Sound of Harris service allowing greater consolidation of freight on the Stornoway to Ullapool route.

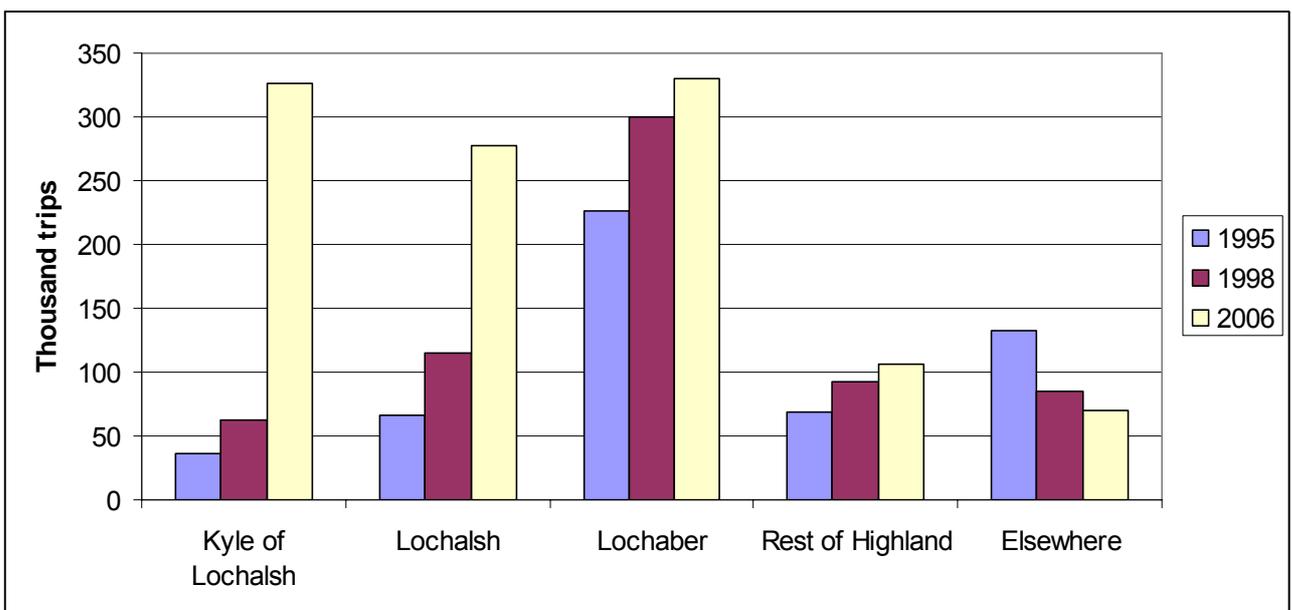
- The Oban-Castlebay-Lochboisdale route appears to have lost freight traffic to the Kyle-Kyleakin-Uig-Tarbert-Lochmaddy route during the 1990s. This is likely to be partly due to the growing strength of the Inverness economy making the Oban route less attractive but will also be related to the lower costs of the route via Skye.

3.18 The 24 hour ferries and the Skye Bridge have therefore had the greatest impact on travel to Uist. The traffic volumes are however very small compared to the scale of the changes at Kyle. The user benefits are therefore marginal but the wider economic benefits in helping to support the Uist economy may be more significant.

Trip distribution

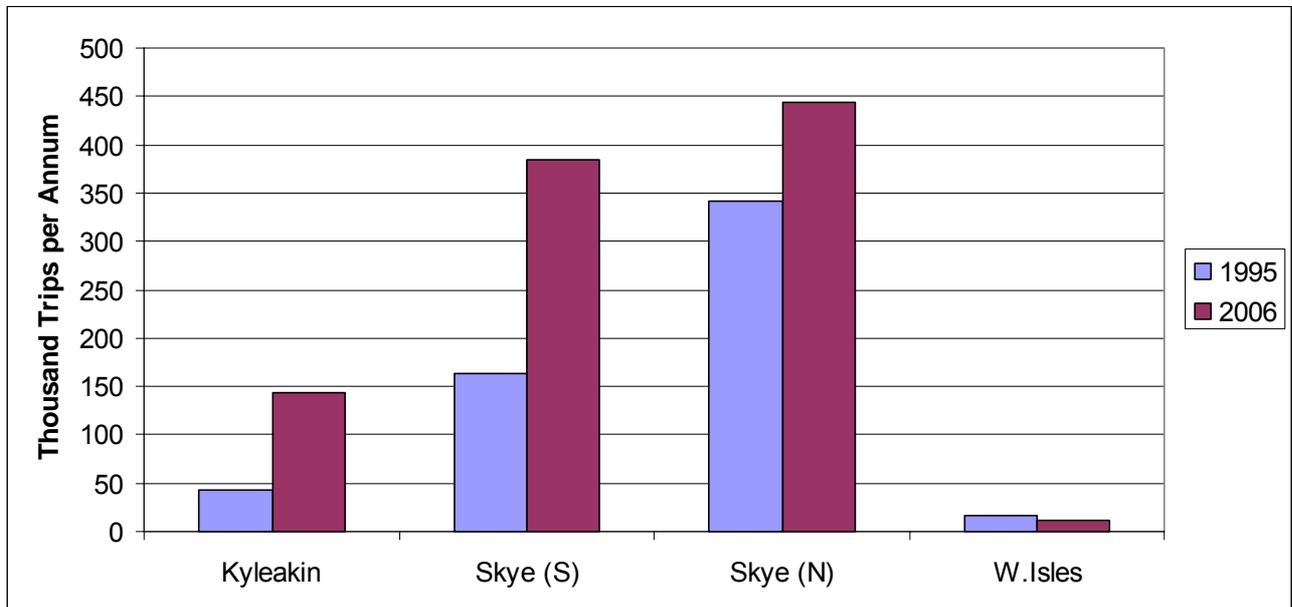
3.19 The origin location of vehicle trips to Skye has changed as shown in Figure 3.5. The removal of the bridge tolls has resulted in very strong growth in the local trips between Kyleakin/South Skye and Kyle of Lochalsh/Lochalsh.

Figure 3.5 – Mainland to Skye Vehicle Travel Demand (1995, 1998, 2006)



- 3.20 The growth in the rest of Highland category relative to elsewhere may reflect the growing relative importance of the Inverness economy relative to elsewhere. There has also been increasing use of Inverness Airport as an entry point to the Highlands relative to central belt and further afield. The sum of the rest of Highland and Elsewhere categories is roughly constant over the period suggesting that, overall, Skye and Lochalsh is no more dependent on travel to the rest of Scotland than prior to the bridge.
- 3.21 The zoning system in 1998 has only two zones on Skye (Kyleakin and Rest of Skye) so a more useful comparison is between the 1995 and 2006 data as shown in Figure 3.6.

Figure 3.6 – Vehicle Travel Demand by Region of Skye (1995, 2006)



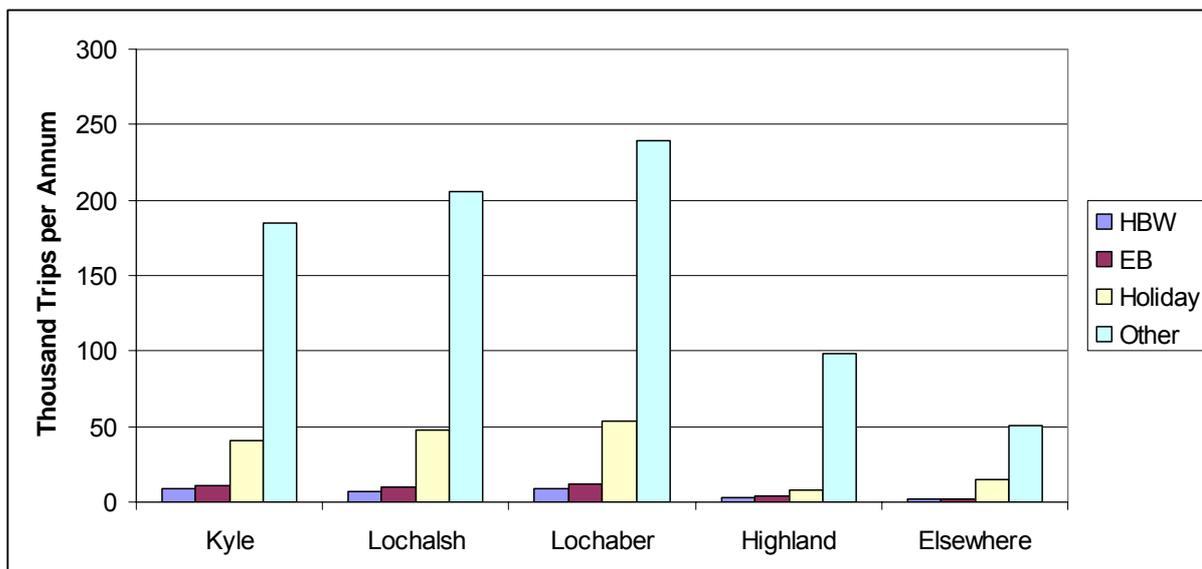
- 3.22 Given the small size of Kyleakin the growth in trips is very large accounting for 24% of the growth across the bridge. The very close proximity of Kyleakin to Kyle of Lochalsh means that the economies of the two places are becoming strongly linked. Overall, 53% of the vehicle trip growth is for south Skye. The slight decline to the Western isles is not significant given the small sample size in the surveys.
- 3.23 Despite this growth in trips between Skye and the mainland, the number of trips on and off the island per resident is still less than for the Island of Mull. The comparison of trips in Table 3.1 is as much a reflection of the dependence of the local population on tourism, as on the need for residents to access goods and services on the mainland. Therefore, although people in South Skye are making many more trips to the mainland, the travel patterns overall are consistent with its island status.

Table 3.1 - Number of People Travelling to Larger Scottish West Coast Islands per Head of Island Population

	Population (2001 census)	Trips on/ off the island per island resident per annum	Total trips to island 2005
Mull	2667	289	772
Skye	9232	186	1719
Arran	5058	157	796
Bute	7149	144	1030
Lewis and Harris	19918	17	343

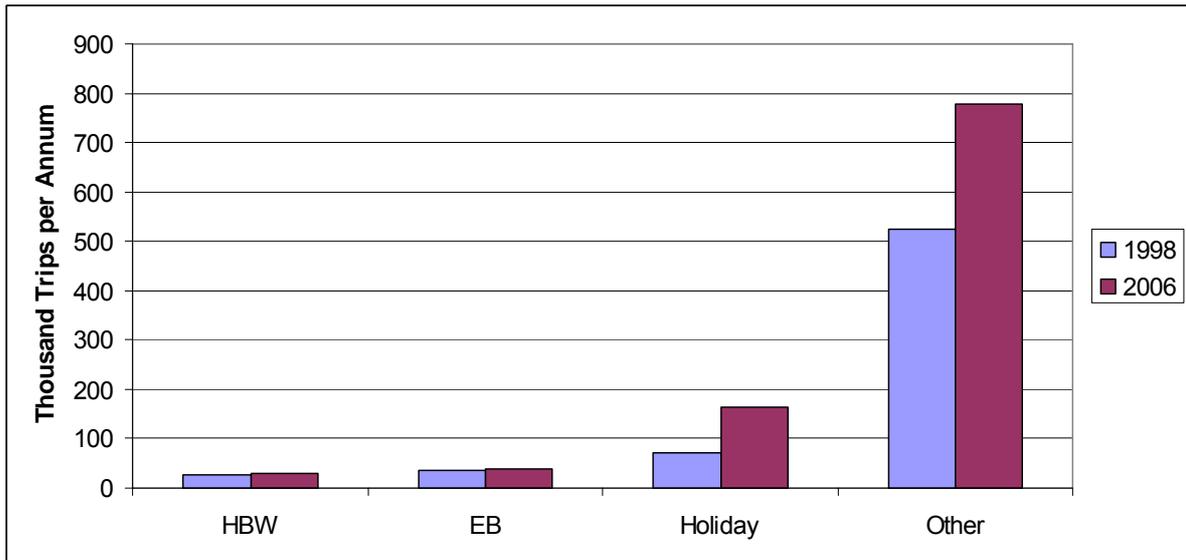
3.24 Based on the 2006 travel surveys it can be seen from Figure 3.7 that by far the largest group of trips across the bridge is for shopping, health, education, and personal business, as shown under the category “other”. Home based work (HBW) and employers business (EB) account for a relatively low number of trips.

Figure 3.7 – Bridge Trips by Purpose 2006



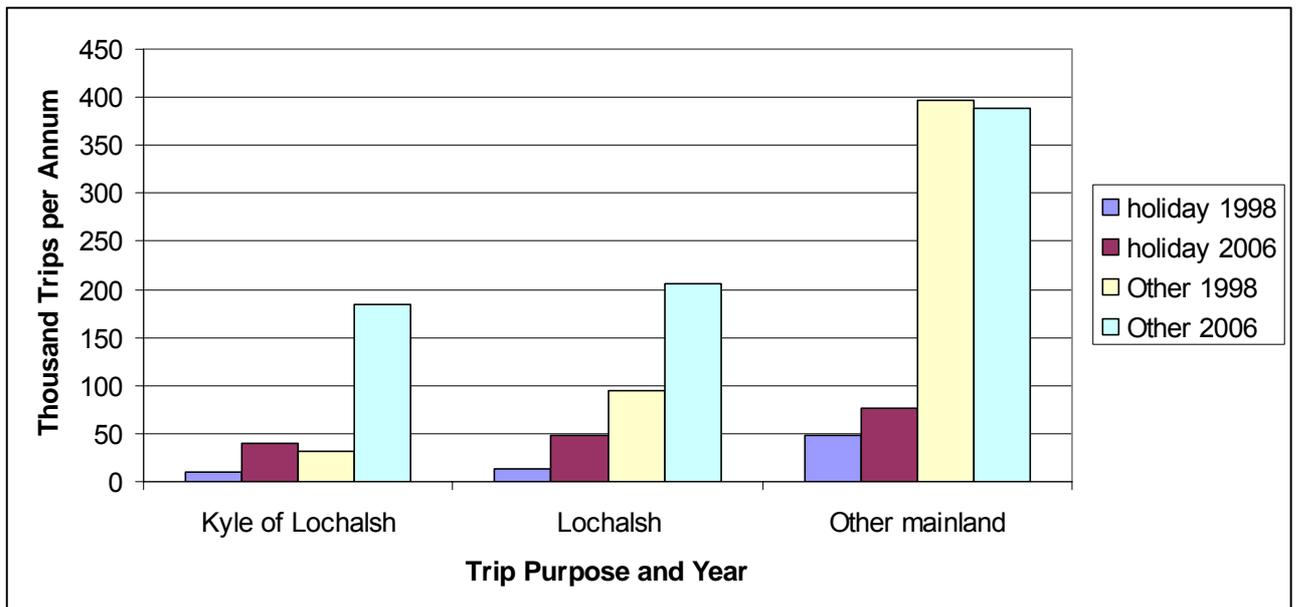
3.25 Complete data by purpose is not available for earlier years but a comparison of available data from 1998 and 2006 is shown in Figure 3.8. This shows that the growth in trips has been modest for work and employer’s business but greatest for leisure/holiday and shopping/personal business trips.

Figure 3.8 – Trips by Purpose for 1998 and 2006



3.26 Further analysis shows that this growth in holiday trips is spread across all mainland zones (Figure 3.9). However for the local shopping and personal business trips the growth has been greatest for Kyle of Lochalsh.

Figure 3.9 – Trip Growth by Trip Purpose and Zone



Overview of changes in travel patterns

3.27 Overall the main changes that have been observed in travel patterns are that:

- There has been a significant and broadly consistent increase in traffic on the Kyle-Kyleakin crossing since 1985. The introduction of the bridge produced a 20% increase in traffic and the introduction

of enhanced discounted tickets in 1998 accelerated this rate of growth. The abolition of the tolls has already delivered a 50% increase.

- The removal of the tolls has led to a very large increase in local vehicle trips from Lochalsh and South Skye.
- Trip growth has been largely for shopping, health, and personal business. Focus group findings suggest that local residents now have more choice and there is greater competition in local retail markets.
- Developments at the Kyle-Kyleakin crossing have only a minor effect on the use of other ferry routes. There has been no abstraction from the Ullapool Stornoway route and routes via Skye to Uist have become relatively more popular.
- There has been a large fall in pedestrian traffic. When the bridge opened about a third of this switched mode to a new shuttle bus service, but over time this has declined and the removal of the bridge tolls resulted in very little use of the shuttle bus, ultimately leading to it being discontinued. Focus group findings suggest that these trips have either been suppressed or have shifted mode to car.
- The mix of traffic by vehicle type has remained largely consistent on all routes. Although numbers are small, bus services on the Mallaig route have grown, possibly as a result of the use of circular coach tours using the service one way only.

4.0 Economic Benefits

- 4.1 As discussed in Chapter 3, the economic benefits of the bridge can be measured by summing the willingness-to-pay of users for the different direct transport impacts of the bridge and any non-use value associated with the bridge. Users and non-users are willing to pay for the direct transport savings associated with the bridge because the final impacts delivered by these savings have value to them.
- 4.2 For a fixed link, benefits arise from:
- Changes in fares/tolls;
 - Changes in vehicle operating costs due to longer distances of travel;
 - Travel time changes;
 - Changes in inconvenience costs - the willingness to pay of users for a fixed link relative to a ferry. This is above the price they are willing to pay for time and out of pocket cost savings (see Appendix K).
 - Changes in comfort, reliability and image;
 - Changes in agglomeration – the benefits associated with businesses being in close proximity to one another, to employees and to customers. These are additional to the time and cost efficiency savings that businesses may make.
 - Changes in the vitality of a community and reduced uncertainty regarding the future.
- 4.3 The 1992 economic appraisal of the Skye bridge to assess the business case for its construction took account of the first three sources of benefit in relation to vehicular travel assuming a fixed trip matrix.

The Do Nothing, Do Minimum and Do Something

- 4.4 Appraisals compare a Do Minimum with a Do Something. For an ex-ante appraisal the challenge is to define the travel demands and user costs in the Do Something, whereas for the ex-post appraisal – as we have here – the challenge is to define the Do Minimum. That is we need to define what would have happened if the Skye Bridge had never been constructed, or the bridge had never been made toll-free.
- 4.5 Traffic growth in rural Scotland has increased at about 1.5% per annum over the period 1995 to 2006. In the absence of the Skye Bridge it seems realistic to assume that such a 'background growth' trend would also apply to traffic on the Kyle-Kyleakin crossing.
- 4.6 The Do-Nothing situation takes the existing ferry frequency and capacity as fixed. If the bridge had not opened in 1995 then based on the observed traffic growth, peak delays would have grown steadily without a further major upgrade of ferry capacity. The maximum practical

operating capacity of the ferries of 156 vehicles per hour³ was exceeded for only 121 hours in 1998 but by 2005, the first year without the tolls, flows exceeded this level for 1228 hours. Clearly however the observed flow in 2006 would not have occurred if there had been no bridge or if tolls were still in place. Nevertheless, even if the induced traffic is excluded from the analysis, there would still have been some congestion at the ferries in a Do-Nothing situation. Peak summer traffic, including for events such as the Skye music festival would have been subject to significant delays.

- 4.7 Clearly such a situation would have proven unacceptable, and some upgrading of the route would have had to occur. The upgraded route, with increased capacity to maintain 2006 quality of service and delays at 1995 levels, represents the Do Minimum. The user benefits have been calculated for both Do-Nothing and Do-Minimum scenarios.
- 4.8 The bulk of the induced vehicle travel from the removal of tolls at the end of 2004 has been for short trips. However, offsetting this is the loss of 410,000 local pedestrian journeys per year between 1995 and 2005. It may be that one of the reasons for the high level of induced local vehicle trips, when the toll was removed, was that there was a relatively high level of suppressed pedestrian trips created as part of the bridge construction.
- 4.9 The relationship between the pedestrian trips and the local vehicle traffic is complex. The baseline studies in 1995 identified that when the ferries were in place, people would drive from south Skye to Kyleakin and cross free of charge as foot passengers to shop and visit facilities in Kyle of Lochalsh. The focus groups in 2006 suggested that people from South Skye made greater use of shops and facilities in Broadford whilst the toll was in place.
- 4.10 When the ferries were replaced by the bridge, many very local pedestrian trips must have been suppressed. There was no sudden change in the traffic count data at Kyle of Lochalsh or Broadford, and from the limited data on vehicle occupancies, increased passenger numbers in cars has not been a major effect. If the change in pedestrian traffic has resulted mainly from longer Park and Ferry Ride trips, then the loss of over 250,000 vehicle trips would have been visible from the traffic counts. Although this effect may be being masked by growth in longer distance trips, it is clear that the communities of Kyle of Lochalsh and Kyleakin were much more closely integrated prior to the bridge.
- 4.11 Since the bridge became free, the increase in car journeys is still greater than can be accounted for by a return of these pedestrian trips to the network. The uncertainty about the relative levels of modal shift and induced travel, means that the money cost to travel demand elasticities from Skye Bridge cannot be directly transferred to other locations. However the household survey data on trip making and transport expenditure appears to demonstrate that in a remote area

³ Assuming 8% HGV/PSV

such as this, travel behaviour is relatively more sensitive to money costs. It appears that the behavioural values of travel time are very low for some people if the changes in trip making reported in individual household travel diaries is accurate.

- 4.12 Overall the large increase in trip making emphasises that providing step-changes in accessibility can result in relatively high levels of induced travel.

User Benefits

- 4.13 Table 4.1 summarises the 2006 single year user benefits of moving from a 24 hour ferry to a toll-free bridge. It also details the incremental benefits from the gradual improvements in quality on the Kyle-Kyleakin crossing. The values of time and vehicle operating cost (VOCs) have been taken from webTAG as required by Scottish Transport Appraisal Guidance.

Table 4.1 – 2006 Single year user Benefits (£000s)⁴

Scenario	Motorised Traffic				Pedestrians		Total	Percentage of benefit delivered by each incremental improvement
	Time	VOCs	Fares/Tolls	Inconvenience costs	Time	Fares/Tolls		
From Do Nothing (delay at ferry) to Do Minimum (zero delay at ferry)	2,309	0	0	0	0	0	2,309	N/A
From 24hr ferry (zero delay) to Bridge	2,135	-80	184	1,541	-188	-126	3,465	35%
Incremental benefit of reducing bridge tolls	0	0	494	0	0	0	494	5%
Incremental benefit of removing bridge tolls	432	0	5,515	0	0	0	5,947	60%
From 24hr ferry (zero delay) to toll-free bridge	2,567	-80	6,193	1,541	-188	-126	9,906	100%
From Do-Nothing to toll-free bridge	4,876	-80	6,193	1,541	-188	-126	12,215	N/A

- 4.14 Based on observed travel patterns from the surveys, the 2006 economic benefits of the toll-free bridge compared to the ferry service are estimated to be £9.9 million (2006 prices and values). This includes the observed changes in travel by all modes. Induced trips are valued using the rule of a half as required by STAG. All assumptions in the calculations are described in Appendix C, including assumed vehicle loadings where actual data are not available.

- 4.15 Of these benefits:

- Three-fifths of the benefit comes from the removal of tolls.
- Just over a third comes from the replacement of the ferry with a tolled-bridge.

- 4.16 In reality the benefits are greater since congestion would have grown at the ferries. Survey data cannot show what the delays would have been, but based on model results of queuing and delays at the ferries it is

⁴ 2006 prices and values

estimated that the average congestion delay would rise from zero minutes in 1995 to 5 minutes in 2000 and 16 minutes in 2005. Based on these additional delays, a more accurate 2006 single year comparison of the ferries with the toll free bridge is estimated to be £12.2 million (2006 prices and values).

- 4.17 Time savings comprise 24% of the benefits of the bridge. Reductions in user costs (VOCs and tolls) account for 61%.
- 4.18 The remaining 15% is accounted for by inconvenience costs, which do not normally feature in a STAG appraisal, but which are increasingly being recognised as important when considering fixed links (e.g. the Norwegian approach as discussed in Appendix K). As discussed in Chapter 2, the inconvenience benefits are related to not needing to wait for a ferry, and are additional to the time savings made. There are no existing appraisal rules for ferry services and fixed links, but the Passenger Demand Forecasting Handbook has been used. This follows standard rail industry approaches for headway changes. For the user benefit calculations in Table 4.1, the Handbook identifies that a timesaving of 10 minutes should be used. This represents a change from a 10 minute frequency ferry service to the bridge always being available.
- 4.19 Although the rail based approach is relevant to high frequency ferry services, it would not be appropriate for fixed link replacements for lower frequency services. In these cases the Norwegian appraisal guidance summarised in Appendix K would provide a better basis for the calculation of inconvenience costs.
- 4.20 The 1995 traffic flow data was used to calculate the approximate single year benefits at the time of opening as £2.942 million at 2006 prices and 1995 values. In this year, the total benefit is the same for both Do-Minimum and Do-Nothing scenarios since traffic levels have not grown sufficiently at that stage to impose additional congestion delays.
- 4.21 Based on a linear growth in the time and cost savings between 1995 and 2004 when the tolls were removed, and a linear growth between 2004 and 2006 with the free bridge, the yearly benefits compared with the Do-Nothing comparison have been discounted and summed to calculate the total benefit to date at 2006 values and prices as £93.560 million.
- 4.22 Forecasting of traffic growth is not possible based on the analysis undertaken for this work, but there will also be substantial benefits in the future. Current transport appraisal discounts these over a 60 year period. Even assuming low future growth of traffic, the 60 year benefit is likely to be in excess of £400 million at 2006 values and prices. This compares to a construction cost in 2006 prices of less than £100 million.
- 4.23 There are no webTAG values for reliability and comfort, though as Table 4.2 demonstrates some user benefits associated with improvements in these attributes would be expected. A comparison of the 1995 and 2006 household, visitor and business surveys shows that

the bridge is increasingly being viewed as an asset and is perceived positively. Comparing the 24 hour ferry with the free bridge the positive and negative factors identified are summarised in Table 4.2.

Table 4.2 – Reliability, Comfort and Information Factors

	Positive	Negative
<i>Free Bridge Compared with Ferry</i>		
Reliability	<ul style="list-style-type: none"> Ferry reliability problems eliminated 	<ul style="list-style-type: none"> Some closures of bridge in high wind Unpredictable delays at tolls.
Comfort	<ul style="list-style-type: none"> View from the bridge 	<ul style="list-style-type: none"> Loss of ferry experience
Information	<ul style="list-style-type: none"> Perception of "picture postcard" bridge. 	<ul style="list-style-type: none"> Loss of advertising through calmac publicity
<i>Free Bridge Compared with Toll bridge</i>		
Information	<ul style="list-style-type: none"> Publicity about free bridge. 	<ul style="list-style-type: none"> Skye bridge toll controversy provided significant free advertising but has been lost. Tourist and travel information previously handed out at the toll booths

Distribution of user benefits

- 4.24 The analysis indicates that it is trips to/from Highland or further afield derive nearly 80% of the benefit from the bridge construction. The local trip suppression is also a significant and uncertain factor in reducing the local benefits. In contrast, local trips in South Skye and Lochalsh receive about 40% of the benefit from the toll-removal. This reinforces the comments made in Chapter 3 that in remote areas the local travel cost to demand elasticities can be very much higher than in other parts of the country where there is already greater choice.
- 4.25 However, average values of time conceal benefits specific to particular market segments. For low income groups, money costs can be a significant deterrent to travel. Some travellers also regard time as less valuable, but high income groups tend to value time highly. It is not possible to undertake an analysis, which correctly reflects the behavioural and resource values of time for each individual. The toll removal favours those who value money highly, whilst the ferry replacement favours those that value time highly.
- 4.26 Assessing benefits for target population groups separately from the aggregate analysis is important. For some people, improved access to health can yield disproportionate benefits in terms of seeking treatment earlier, and for others the removal of the toll might make a greater change in perception of travel horizons than others. These distributional issues can be relatively more important in the Highlands, where rural development objectives lead to higher than average expenditure in service delivery.
- 4.27 The accessibility analysis undertaken for the Skye area reported in Chapter 7 shows that perceptions of accessibility are closely linked with lifestyle choices. Supporting competitive rural lifestyle choices is an important part of rural development and transport investment is a significant factor.

Other economic benefits

- 4.28 The household and business surveys did not identify any significant agglomeration effects as a consequence of the introduction of the bridge nor the removal of tolls. This is consistent with evidence from the west coast of Norway. We therefore expect the economic benefits to businesses to be driven by efficiency savings made through time and cost reductions. These efficiency savings are included in the user benefit calculation.
- 4.29 Householders and businesses may hold a non-use value for the fixed link over a 24 hour ferry related to reduced levels uncertainty. The international literature on this subject does not identify an economic value that could be ascribed to such a non-use value. If such a value exists and is positive, it would be additional to the user benefits described in Table 4.1.

5.0 Impacts on Business

5.1 To assess the impacts on businesses, various data sources have been reviewed including:

- General economic statistics.
- Data from employment trends.
- Business surveys in 1995, 1998 and 2006.

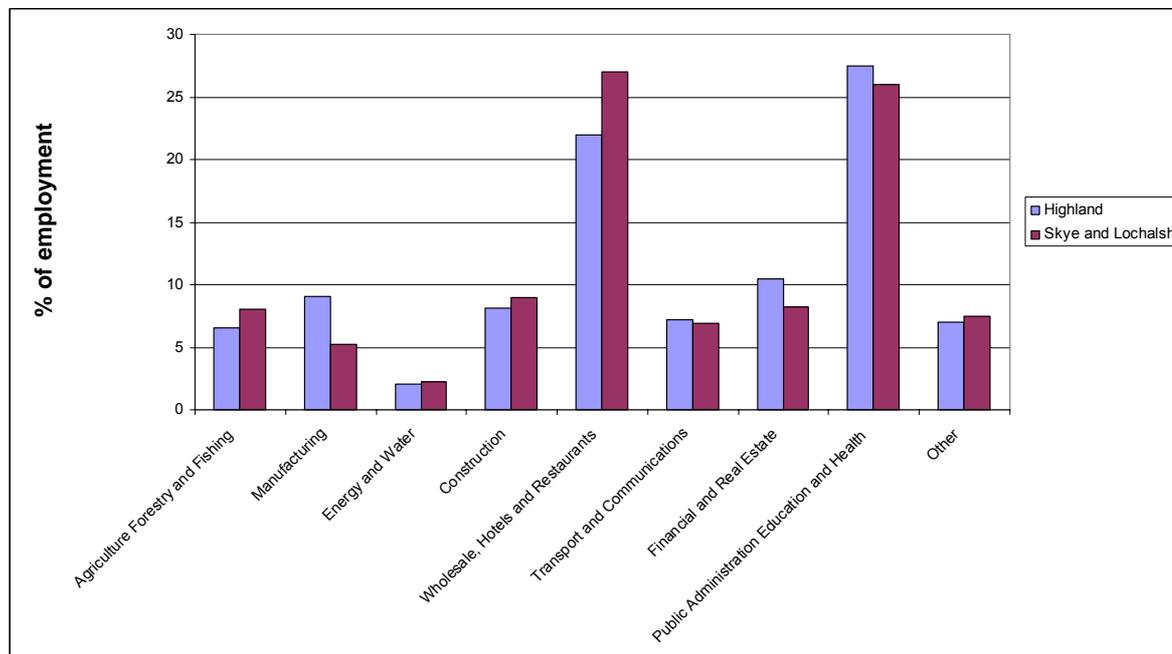
5.2 This chapter starts by discussing the trends, before reviewing the probable impacts of the bridge and tolling changes. A summary of the 2006 surveys is provided at Appendix D.

The local economy

5.3 An overview of the characteristics of the local economy and how it relates to the rest of Highland is shown at Appendix I. Gross value added in the Skye and Lochalsh area is just over £100 million per year comprising less than 3% of the Highland and Islands economy.

5.4 Over 50% of the employment in Skye and Lochalsh is in two sectors: public administration and hotels and restaurants. Figure 5.1 also shows that agriculture, forestry and fishing and construction sectors have a stronger presence in Skye and Lochalsh than the average for the Highlands.

Figure 5.1 - % of Employment by Sector



GROS 2001 census

5.5 The construction sector sometimes benefits from the protection offered by island economies due to the relatively high cost of transport and accommodation for labour intensive activities. The importance of this sector to Skye also reflects the strength of the house building sector and associated rising land values in the area recent years.

- 5.6 The unemployment rate in Skye and Lochalsh is higher than for the Highlands as a whole, reflecting the higher than average reliance on seasonal industries particularly tourism.
- 5.7 There is a greater proportion of small firms than the Highland average, the business start-up rate is relatively high and nearly 50% of in-migrants come from outside Scotland.

Sectoral analysis

- 5.8 Table 5.1 summarises the observed business trends by sector. These trends in the local economy cannot be directly related to the bridge but the Skye Bridge construction and toll removal will have been important contributory factors affecting the trends.

Table 5.1 – Business Trends by Sector

Sector	Trends in the Local Economy
Retail and restaurant	<ul style="list-style-type: none"> • Increased retail business in the larger settlements • Some loss of trade in Kyle from business reliant on passing traffic • Loss of business in Kyleakin. In particular, the local shop will not survive the removal of the tolls and is considering either closure or investment to convert to a coffee shop. • Growth sectors are at the high quality end of the market but investment challenges are still daunting for some firms.
Transport businesses and hauliers	<ul style="list-style-type: none"> • There have been significant changes in the haulage sector with more national firms making their own deliveries rather than subcontracting to Skye Express or other local firms.
Tourist businesses	<ul style="list-style-type: none"> • Entrepreneurial tourist businesses are thriving – e.g. Aros centre developing markets with strong year on year growth
Hotel/facility providers	<ul style="list-style-type: none"> • There is some weak evidence that businesses are experiencing shorter lengths of stay but increased business since the tolls have been removed. • Although some hotels and bed and breakfasts highlight low occupancy and weakening markets tourists are more concerned about the lack of quality accommodation.
Coach tour companies	<ul style="list-style-type: none"> • Stable market constrained by accommodation and time factors.
Micro businesses and new business start ups	<ul style="list-style-type: none"> • Strong growth and performance of new cottage industry businesses.
Construction and building supplies	<ul style="list-style-type: none"> • There is more all-year round work for the building trade as a result of increased house building activity. Holiday homes are more attractive on the island as a result of improved access. • Hardware and building retailer Jewson's in Broadford identified significant increases in custom from the mainland after the removal of the bridge tolls.
Public transport operators	<ul style="list-style-type: none"> • The local Skye operator has recently been unsuccessful on several tenders.
Primary product (quarrying/mining/forestry)	<ul style="list-style-type: none"> • Weak growth largely related to decline of Skye Marble

Relative impacts of bridge and tolls

- 5.9 Most of these impacts have been apparent from the business surveys since 1995 so the extent to which current effects are long term impacts

from the introduction of the 24 hour ferries or short term impacts from the toll is complex.

- 5.10 To assist in disentangling the impacts, Table 5.2 summarises the perceived impacts of the bridge from the business surveys in 1995, 1998 and 2006. This highlights the issues that were perceived to be of greatest importance at each stage. In each of the surveys impacts on seven factors were assessed:
- Sales to existing markets
 - Sales to new markets
 - Recruitment of staff
 - Investment
 - Attractiveness of location
 - Competition
- 5.11 In the 1995 and 1998 surveys, all average scores were negative whilst in the 2006 survey almost all scores were positive. The bridge is therefore now seen as much more of an asset than it was, and the toll removal appears to be the main factor affecting this perception.
- 5.12 To allow a comparison of the relative importance of each factor over time, the six factors common to the three business surveys have been ranked. Prior to the opening of the bridge it appears that businesses were more optimistic about the impacts on investment levels, but instead experienced greater benefits from recruitment and the attractiveness of the location.
- 5.13 The time series of surveys also shows that competition and market benefits have become more important to business due to their local market impacts than for export orientated businesses.

Table 5.2 – Perceived Benefits of the Skye Bridge

Factor	1995	1998		2006	
		<i>Local</i>	<i>Exporting</i>	<i>Local</i>	<i>Exporting</i>
Improved sales to existing markets	1	1	1	1	2
Improved sales to new markets	2	2	2	2	6
Recruitment easier	5	4	4	6	1
Investment	3	5	6	5	4
Attractiveness of location	4	3	5	4	3
Competition	6	6	3	3	5

- 5.14 Positive and negative effects demonstrate the changes taking place in the local economy, and show that there are winners and losers even within the same sector. The transport changes are one contributory factor and help successful businesses to perform better. Examples of effects identified by businesses include:
- Hardware and building retailer Jewson's in Broadford identified significant increases in custom from the Mainland after the removal of the bridge tolls. There is no evidence of negative local impacts

on the mainland so it is likely that Lochalsh would have otherwise been served by suppliers further afield in Lochaber or Inverness.

- Some shops in Kyle and Plockton identified more custom from Skye based visitors and residents. However other businesses in Kyle indicated that the removal of the tolls has meant that fewer people stop (for shopping and accommodation) en route to Skye, negatively affecting business.
- A perceived increase in overnight stays particularly for low cost accommodation camper / caravans. This may be partly due to publicity in magazines about the removal of the bridge toll.
- Loss of income to businesses in Kyleakin unable to compete with nearby firms in Kyle of Lochalsh.
- The frequency of supplies and deliveries has not changed for longer distance trips but has increased for local trips across the bridge.

5.15 Some factors have been perceived both positively and negatively. These include:

- Length of tourist stay as an opportunity to grow new markets and as a threat on traditional longer stays.
- The increase in day trippers as an opportunity for new business and a concern about crime.
- Opening up markets between Skye and the Mainland for both retail and tourism based activities.
- Publicity related to the tolls and toll removal including both positive and negative perspectives on the image of the area

5.16 Overall, businesses survey responses are much more dominated by wider market effects than the building of the bridge and removal of the tolls. Businesses were generally not able to quantify the changes in turnover or attribute impacts solely to the bridge.

Deliveries and Supplies

5.17 Economic linkages between businesses, as indicated by deliveries and supplies, appear to have been largely unaffected by the bridge construction and toll removal. The 2006 business surveys sought data on the origins and value of deliveries and supplies, but most firms were unable to provide this level of detail in their response. Most of the companies noted that costs of materials included transport so the impacts of the toll removal had not impact on their business.

5.18 The 22% of businesses that made their own delivery of goods to customers were able to explain the impacts in more detail. Of these, about 20% (i.e. 6 businesses) had increased the frequency of deliveries since the removal of the tolls. One of these (Jewson in Broadford) was as a result of increased custom from the mainland. One other business (Skye Cullin Marble) previously combined trips to avoid repeat paying of

toll charges, but the extra trips resulted in more fuel use so the main benefits were better access to customers. If Skye Cullin Marble have assessed their customer needs correctly (i.e. that more regular deliveries are more important than lower costs), then the abolition of the tolls allowing extra trips should have increased competitiveness. However there was limited evidence of the scale or significance of this effect. One example of a positive impact was for Forest Enterprise who indicated that they are able to export low value timber more competitively due to toll saving of £1.60 per tonne. They considered that this level of reduction increases their competitiveness for low value products, but has little impact on the higher value products.

- 5.19 No businesses indicated that there had been any change in routes used for deliveries to customers as a result of the toll removal.
- 5.20 There has been no significant change in the patterns of distribution of goods since the 1995 and 1998 surveys. Approximately 50% of goods are delivered to the Skye and Lochalsh area. Table 5.3 shows the location of deliveries made by businesses surveyed in Skye and Lochalsh.
- 5.21 There were expectations in the earlier reviews that there might be particular benefits for exporting sectors, but the data reinforce the findings above from the business perceptions showing that any benefits are at the margin and appear to relate to fairly low value products.

Table 5.3 - Locations of Business Deliveries by Sector 2006

Business Sector	No. Businesses	% of Business Deliveries by Location (Not Weighted by Goods Value) ⁵ .						TOTAL
		South Skye	Kyle of Lochalsh	Skye / Raasay	Elsewhere in Scotland	Elsewhere in UK	Overseas	
Agriculture, Hunting, Forestry	3	22	23	22	12	12	10	100
Fishing	2	30	5	30	35			100
Manufacturing	1	20	20	20	40			100
Construction	2	30	5	30	5	5	5	100
Wholesale & Retail Trade	10	17	12	14	14	19	26	100
Transport, Storage And Communication	1	30	35	35				100
ALL BUSINESSES	19	21	14	22	19	12	13	100

- 5.22 There are more significant differences suggested between the business surveys regarding supplies of goods:

⁵ These values use data provided by businesses on the proportion of their total deliveries made to different geographical locations and have not been weighted by volume / value of goods delivered due to a lack of data provided consistently by businesses. As a result all business deliveries are treated equally, irrespective of value, volume or frequency. Figures are therefore only representative of the geographical distribution of deliveries.

- Four businesses, all in the retail / wholesale sector, indicated an increase in the delivery frequency of supplies since the removal of the tolls. The reasons for this were complex and related to general concepts such as convenience which could not be defined more clearly in terms of productivity, storage costs or other potential financial benefits to the businesses.
- Some but not all suppliers still apply island costs and restrictions to Skye even though there is a free bridge. This emphasises that the full effects of the toll removal have yet to occur.
- Of those who have said there has been a change in the cost of receiving supplies, most stated that there has been a slight increase in the cost of deliveries because of fuel price increases but some noted the decrease in delivery costs due to the removal of the Skye Bridge tolls.
- Less than 20% of exporting businesses used their own vehicles to receive supplies in the 2006 survey compared with around a third of exporting businesses in the 1998 survey. This could simply relate to changes in the business sample, but it is likely to reflect changes in freight and haulage industries.

5.23 Most supplies were being delivered from elsewhere in the Highlands or elsewhere in Scotland, using hauliers. Only the hotel / restaurant and manufacturing sectors were sourcing significant supplies locally.

5.24 No businesses indicated a change in delivery route.

5.25 Table 5.4 shows sources of supplies by business sector.

Table 5.4 - Locations of Suppliers to Businesses by Sector 2006

Business Sector	No. Businesses	% of Business Supply by Location (not weighted by value)								TOTAL
		South Skye	Kyle of Lochalsh	Skye / Raasay	Western Isles	Highlands / Islands	Elsewhere in Scotland	Elsewhere in UK	Overseas	
Agriculture, Hunting, Forestry	2	0	0	0	0	32	35	17	17	100
Fishing	3	6	7	7	0	35	35	5	5	100
Manufacturing	3	12	12	12	0	25	30	10	0	100
Construction	3	0	0	0	0	72	14	14	0	100
Wholesale & Retail Trade	21	0	0	1	0	7	58	31	2	100
Hotels & Restaurants	20	6	8	16	5	25	25	13	2	100
Transport, Storage And Communication	2	0	0	0	0	95	5	0	0	100
Other Community, Social & Recreational	3	0	0	3	0	33	63	0	0	100

Transport Sector

5.26 Detailed interviews with transport sector companies show that:

- Fuel costs, and particularly recent significant increase in prices have had a much greater impact on costs than the tolls. Overall, toll costs were relatively small compared with other operating costs for fuel, staff, maintenance etc. The companies could only quote very aggregate figures related to their total use of the bridge and total fuel costs so they may not be aware, at least at a management level, of the significance of the toll savings for specific local trips.
- The possible exception to this is in the heavy haulage sector, which has declined on Skye. High volumes and low margins make the tolls relatively more significant. However the decline is more closely related to the changing business needs of Skye Marble than any toll factor.
- Courier services are growing and the removal of the tolls has been one factor in the development of national courier networks, which increasingly cover Skye (e.g. the decision of TNT to open a Skye depot). The national policies of these companies mean that cost structures for customers are not directly related to the presence of a bridge or any local toll. However, increasing inclusion on national courier networks means that Skye customers will now be able to receive next day services into Skye and two day services out of Skye and benefit from lower costs (since Skye residents and businesses will no longer be charged a surcharge to deliver to the area).
- Hauliers report a significant increase in e- and telephone direct business to customer commerce, requiring delivery to households. Clients for courier services are also changing. One company indicated that 25% of business now comes directly from residents on Skye buying more and larger goods in Inverness and requiring transport to return them to the Island.
- Most work for the non national hauliers (i.e. Skye Transport, AJG, Skye Express) is via subcontracting for national companies. In general, transport and courier services is a growth sector. The Skye bridge changes help to ensure that the area is connected into these networks. Employment in the transport sector can be important for remote economies such as in Skye and Lochalsh.

New businesses and business growth

- 5.27 Growth of cottage industries was already happening without the bridge. This is continuing and is not considered to be dependent directly on the bridge. However it is indirectly linked with lifestyle choice as Skye is becoming a more attractive place to live and work. These businesses allow people to remain economically active whilst living in a lifestyle location.
- 5.28 In particular, Sleat was in need of a boost. New businesses have been able to thrive in recent years with some cottage industries developing. The bridge is not identified as one of the most important factors but it is

likely to be acting indirectly on business confidence in the area encouraging more people to live and work in South Skye.

- 5.29 Improved opportunities for recruitment in south Skye and Lochalsh is identified as one of the most tangible positive impacts of the bridge. The toll removal has widened local job markets, particularly for low paid jobs where the toll could potentially acted as a barrier to taking up employment. Labour shortages can be one of the greatest barriers to business growth, and the ability to pool labour within a wider area helps businesses to manage labour supply within the highly seasonal economy of the area.
- 5.30 More generally the bridge has opened up opportunities and helped to overcome barriers to growth. The impacts could probably have been greater if there were more local entrepreneurs able to capitalise on the benefits. The business surveys show that where businesses have responded to new opportunities they have done well. The Bridge has made Skye a better place to live and work. Over time this should mean that the new economic opportunities are captured through more new businesses and growth of existing firms.

Tourism

- 5.31 The bridge has allowed Skye to benefit from the growing market for short stay tourist trips, with strong growth in coach tours. The coach operators have been able to offer more competitive packages as a result of the toll removal so this market has grown. However the quality and suitability of local tourist accommodation continues to be a constraint as it was prior to the bridge being built. High quality hotels on Skye do not have the capacity to cater for coach tours.
- 5.32 These business perceptions are confirmed by general monitoring of tourist attitudes in the Highland Visitor Survey. Transport generally is perceived as being of poor quality but the transport factors of greatest concern in the 1997 and 2002 Highland Visitor Surveys were poor public transport and general road condition and maintenance. Although the high cost of visiting Skye was mentioned as a factor for some people, the bridge tolls were not mentioned in either the 1997 or 2002 surveys as a significant factor relative to accommodation. Other more general surveys of tourist numbers in the area show that in broad terms numbers are related to wider tourist markets and no relationship with the bridge investment is identifiable.
- 5.33 There are concerns amongst local people on Skye about the perceived shorter stays and more day trippers as a result of the toll removal, but neither the traffic surveys nor visitor surveys identify changes that are different from the visitor market across the Highlands. The bridge does not therefore appear to have been a major factor.
- 5.34 There were 20 small bed and breakfast businesses surveyed and the consistent experience was of fairly static markets. These businesses were not either seeking to expand or making significant investment, but

expected to continue to remain viable. Hotels report being busy but did not consider that the changes at the Bridge had made any impact.

- 5.35 Campsites report having been very busy since the tolls were removed. The available data does not lend itself to identifying trends in niche markets such as camping or hill-walking, or allow comparisons with other parts of Scotland. However the local perceptions from focus groups appear to confirm that these have been strong growth markets. Despite the absence of data for campsites before and after the toll removal, it is interesting that the greatest impacts from the tolls are being reported for the low cost accommodation sector where price might be expected to have the greatest impact. However, relative to other parts of the Highlands Skye has attracted wealthier visitors (Highland Visitor Survey 1997 and 2002). It may simply be that Skye is therefore catching up with broader trends, and participating in the general growth in tourism made possible due to low cost airlines. The surveys show that most tourists have no prior knowledge of the presence or absence of the bridge toll when planning their travel and destination.
- 5.36 Tourist orientated businesses such as the Aros centre in Portree have helped underpin a very large growth in day trips to Skye through their marketing. The bridge has clearly been a factor in making Skye competitive as a day trip destination within this growth market. The toll removal does not appear to have made a particularly large impact on this market, although local perceptions are that there are more day trippers. In the 1998 surveys, the majority of tourists did not find the tolls to be an important factor affecting their decision to visit Skye. The 2006 surveys appears to reinforce these findings indicating only a slightly positive effect.
- 5.37 Overall Skye is perceived by most tourists as being a better place to visit as a result of the bridge, but the overall impacts are relatively small compared with the impacts on local people.

Efficiency

- 5.38 The 2002 study of the impact of the Skye Bridge Tolls (Napier University Employment Research Unit 2002) indicated that the removal of the tolls could lead to “an increase in business efficiency and employment” amongst exporting sectors, but the ex-post data does not point to any significant positive impacts as yet. The efficiency benefits appear to have been within local markets around the bridge.
- 5.39 Two reasons that could account for this apparent lack of business profitability and employment impact are:
- The short time period since the removal of the toll will not yet have allowed markets to react fully to the change; and
 - Problems in defining the counter-factual - The removal of tolls has shielded Skye businesses from the impact of significant recent rises in fuel prices, or put another way the fuel price increases have severely limited any overall savings made as a result of the removal

of the tolls. Ideally we wish to compare the surveyed situation with one in which fuel prices had increased but the bridge toll had remained in place. However, the fuel price increases are too recent for trend data on the performance of businesses that have been fully exposed to the price increases to be available (e.g. businesses on the mainland or other islands) – thereby preventing any definition of the counter-factual.

Competition

- 5.40 The removal of the tolls appears to have opened up markets between Skye and the mainland (and vice versa). Different individual businesses have been affected differently by this change. Approximately 33% of all businesses surveyed indicated some change to business performance as a result of the toll removal. Some have experienced increases in trade and others decreases (these changes appear to be independent of sector or location).
- 5.41 This suggests that businesses that have been well placed to respond to the opening up of markets have benefited from the changes, and those that have not responded to the removal of their protected markets have suffered.
- 5.42 The decline of shops in Kyleakin and the growth of craft based industries in South Skye demonstrates the effects. The communities of South Skye and Lochalsh have become more closely integrated since the toll removal but the bridge construction had the reverse effect. In the feasibility studies for the bridge (PEIDA 1991) the bypassing of Kyleakin was identified as potentially the greatest negative economic impact of the tolled bridge, and the negative effects of severance on the Kyle of Lochalsh and Kyleakin communities were intended to be mitigated by the shuttle bus. In practice the shuttle bus did not prove attractive, and shops in Kyleakin grew as trade from local residents more than compensated for the loss in passing traffic. The re-integration of the Kyle of Lochalsh and Kyleakin communities with the toll removal has had broader positive benefits by delivering improved accessibility to more of South Skye, but the protected markets in Kyleakin have experienced some decline.
- 5.43 The 2006 business surveys reinforce the 1998 surveys by not identifying major effects on business competitiveness. However the growth of local markets in South Skye and Lochalsh (e.g. Jewsons in Portree supplying a larger area) may allow some firms to grow and compete in new markets in the longer term.
- 5.44 It should however be noted that the response bias in the surveys discussed above makes businesses more likely to be optimistic about the impacts on their competitiveness. Only time will tell whether in the long term businesses grow faster. At this stage the clear message is that there have been some benefits that help to make the business more competitive, but to date the observed changes are in local markets such as shopping in Kyle of Lochalsh and Broadford. The

bridge impacts are in any case relatively insignificant compared with other pressures in export orientated markets.

Agglomeration Impacts

- 5.45 The tendency towards concentration of activities, or agglomeration, is one of the most striking features of the spatial distribution of economic activity. Agglomeration benefits from a transport project arise for businesses as improved proximity to other businesses, employees and customers can bring about productivity gains that exceed the pure efficiency saving in the transport costs.
- 5.46 The growing cluster of craft businesses on South Skye appears to be related mainly to cultural factors. Skye is now a much easier place to move to than it was 10 years ago. It may be that the confidence factor of knowing that there is reliable access to the mainland day and night is one element that makes people more willing to locate on the island. Although this did not emerge as a factor of great importance from the surveys, the rapid growth in the number of local trips from South Skye to Kyle of Lochalsh demonstrates a welfare benefit from the toll removal.
- 5.47 Whilst there appears to be a significant change in the local labour market in South Skye, the business surveys have not identified any significant changes in the economic linkages between firms, nor have they identified any significant changes in business performance. Whilst in part this could be due to the short period of time between the removal of tolls and the surveys and the impact of increasing fuel prices, such a finding is not inconsistent with other evidence in this field.
- 5.48 Firstly, regional economies that have a strong primary sector focus, such as the west coast of Scotland, do not appear to exhibit significant agglomeration effects, and secondly research from the west coast of Norway drew similar conclusions regarding the limited impact of agglomeration benefits from fixed links in remote areas (see Appendix K for a fuller discussion). Even a free bridge is unlikely to transform the economic prospects of a remote community.

Business impacts and user benefits

- 5.49 The business surveys show that it is not easy to isolate transport impacts from other effects. Transport works in conjunction with other factors in ways specific to each individual business. The Bridge has made a positive contribution to businesses in three main ways:
- Labour market catchment areas have increased in South Skye and Lochalsh helping to overcome a significant barrier to growth. The seasonality of the economy requires a more flexible labour pool and the free Bridge assists with this.
 - Some businesses have been able to increase their local markets particularly retailers on Skye which are able to sell to mainland business in Lochalsh.

- The toll removal has increased business confidence. This does not necessarily involve more travel in the short term or lead immediately to increased productivity, but the indirect effects could be very significant. For example, lack of high quality accommodation for tourists may be holding back this sector. If transport change can boost the confidence to invest, then it can make a major impact on growth.
- 5.50 The impacts of these changes on employment and profitability are not discernable.

6.0 Impacts on Households

Living and working in the area

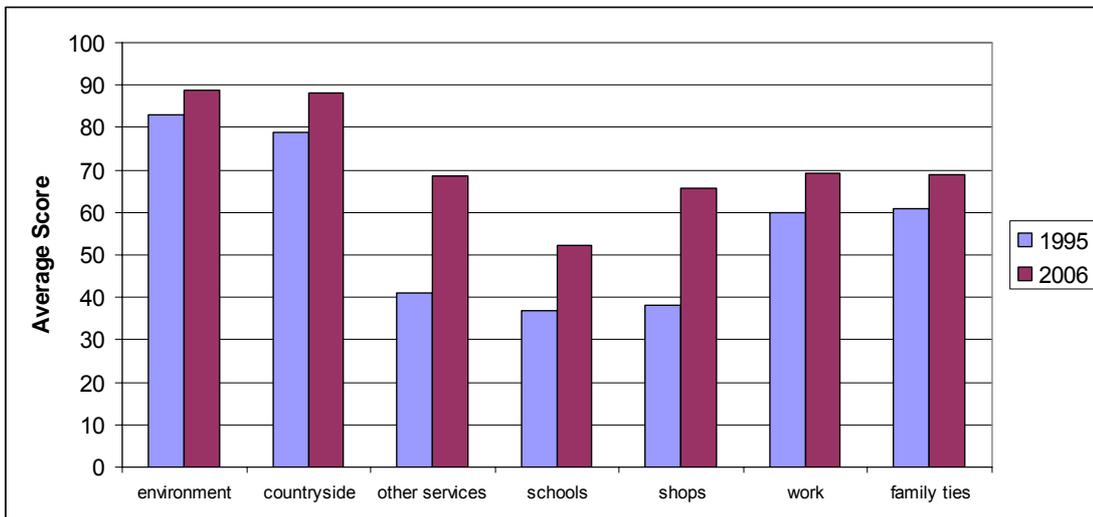
6.1 Households were asked why they chose to live where they did, and rated the importance of six factors which had been identified as potentially relevant to the Skye bridge in the surveys prior to its construction:

- Environmental attractiveness
- Access to the countryside
- Access to other services
- Access to schools
- Access to shops
- Access to work

6.2 All factors have become more important as shown in Figure 6.1. This probably reflects the higher general expectations of society. A score of 100 represents very important and a score of zero indicates not important in affecting where people live.

6.3 The attractiveness of the local environment and access to countryside are the most important factors affecting residence location but it is interesting that access to shops and other services have experienced the greatest increase. The ability to make local trips more easily appears to be matched by the appreciation of the benefits.

Figure 6.1 – Reasons for Residence Location



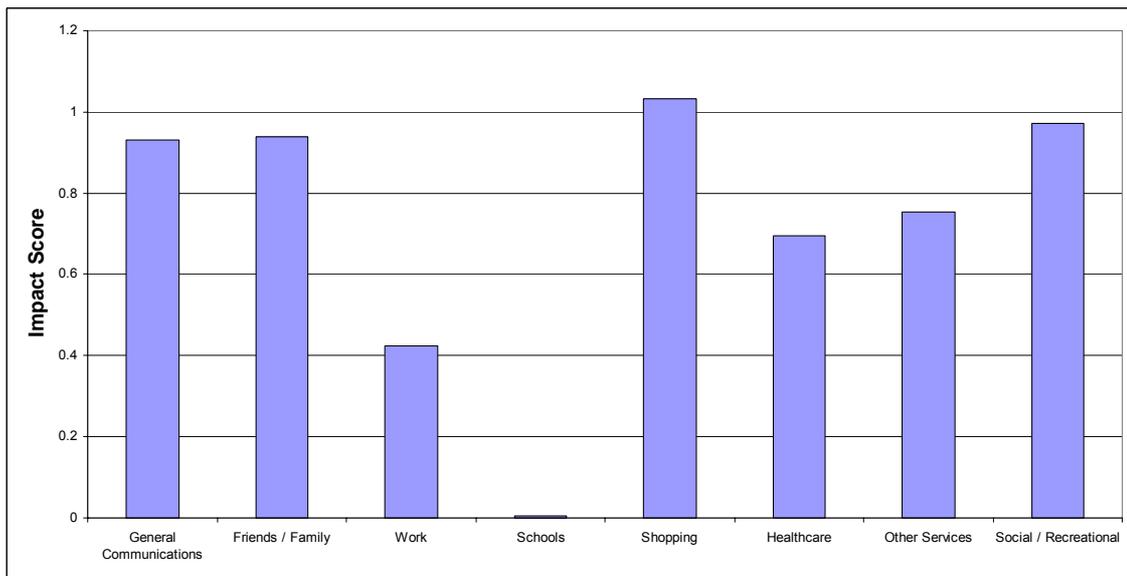
6.4 This finding is not surprising due to the nature of the area, and reinforces the fact that many residents accept difficulties in access when living in remote rural areas. These findings almost exactly match those of the 1995 survey. The notable exception to this is that access to other services is now (approximately) as important as access to work and family ties

- 6.5 The Skye bridge is increasingly being viewed as an asset to the area but the changes between the 1995, 1998, and 2006 surveys are not large. The main change reflects the changing expectations of the local population for better access to more services and facilities. Relevant findings are:
- Residents of Lochalsh indicate the greatest impact in terms of access to work and healthcare.
 - For residents in Skye, the Bridge has had the greatest positive impact on access to family and friends.
 - The proportion of households who viewed the Bridge in a negative manner has decreased.
- 6.6 Although about half the sample had moved house within the last 10 years there were no significant differences between the views of respondents by length of time in the area. This contrasts with the findings of research in the Highlands in 1993 (Halden and Sharman 1993), which found very substantial differences of attitude between incomers and natives.

Attitudes to the bridge tolls

- 6.7 The removal of the bridge tolls has changed the perspective of households in relation to the bridge. The bridge is almost universally supported as an asset to the area, whereas it was previously viewed negatively by many.
- 6.8 The impacts on travel have been greatest for residents of South Skye, but in all surveyed areas, the relative importance of impacts have been perceived in a similar way. From the 2006 survey results, the relative impact is greater for shopping, social and recreational trips as shown in Figure 6.2.
- 6.9 Impacts on the ability to make trips where there is no choice of destination are lower than for trips where residents can choose where to travel. This reflects the travel survey data which shows how local people are increasingly crossing the bridge
- 6.10 Residents rate benefits for tourism as the most significant positive impact of the bridge. This reinforces the overall finding that the toll removal has had a particularly positive impact on the way the bridge is viewed by local people. The tourism surveys show that the impact on tourism has been much less than for local trips yet households consider that visitors have benefited even more than themselves.

Figure 6.2 – Perceived Impacts of the Bridge Toll Removal by trip purpose



6.11 Trip increases as a result of the toll removal are chiefly for shopping, social and recreational purposes so this reflects these attitudes and confirms that the household perceptions are reflected in their behaviour.

Household budgets, ferry fares and bridge tolls

6.12 The change in 1995 from the ferry fares to the bridge tolls did not change the cost of a trip significantly for those who needed to take a car between Skye and the mainland. However, the construction of the bridge did not simply lead to a change in mode from ferry to bridge but also had a significant impact on pedestrian flows (some of which may have included park and ride type trips). The impact of the bridge on the pedestrian and park and ferry trips may therefore have led to a large suppression of travel or redistribution of trips within the area. There is very little data available to assess the scale of this effect.

6.13 Survey respondents indicate that many locals crossed between Skye and the mainland free of charge as foot passengers despite driving to the ferry. The park and ride trips are significant and were not surveyed specifically at the baseline stage, since the scale of this trip pattern was not known until the surveys were completed and the bridge was about to open.

6.14 The households who reported driving to Kyleakin to park and take the ferry to access services and facilities in Kyle of Lochalsh, could potentially exceed those that took the car across the water for local trips. There were many more foot passengers than car passengers, and little is known about their trip patterns, or mode of access to the ferry. It is not therefore possible to derive an estimate of the number of these local trips from the available data.

- 6.15 In 1998, the reductions in tolls for frequent travellers does not appear to have had a large impact on travel so the overall impacts on household budgets are small.
- 6.16 With the more comprehensive data available from the 2006 surveys, the impacts of removing the toll can be better understood. By combining the travel diary and household expenditure results from the 2006 surveys it is clear that households have saved money on the toll and spent more money on fuel and car operating costs. This is consistent with the induced traffic effects discussed above.
- 6.17 There is considerable bias or inaccuracy in the responses so only very approximate estimates can be developed for the financial impacts of each change. However, based on average savings per household on tolls, the estimate in Appendix E suggests that:
- Households have saved between £0.4 and 0.8million annually since the bridge became toll free.
 - Households, through increased travel, are now spending a proportion of this saving on making additional trips. For some households close to the bridge the increases in trip frequency are resulting in additional travel costs at least as high as the toll costs. Overall, the increased operating costs from the additional trip making overall accounts for less than half the toll saving.
 - Impacts and changes in trip activity have occurred to a greater extent in the south of Skye. 60% of residents in South Skye indicate savings caused by removal of the tolls, compared to 42% for the north of the Isle. However, based on the stated travel patterns the savings for people in the north are most likely to lead to increases in disposable household income for spending on household goods, whilst in the south the additional disposable income is more likely to be spent on more travel.
- 6.18 Overall, approximately half of the toll saving is available for the purchase of additional goods and services from the local economy. Comparing this with previous work to estimate the impacts of the toll removal (Napier University ERI 2002), it was previously estimated that there would be £0.5million saving for local residents. However, it was assumed that the toll savings would all be spent on additional goods and services by households (i.e. they did not include the costs of additional trip-making in their calculation of net economic impacts).
- 6.19 The Napier work also suggested an extra 52 FTE jobs in the local economy of which only 12.8 come from the household budget savings on tolls. There is no direct evidence of additional employment from the surveys, but the changes in employment markets are complex and people would not necessarily associate their ability to find work (e.g. in Portree) with the changes at the bridge, particularly if the new job did not involve using the bridge.
- 6.20 There is a clear increase in the perception of the bridge as an asset since the toll removal – supporting the hypothesis identified in the

original baseline study that the bridge will be increasingly valued by residents over time.

Household expenditure priorities including distribution of spend

- 6.21 As part of the postal survey respondents were asked about other non transport household expenditure. Most respondents appear to have been unable to accurately identify changes in their household budget, and only 9% of households identified any saving in non transport costs. The potential opportunities to source cheaper goods and services does not therefore emerge as a major factor in the toll removal.

Migration

- 6.22 Skye has been successful in attracting people to the area unlike some parts of the Highlands. The extent to which the bridge and the removal of the bridge tolls have affected this is not clear. There is certainly no evidence of an adverse effect and there was a positive impact around the time of the introduction of the 24 hour ferries and the building of the bridge.
- Approximately 30% of house buyers are from outside Scotland (based on estate agency estimations). Prices and market buoyancy strongly dependent upon national prices.
 - There has been a 3% population rise since the bridge was built – this is above trends for the Highlands.

Expectations and confidence for the future

- 6.23 There is much greater confidence amongst people living in the area about the future. This came across strongly at the focus groups “in the early 1990s the young folk would leave the island as soon as they got the chance but now they are staying”. The bridge has connected Skye with mainland Scotland reducing perceptions of isolation. It can therefore clearly be identified as one factor that helping residents to feel good about living on Skye.
- 6.24 If the bridge as a direct influence has been a minor factor on the perceptions of locals, its indirect impacts are also significant. Perhaps the most important factor in developing new community structures and confidence for the future, has been the development of a cultural identity around music and the arts. This is underpinned by the development of the Skye “brand” through events such as the Skye music festival. It would have been much harder to host major cultural events such as this without the bridge.
- 6.25 Other relevant factors identified in the survey responses are that:
- Local communities have retained their island identity.
 - Although there are concerns about increased criminal activity as a result of easy access to the mainland, there has been no significant change in crime levels.

- 6.26 The bridge is only one of the many factors that is helping Skye to remain competitive, but it interacts with all the growing sectors of the economy positively.

Household impact and overall benefits

- 6.27 Households, particularly those living near the bridge, have used the increased disposable income from the toll removal to pay for more travel. This emphasises that remoteness is one of the most significant constraints on welfare for those living in remote areas.
- 6.28 There is at least £0.2 million of increased disposable income in the area not being spent on additional travel. The additional opportunities for spending this within the local economy will have positive impacts on other sectors of the economy.
- 6.29 Expectations of society are changing and the better access to family, friends and services helps to underpin Skye as a better place to live. For residents of Lochalsh, improved access to work and healthcare are more important benefits and will help to underpin local business development and service provision on Skye by widening catchments.

7.0 Other Economic and Social Impacts

Skye as a Tourist Destination

- 7.1 The analysis of tourist data and tourist surveys show that:
- Skye and Lochalsh receive a higher number of first time visitors to the area, when compared to the Highlands, and that this has not changed significantly since before the tolls.
 - There continues to be a higher proportion of non-UK visitors to Skye, relative to other parts of the Highlands. It might have been expected that the toll removal would have resulted in an increase in Scotland and UK based tourists who would have been better informed about the transport changes.
 - Skye has a stronger market for longer stay holidays than the rest of the Highlands, and this has not changed in recent years despite concerns by locals that there has been a significant change in length of stay. Visitors perceive Skye as a more attractive base for a holiday. They can stay on the island and visit places on the island and mainland during their stay. The fact that Skye has been able to maintain its market for longer stays, when other parts of the Highlands have seen this type of holiday fall relative to short stays may indicate that this is a small but significant effect.
 - The role of the Kyle of Lochalsh crossing in marketing the area continues to be a significant factor. In 1995 trips on the ferry “over the sea to Skye” were an attractor particularly for day trips by train from Inverness. In 1998 visitors wanted to view the “controversial bridge”. In 2006 the bridge is still a visitor attraction “you either love it or hate it” and the marketing has emphasised the toll removal.
- 7.2 Overall the bridge and the toll removal appears to have made Skye a slightly more attractive place to visit. Touring visitors and day trippers are more likely to cross to the Island but, when they do, they are not high spending groups.

Land values

- 7.3 There was strong growth in land values in the early 1990s but overall:
- These have followed national trends
 - The economy of Skye and Lochalsh has been relatively buoyant compared to other parts of the Highlands and Islands.
 - House values have been driven up by the large volume of incomers.
 - There has been a recent increase in interest in properties in the Western Isles (where values are 50% less) which may be a trickle down effect from the higher land values on Skye.
- 7.4 It therefore seems likely that the introduction of the 24 hour ferries have been the most important factor. The construction of the bridge has helped to consolidate this benefit, and as Skye has become a better

place to live and work, any effects of the bridge on land values will not necessarily have been near to the bridge, but as a result of a general improvement in land values. It is not therefore possible to detect these effects from the available data. Since the tolls were removed the housing market has been more sluggish throughout the country, and Skye has followed this trend indicating that the toll removal has not had a major impact.

Public agencies and service delivery

7.5 The contribution of transport investment to non transport budgets is often missed within public agencies but the impacts for Skye have been very substantial and are widely recognised.

7.6 However, with public agencies (including health and social services) accounting for over a third of business travel in the area the wider public sector benefits are significant through staff travel alone.

7.7 Some of the main impacts are that:

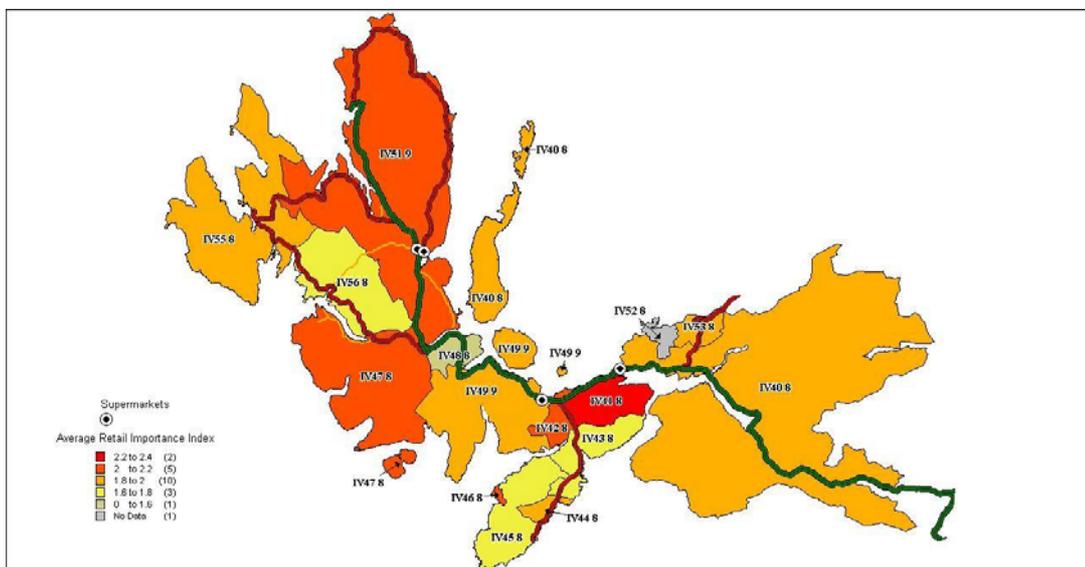
- Health and Social Services have made annual savings of over £10k per annum from the toll removal but these savings have been absorbed by the wider service budgets and have not been quantified.
- There are additional cash savings to the NHS from reduced costs for patient travel under the hospital travel costs scheme but these are relatively small since they only affect low income patients.
- Using the ratio of public sector to total employment in the area, and assuming that public sector employees travel as much on business as other workers the total toll saving on public budgets exceeds £25k per annum.
- The removal of the tolls has made it easier for the NHS to manage public opinion when they centralise services (e.g. out of hours centre in Broadford). Although it is considered that these changes would have occurred regardless of the bridge tolls their public acceptability may well have been affected, with resultant savings in public relations costs.
- Recruitment at the hospital in Broadford has been eased as a result of the toll removal with ancillary/unskilled posts being filled by residents from Lochalsh.
- There have been some impacts on policing with significant savings being made since the toll removal on staff time dealing with toll non payment. However removal of the cameras at the tolls booths has resulted in reduced security and tracking of vehicle coming on and off the island.

7.8 Overall there have therefore been significant savings for other public agencies but these have been absorbed in other budgets and not clearly associated with any efficiency gain.

Access to services

- 7.9 The household surveys show that people's attitudes and choices are closely linked. People who consider that access to work, shops, schools and healthcare is not important live further from these services than people who consider they are important. The economy of Skye is therefore highly adapted to being remote and it takes time for it to change to capitalise on the improved accessibility from the bridge. As Skye becomes more accessible it is likely to adapt to being more accessible and this opens up longer term economic opportunities.
- 7.10 The responses from the household survey were geocoded and correlated with the national census output area based travel time indices to GPs, post offices, shops, schools etc. which are used in the national index of multiple deprivation.
- 7.11 There was no evidence from any part of the area that there were people who considered accessibility to be very important yet lived in particularly inaccessible areas. Such conflicts are common in deprived rural areas (DHC 2000). The analysis of access to services therefore indicates satisfaction with current lifestyles and choices.
- 7.12 Figure 7.1 shows scores for residents on the importance of access to shopping. It shows that, on average, people who consider that access is important live in the locations with the best access.

Figure 7.1 – Importance of Access to Shops by Household Postcode



8.0 Conclusions

- 8.1 In the early 1990s the congestion at Kyle of Lochalsh was acting as a significant constraint on the development of Skye. The introduction of the 24 hour ferries overcame this problem, and helped the economy of Skye to grow. The rapid rise in land values in the early 1990s is one of the clearest demonstrations of this impact.
- 8.2 The toll bridge consolidated the benefits of the ferry improvements, and made them more permanent. The new ferries introduced in 1992 would probably have required upgrading by the late 1990s, and achieving the investment priority for this investment would almost certainly have depended on a period of growing congestion, with associated damage to the local economy. The bridge has therefore helped to build confidence in the continued economic and social development of the area.
- 8.3 There have been both positive and negative effects on local markets observed since the 24 hour ferries were introduced. The greatest changes have occurred since the toll removal but this was also the largest input of public funding. In general the companies that were already successful have become more successful, and those that were facing decline have seen the rate of decline accelerate.
- 8.4 The toll removal has changed perceptions of the Skye Bridge, so that it is now, almost universally, perceived positively by local residents and businesses. This has the dual benefit of helping to underpin business confidence and making the area a better place to live.
- 8.5 The bridge, and the controversy relating to the tolls, has helped to market Skye across the UK and overseas. Visitors are well aware of the Skye toll controversy, suggesting that the area has derived significant benefit from this marketing. The design of the bridge, the regular toll changes, the non-payment campaigns, and the publicity about the toll removal have maintained this publicity over more than a decade.
- 8.6 The direct financial benefit of the toll removal for local people has allowed them to travel more often, particularly for shopping, personal business and leisure trips. For people from further afield, the toll savings have been a small element within household budgets, and do not appear to have induced a substantial number of new trips.
- 8.7 There have also been direct savings for business travel but these are relatively insignificant compared with overall transport costs. Local public organisations have however saved in excess of £25k per year on business travel costs and this could be significant within their travel budgets.
- 8.8 Removing the tolls has helped to re-integrate the local economies of Lochalsh and South Skye. The bridge had a large severance effect on the community of Kyle (Kyle of Lochalsh and Kyleakin) as demonstrated by the loss of many free pedestrian trips. The removal of tolls has gone some way towards re-integrating the two communities.

- 8.9 The survey data does not identify any significant positive impact on business profitability and employment from the removal of the tolls. In part this is attributed to the short time period between the surveys and the toll removal. However, it is also due to the fact that the toll removal coincided with a period in which fuel prices increased rapidly. Undoubtedly the toll removal has shielded the Skye economy from some of the fuel price increases but it is difficult to disentangle the two effects.
- 8.10 Local employment markets have benefited, increasing the scope for business growth in the Lochalsh and South Skye areas. The labour market effects have been primarily related to the toll removal, and these are long term impacts. This research is too early to assist in assessing the ultimate scale of the impact.
- 8.11 The bridge is only one small element in the social and economic development of the area, and its impact has been relatively limited compared with other market changes such as house prices, fuel prices, international tourism market fluctuations, the rise of e-lifestyles and remote working, and other wider social and economic changes.
- 8.12 The Skye Bridge was promoted as a project of strategic interest to the Highlands. These strategic benefits were broadly achieved by the tolled bridge, but were not matched by equivalent local benefits. The toll removal has extended the strategic benefits to ensure that local people can benefit more, also helping the bridge to be perceived more positively by both residents and businesses.

Quantification of benefits

- 8.13 The cost benefit analysis, undertaken when the bridge was being planned, significantly underestimated the economic benefits. The levels of induced travel have been well above those predicted. Even whilst the tolls were in place, the traffic growth was higher than even the high growth predictions, and since the tolls were removed a further 50% increase in traffic has been observed.
- 8.14 As a result, the economic benefits of building the bridge, assessed using current Scottish Transport Appraisal Guidance methods, are already nearly £100 million and are likely to reach about £400 million over the 60 year STAG evaluation period (at 2006 prices and values).
- 8.15 Even if the toll had remained in place, the higher levels of observed traffic growth than predicted mean that the economic benefits were substantially underestimated, by a factor of at least two.
- 8.16 If there is a “fixed link factor” associated with the increased benefits at Skye, then it relates to the permanence of a bridge relative to a ferry. Household and businesses confidence has very important economic impacts. However any “fixed link” factor can be best understood within more clearly defined concepts such as cost, time, reliability, convenience, comfort and image.

Further Investment in links between Skye and the Western Isles?

- 8.17 The Bridge to Skye was seen as a potential way to improve transport to the Western Isles via Skye. This research has shown that:
- The route via Skye is proving increasingly attractive for trips to Uist.
 - Ferry investment on the Ullapool to Stornoway route has been more important for the Western Isles than any changes at Kyle of Lochalsh. Traffic to the Western Isles has been growing faster on the Ullapool–Stornoway ferry than via Skye. This also reflects the dominant population on Lewis and the growing importance of Inverness relative to the central belt of Scotland.
 - Uist relies on Oban ferries as much as via Skye serving the major population centres.
- 8.18 The free crossing at Kyle of Lochalsh may open up new opportunities to spread these benefits to Harris, the Uists and Barra but further work would be needed to identify whether such improvements would be economically viable.

9.0 Implications for Future Appraisal

- 9.1 There are important lessons for future appraisal from the Skye Bridge experience. There is nothing identified in this research that suggests that a fully specified, behaviourally robust user benefit analysis will not include all the social and economic benefits of even major step changes in accessibility such as replacing pay per use ferries with a free bridge.
- 9.2 However the complexity and local sensitivity of the way local community and business networks operate in remote areas means that achieving a fully specified and behaviourally robust approach is a theoretical rather than practical prospect.
- 9.3 The absence of a comprehensive treatment does not mean that appraisal cannot be improved. The general approach in STAG of using the transport economic efficiency appraisal (TEE) alongside other appraisals of wider social, economic and environmental benefits provides flexible framework within which improvements can be made.
- 9.4 There are some important lessons that future transport appraisal can learn from Skye, which fall into three categories: calculation of economic efficiency measures, calculation of wider economic benefits and general appraisal lessons.

Economic Efficiency

- It is necessary to include all modes affected by investment, including pedestrians, and the relationships between these modes. Pedestrians accounted for about a third of all people crossing at the Kyle of Lochalsh ferry and the single year impacts when introducing the tolled bridge were equivalent to 7% of the total user benefit.
- The relationship between travel cost and demand requires a highly segmented approach to travel behaviour analysis, particularly where money costs are involved. Values of time may also vary significantly across the population.
- Levels of induced travel can be very much greater in remote areas where poor accessibility is constraining travel to a much greater extent than in urban areas.
- Transport investment appraisal needs to include issues such as inconvenience costs, comfort, reliability and image in addition to cost and time. Evidence from the Skye Bridge indicates that inconvenience costs formed about 15% of time and cost benefits, but for less frequent ferries evidence from Norway suggests they may form up to 60% of time and cost benefits.
- A 'fixed link' factor related to the uncertainty that communities and businesses experience when reliant on ferry services may exist. There is however no evidence as to the size of such a value from the Skye Bridge experience.

Wider economic and social

- Many of the most important impacts are uncertain. In the case of Skye the greatest impacts have depended on a few companies or entrepreneurs who have been able to take advantage of the change. It would have been equally possible that these impacts would not have occurred if the companies had perceived the opportunities differently. Project development and appraisal should consider how to secure and lock in potential benefits as part of project delivery wherever possible. Predictions of travel demand changes can be assisted by businesses and households surveys such as those undertaken for this work.
- It is necessary to include indirect as well as direct effects. Demand for houses as a result of the 24 hour ferries helped to push up land prices and build a significant construction sector which then was able to benefit from the bridge construction. This sector was then able to build on its strengths within a buoyant house building market. The new homes have helped to encourage more incomers who then created more open social networks and made Skye a more attractive place to settle. It is not possible to predict all consequential changes correctly, but it is possible to scale the most important effects to identify the range of certainty.
- Labour markets are relatively important influences in remote economies. The development of a single labour market for Lochalsh and South Skye with the toll removal shows that for relatively low wage jobs, transport costs can be significant. It is therefore important to segment the job market by levels of pay in appraisal where money costs are changing.
- Agglomeration benefits appear to be less important in remote regions (see Appendix K).
- Trends in land prices whilst being an important 'ex-post' signal that a transport project has delivered economic benefits are unlikely to be a useful input to ex-ante appraisal due to the difficulty in forecasting changes in land values.

Other implications for appraisal

- The distribution of benefits is important not just for equity but for public acceptability. The big winners from the tolled bridge construction were long distance travellers and people on higher incomes. In the case of Skye the fact that many locals trips experienced a disbenefit helped to create particular instability in public acceptability.
- Image and marketing are very large influences over travel behaviour. Appraisal needs to consider which social and business networks influence behaviour, and ensure that investment appraisal includes appropriate complementary marketing interventions alongside the infrastructure works.

- The geographical scale needed for robust analysis can make appraisal very complex, particularly where investment decisions relate to different expenditure programmes. Investment in ferries on competing and complementary routes, has significantly affected the benefits at the Skye Bridge. However considering every possible option within appraisal at Skye is not practical. This emphasises the importance of establishing investment priorities within regional strategies so that scheme appraisal is more related to optimising scheme design and delivery than decisions on overall priorities.
- The extent to which transport changes support the economic and social strengths of the area is crucial. The starting point in STAG appraisals is rightly to define local objectives related to these factors but the Skye Bridge emphasises the particular importance of these local objectives in remote areas.

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A Appendix A- Timeline of Changes

A.1 Table A1 summarises important events and changes to the transport network on and around Skye, from the late 1980s to 2006.

Table A.1: Transport Network Events and Changes

Date	Route	Event
March 1988	Kyle-Kyleakin	Removal of charge for passengers.
March 1989	Inverness-Kyle	Collapse of railway bridge over Ness results in prolonged bus substitution between Dingwall and Inverness.
1989	Inverness-Kyle and Glasgow-Mallaig	New Sprinter rolling stock replaces locomotive-haulage on most railway services, although limited summer locomotive haulage to Kyle did not cease completely until 1994.
28 April 1991	Kyle-Kyleakin	23-hour operation introduced.
May/September 1991	Kyle-Kyleakin	New 36-car ferries replace 28-car ferries.
1994	Mallaig-Armadale	Hoist loading replaced by use of linkspans, reducing loading times.
31 July 1995	Stornoway-Ullapool	New vessel reduces journey time from 3:40 to 2:40 and allows a third daily crossing at peaks, but with minimal additional vessel capacity.
16 October 1995	Kyle-Kyleakin	Final ferry crossings.
17 October 1995	Skye Bridge	Skye Bridge opens, with tolls at or just below former ferry prices. Shuttle bus operates Kyle-Kyleakin.
June 1996	Berneray-Leverburgh	New ferry service linking Harris and North Uist, and taking pressure off the Uig service to cater for journeys within the Western Isles.
1998	Skye Bridge	Toll regime change funded by Scottish Executive, with significant reductions in tolls for local people via books of tickets.
July 1998	Mallaig-Armadale	Larger vessel (56-car Lord of the Isles) introduced (replacing 47 and 32 car ferries in use since 1980). The vessel was transferred from other work, not built specifically for the route.
1 January 2000	Skye Bridge	Scottish Executive intervened to freeze all prices at 1999 levels.
May 2000	Inverness-Kyle	Newer rolling stock (class 158) introduced.
24 March 2001	Uig-Tarbert-Lochmaddy	New vessel (90-car capacity replacing previous 68-car), with reduced journey time and some additional crossings.
September 2001	Inverness-Kyle	All-year Sunday services introduced.
September 2002	Stornoway-Ullapool	Additional freight-only vessel introduced.
Spring 2003	Sound of Barra	New vehicle-carrying service introduced between Barra and Eriskay, taking pressure off the Oban service to cater for journeys within the Western Isles.
2004	Mallaig-Armadale	Smaller vessels introduced: 40-car summer / 14-car winter. ⁶
21 December 2004	Skye Bridge	Tolls removed.
January 2005	Skye Bridge	Local bus services on Skye extended from Kyleakin to Kyle.
August 2005	Skye Bridge	Regular Kyle-Kyleakin shuttle bus service removed. Replaced

⁶ The significance of the reduction in vehicle capacity of the Mallaig-Armadale ferry in 2004 is unclear. The other ferry routes mentioned have all benefited from newly built replacement vessels, which might reasonably be assumed to be designed for the route they serve. During the 1990s the Mallaig-Armadale service simply gained vessels displaced from other services.

Date	Route	Event
		by occasional extra services to fill gaps between longer-distance services, maintaining an approximately hourly headway.

Sources: David Summers (Highland Council), John Yellowlees (Scotrail), Ships of Calmac (<http://www.shipsofcalmac.co.uk/>).

B Appendix B – Traffic Data

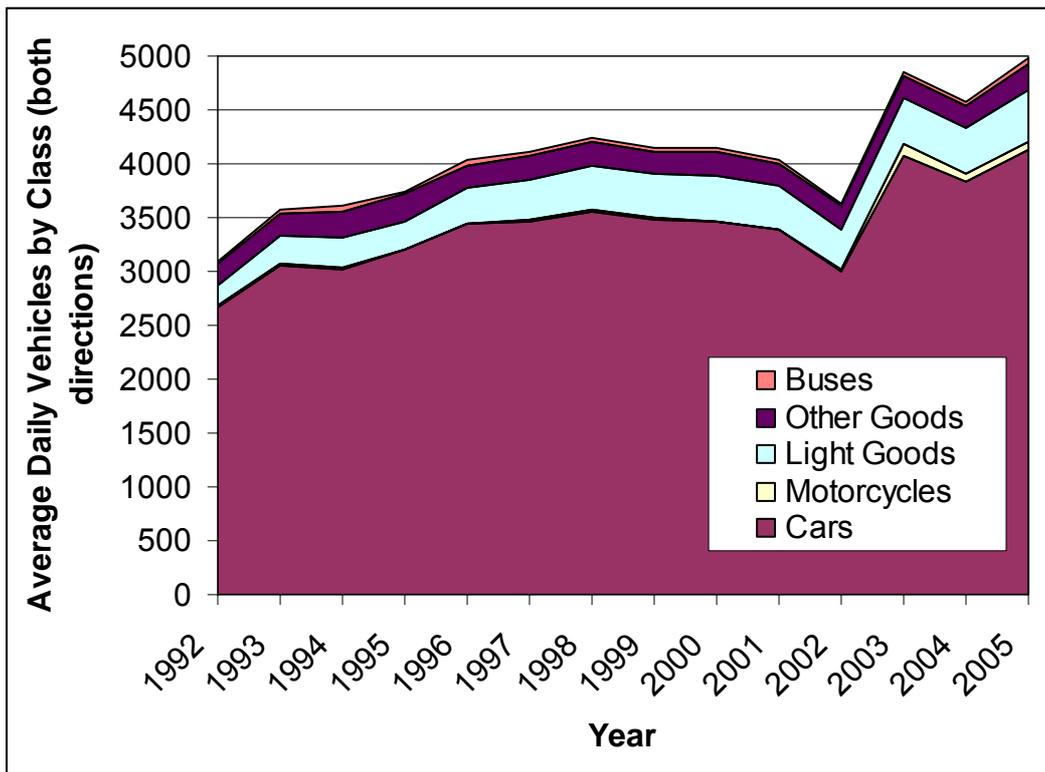
B.1 Since the late 1980's automatic traffic counts and origin and destination surveys have identified travel patterns in the area. This Appendix reviews the automatic count data.

Traffic Flows by Vehicle Type

B.2 The introduction of the bridge had increased the number of buses (by 30%) and commercial vehicles (by 12%) between 1995-1998. However this does not appear to have been maintained in the longer term. On average, toll data obtained from Scottish Transport Statistics demonstrates that over the period 1996 to 2004, 92% of tolls collected were for cars, 4% for heavy goods vehicles, 2% for buses, and 2% for motorcycles. There were no significant variations in these proportions over time.

B.3 The only traffic counters in the area that record the class of vehicle are those at Broadford. This is shown by year in Figure B1 below. Data for 2002 and 2003 is unreliable, because a significant proportion of data is missing (41% and 62% of days respectively).

Figure B1 - Broadford Annual Traffic Flows by Vehicle Type



B.4 Some trends within this data are not clear, in part because of the sudden increase in motorcycle recordings after 2003 – possibly the result of a re-calibration of the counters. Generally, there has been a decrease in the proportion of heavy goods vehicles (7% in 1994 to 5% in 2004) and a slight drop in the proportion of cars. Buses consistently

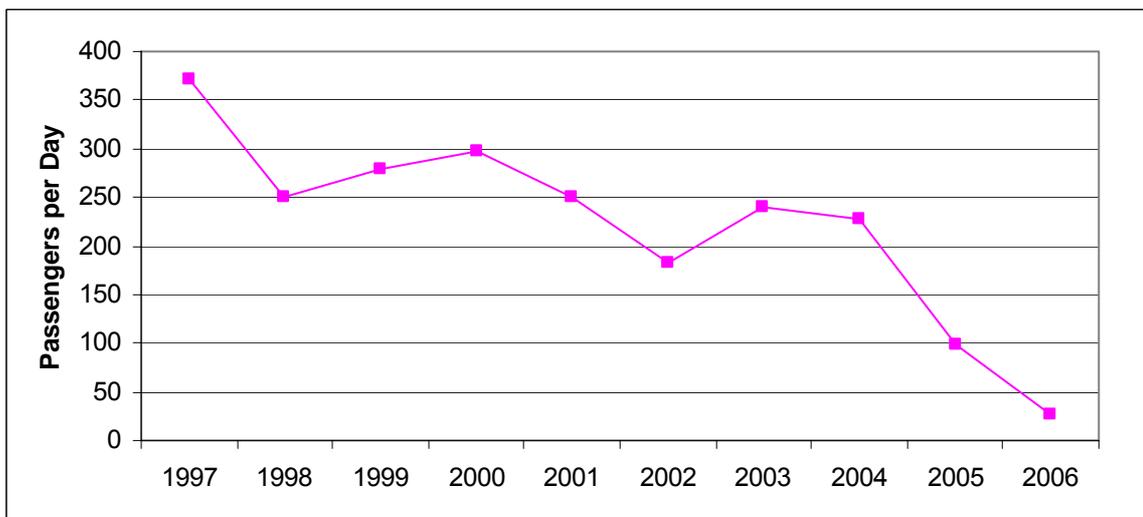
account for approximately 2% of traffic, motorcycles approx 2% after 2003.

- B.5 The slight increase in the proportion of light goods vehicles after 1995/6 appears to reflect an increase identified in the 1998 review. Excepting this, the data differ enough from the toll data to make any the exploration of any conclusions on the types of vehicle travelling on Bridge difficult to draw.
- B.6 Some further indications of trends may come from comparisons between previous roadside surveys and those to be completed as part of this study.

Patronage on the Kyle of Lochash to Kyleakin Shuttle Bus

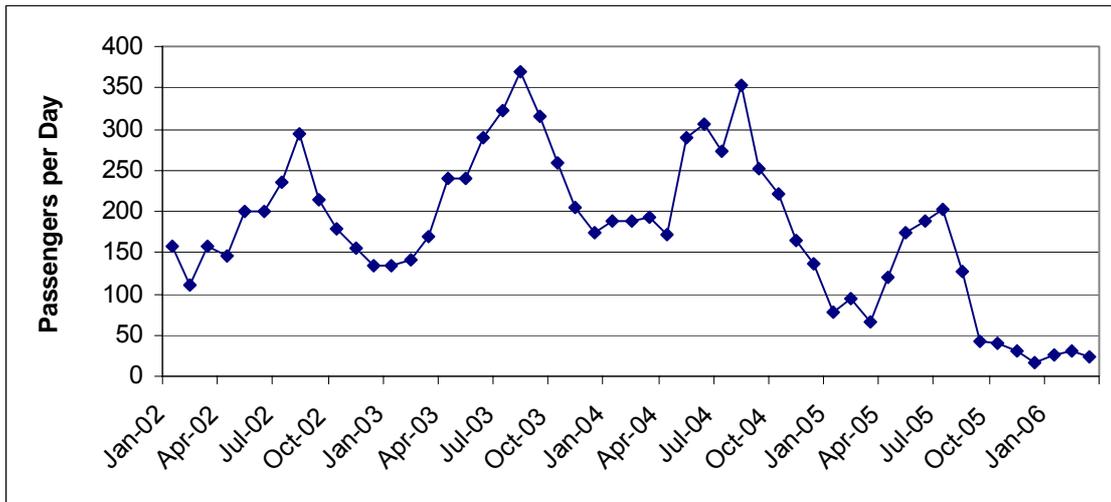
- B.7 The first year for which there was data for the shuttle bus (1996-97) the patronage was about 135,000 but there was a steady decline in this traffic in the years that followed.
- B.8 There are two significant drops in patronage: In 1998, after the introduction of enhanced discounted tickets for car travel, and a large drop off after the removal of the tolls at the end of 2004. In August 2005 the shuttle bus service was discontinued.

Figure B2 - Annual Patronage Figures: Kyle-Kyleakin Shuttle



- B.9 Figure B3 shows the post-1994 patronage drop in greater detail – with an immediate large reduction in patronage in January to February 2005. The toll removal resulted in an immediate loss of approximately 150 passengers per day when compared to previous years (approximately 50-60% of patronage in winter, and 25-40% in summer).

Figure B3 Monthly Patronage: Kyle-Kyleakin Shuttle



B.10 It is clear therefore that the introduction of discounted tolls (in 1998) and the removal of the tolls (in 2004) have had a significant effect on local travel. It is likely that pedestrians have been able to move away from bus and take lifts by car.

Ferry Data

B.11 In addition to the routes to and through Skye it has also been necessary to review parallel routes such as the main route to the Western Isles from Ullapool to Stornoway. The opening of the Bridge and removal of the tolls may have increased the use of routes through Skye to the Uig to Lochmaddy/Tarbert.

B.12 Cal-Mac performance trend data has been taken from Scottish Transport Statistics (STS). Data is grouped into passengers, cars and commercial vehicles (which includes lorries and coaches). Unfortunately, this source does not include any data from the period after the removal of the tolls so the impact of this change cannot be analysed.

Figure B4 Ferry Passengers, 1987 Index

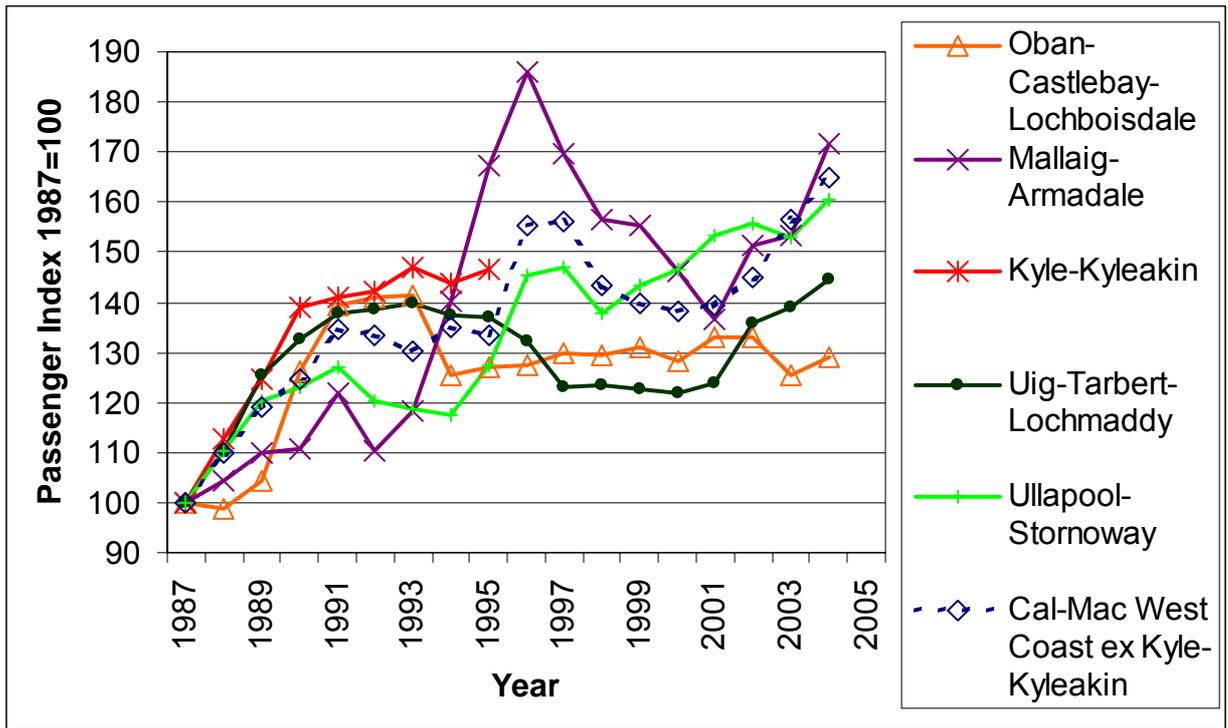
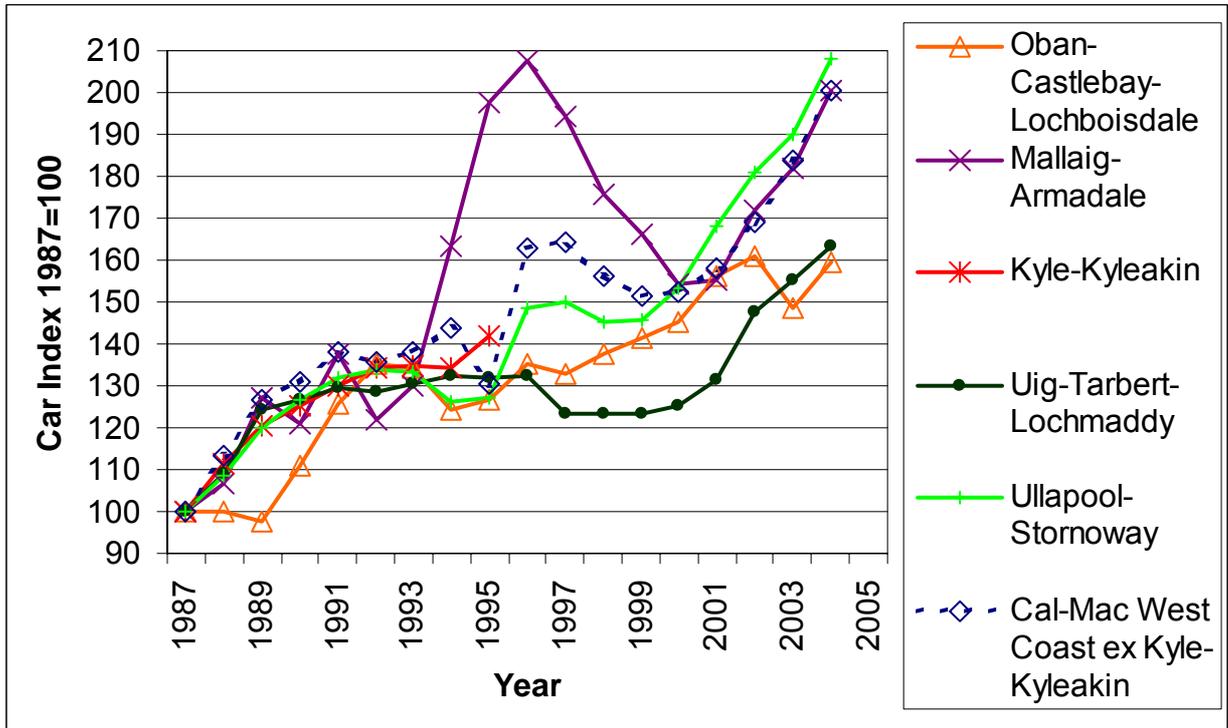


Figure B5 Ferry Cars, 1987 Index



B.13 Previous research did not identify any changes or trends related to the introduction of the Skye Bridge and the use of the ferry routes in the area. The analysis of the data presented below mainly concurs with this finding, although there is some evidence of small impacts from changes at the Kyle-Kyleakin crossing.

- B.14 Figures B4-B8 shows the passenger, car and commercial vehicle patronage data as a 1987-based index to demonstrate trends. Key issues arising from this analysis are as follows.
- B.15 The data appears to show no noticeable abstraction from the Ullapool-Stornoway service to the Uig-Tarbert-Lochmaddy ferry since the opening of the bridge. This is likely to be as a result of the introduction of the enhanced ferry and reduced trip times on the Stornoway service at the same time that the bridge opened, with any increase in attractiveness of travelling through Skye (via the bridge) being offset by improved capacity and trip times on the Ullapool-Stornoway route.
- B.16 The Mallaig-Armadale route has delivered a steady and significant increase in commercial (bus and LGV/HGV) vehicles since the introduction of linkspans on this route in that year in 1994. The use of commercial vehicles on this route does not appear to have been affected by the introduction of either the bridge or on any toll changes on the Skye Bridge. This may be in part due to the shorter distance to the central belt of Scotland when compared to access via the Skye Bridge, and also the use of the Ferry for one-way trips on round Skye coach trips (with the other leg of the trip using the Skye Bridge to leave / enter the island). However this increase still only relates to a small number of vehicles, with current figures at approximately only 1500 per annum (4 per day).
- B.17 This finding echoes the DTZ (1999, p.48) business survey which indicates that, although the Skye Bridge is the main route used to make deliveries and receive supplies to customers, routes in general have not changed since the opening of the Bridge. The few companies who indicated that they had altered the distribution of their Skye-mainland did so because of general business conditions rather than anything to do with the Bridge.
- B.18 Car and passenger traffic on the Mallaig-Armadale service appears to have been affected by the introduction of the bridge. Despite a marked increase in 1994-1996 after the introduction of linkspans, both passenger and car figures fell significantly, only recovering to match general patronage increases across the Cal-Mac network in 2002, suggesting that the introduction of the bridge has abstracted car traffic away from this route.

Figure B6 Ferry Commercial Vehicles, 1987 Index

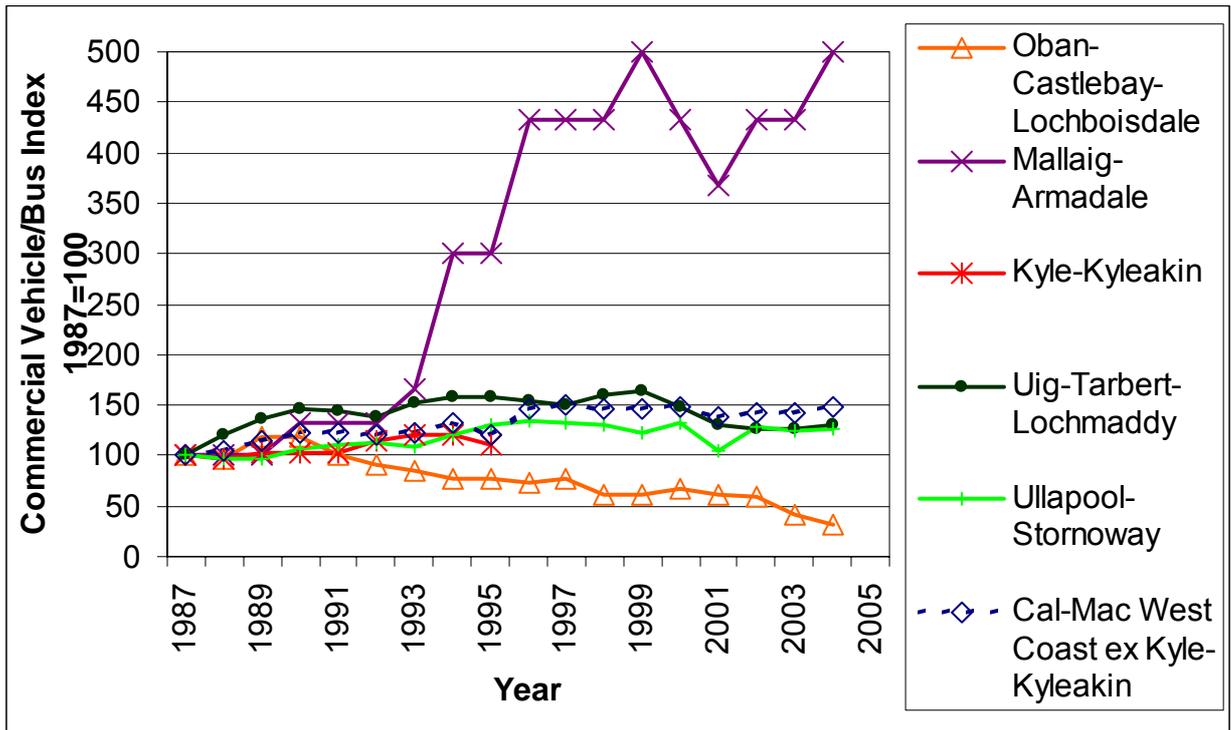


Figure B7 Ferry Commercial Vehicles, 1987 Index, Excluding Mallaig-Armadale

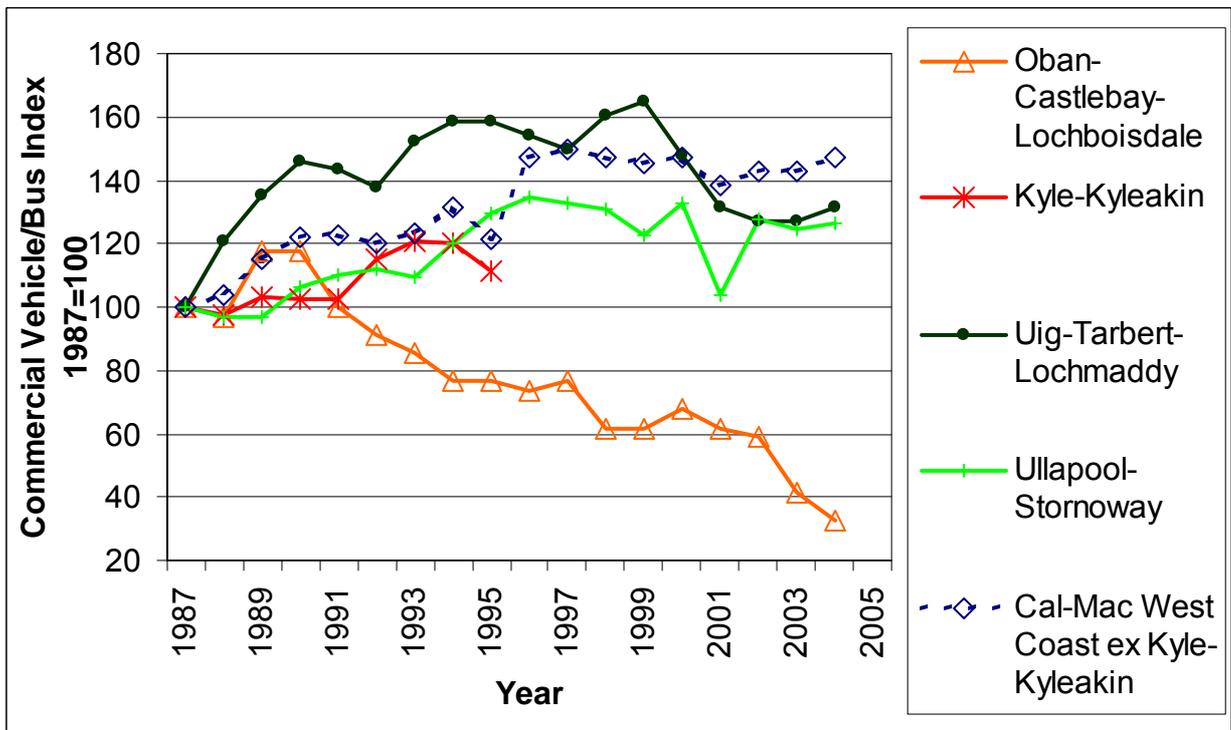
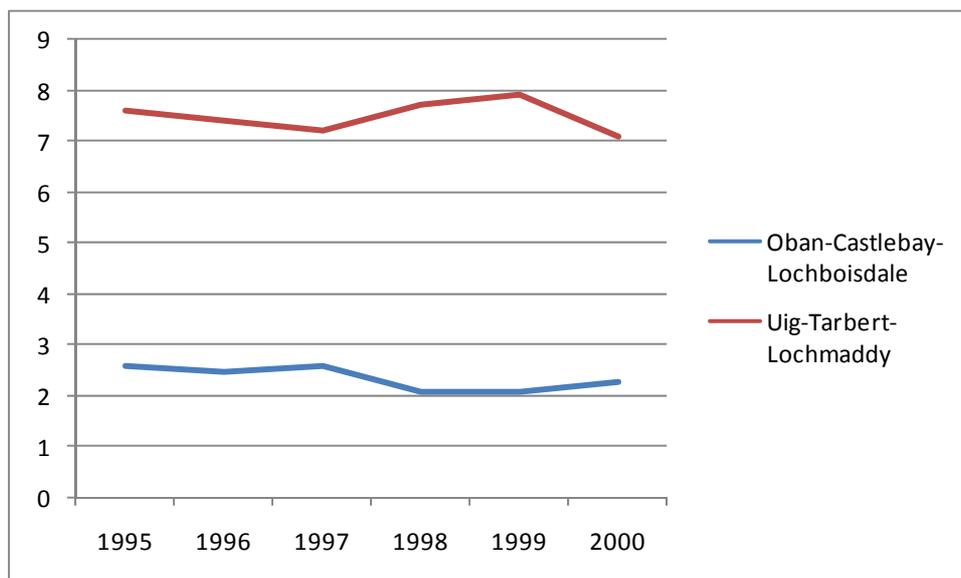


Figure B8 – Commercial Vehicle Traffic on Uist Routes

(thousands of vehicles)



C Appendix C – Economic Analysis

Travel time and operating costs

- C.1 Travel time has been calculated using the Ordnance Survey Mastermap road network. The time and distance have been estimated between the population weighted centroid for the 9 zone system for which data is available since the late 1980s.
- C.2 Operating costs have been estimated based on the distances between each zone centroid and an average percentage of vehicle types as follows:
- Cars and Light Goods Vehicles – 83% (occupancy 1.8)
 - Other goods vehicles – 15% (occupancy 1)
 - PSV/coaches – 2% (occupancy 15)
- C.3 Table C1 summarises the travel time at the ferry/bridge crossing.

Table C1 – Time changes

	1991	1995	1998	2004
	<i>Minutes</i>			
Pedestrians	0	+7.5	0	0
Scheduled Bus	0	Complex changes with new bus routes and frequencies that significantly increase some journey times and reduce others.		
Car	Up to 4 hours in summer peaks	-14	0	-2
LGV				
HGV				
Coach				

- C.4 The changes for bus services are complex. The initial investment in the shuttle bus service between Kyle of Lochalsh and Kyleakin supplemented the commercial and supported network but over time the shuttle bus declined and eventually was discontinued as the service network adapted to the evolving travel patterns with the bridge. These changes are covered by the analysis of pedestrian benefits in Paragraph C.10.

Changes in tolls

- C.5 Table C2 summarises the changes to tolls and fares from the bridge and toll changes.
- C.6 Data describing the proportion of car and light van users purchasing discounted tickets has been estimated from: total toll revenue, the classified vehicle counts and the make up of tourist and local traffic. Data on toll revenue is available for 1996 to 2000 and has been estimated for other years based on the traffic flow. The results have also been compared with the estimated of discount ticket sales in the 2002 Napier ERI report.
- C.7 Using this approach it is estimated that:

- 67% of car and light van users paid the high season rate
- 10% of car and light van users paid the low season rate
- 23% of car and light van users paid the discounted rate

C.8 Based on the total vehicle flows and the revenue received the toll per vehicle was approximately £5.80 between 1995 and 1998 and £5.70 after 1998. From December 2004 the bridge became free.

Table C2 – Tolls and Fares

Tolls/fares (single journeys)	Ferry		1995-1998 ⁷			1998- 2004		
	All Season	Discount	High Season	Low season	Discount	High season	Low season	Discount
Pedestrian s ⁸	0	0	£0.55		£0.11	+£(bus fare)?		+£(bus fare)?
Car/light vans	£5.40	£3.10	£5.20	£4.30	£2.44	£5.70	£4.70	£1.34
Local Bus *	£15.35		£14.90		-	£16.40		£12.26
Midi Coach *	£22.00		£21.60	£14.30	-	£23.70	£15.80	-
Coach *	£41.10		£37.50	£25.40	-	£41.20	£27.50	-
HGV1 *	£12.70		£12.70		£12.30	£14.00		£10.13
HGV2 *	£25.40		£25.40		£24.59	£27.90		£20.26

C.9 Tolls paid in pence per vehicle in each year of the bridge were (Scottish Transport Statistics 2005)

- 1995 641.6
- 1996 634.9
- 1997 615.2
- 1998 625.4
- 1999 622.3
- 2000 609.9
- 2001 588.6
- 2002 590.7
- 2003 563.2
- 2004 575.2

Pedestrians

C.10 For the purposes of the economic analysis it is necessary to also make an estimate of the additional costs for pedestrians and the level of trip

⁷ Ferry fares prior to the bridge opening were calculated at £1.70 per metre length of vehicle

⁸ Pedestrians and cyclists free before and after the bridge opened, but with the bridge involves a walk/cycle of about 3km.

suppression. About 275,000 trips appear to have been suppressed from 1996 when the bridge was built, rising to 410,000 by 2005.

- C.11 Although the shuttle bus passengers did not pay a toll directly, the fare of £0.55 for the 135,000 passengers equates to about £74k per annum. To this it is also necessary to add the additional time cost at 6.1 pence per minute accounting for £62k. For the remaining 275,000 pedestrians, the perceived cost of about an additional £1 appears to have suppressed the trip. For associated reduction in value is £137.5k. The total drop in benefits of £237.5k falls to £205k by 2006.

User benefit analysis

- C.12 The analysis assumes that all other transport changes in the Highlands such as the upgrading of the Armadale ferries are part of the Do-Nothing and Do-Minimum cases with two Do-Something options:
- The Tolloed Bridge as opened in 1995
 - The free bridge from 2005
- C.13 Relative to the Do-Minimum (ferry service with delays as per 1995) we define the following benefits per trip for the Do Something (the toll-free bridge):
- Vehicle travel time savings of 16 minutes per single trip except for trips to/from Kyleakin where a time saving of 14 minutes is experienced⁹;
 - Increased journey distance of 2km per single vehicle trip – except for trips to Kyleakin where journey distances increase by 2.6km;
 - Ferry fares in the Do Minimum increasing in line with inflation only;
 - Average inconvenience costs associated with the ferry to be equivalent to 10 minutes of journey time¹⁰; and
 - Pedestrian traffic experiences an increase journey time of 7.5 minutes and an increased fare of £0.55 per single trip.
- C.14 All results are presented as a single year snapshot at 2006 prices and values. These can be discounted over any period but given the different dates implementing each stage this allows a like for like comparison.
- C.15 It is assumed that the time saving from not needing to queue at the tolls is 2 minutes. In practice the delays were less than this in winter but the summer traffic flows are much higher and there were sometimes longer delays.

⁹ A 2 minute average delay at the toll booth is assumed. This would imply that the time saving for a tolled crossing would be 12 mins and 14 mins for Kyleakin and non-Kyleakin traffic respectively.

¹⁰ The ferry service in the Do Minimum has a 24hr operation so can be considered more in terms of a public transport inconvenience frequency than a typical ferry inconvenience level. A value for the inconvenience cost of public transport headways has therefore been derived from the Passenger Demand Forecasting Handbook.

- C.16 Background traffic growth is assumed to be 1.5% per annum based approximately on the annual average for rural Scottish trunk roads in the period.
- C.17 Inconvenience costs from the ferry operation have been added based on a 10min ferry headway. Inconvenience values for this headway have been used from the Passenger Demand Forecasting Handbook (TRL 2005).
- C.18 Total user benefits in 2006 of moving from a 24hr ferry to a toll-free bridge is £9.9 million. 60% of this comes from the removal of tolls, and 33% from the replacement of the ferry with the bridge.

Table C3 – 2006 Single year user Benefits (£000s)¹¹

Scenario	Motorised Traffic				Pedestrians		Total	Percentage of benefit delivered by each incremental improvement
	Time	VOCs	Fares/Tolls	Inconvenience costs	Time	Fares/Tolls		
From 24hr ferry to Bridge	2,135	-80	184	1,541	-188	-126	3,465	35%
Incremental benefit of reducing bridge tolls	0	0	494	0	0	0	494	5%
Incremental benefit of removing bridge tolls	432	0	5,515	0	0	0	5,947	60%
From 24hr ferry (zero delay) to toll-free bridge	2,567	-80	6,193	1,541	-188	-126	9,906	100%
From Do-Nothing to toll-free bridge	2,999	-80	12,203	1,541	-188	-126	12,215	N/A

- C.19 Inconvenience costs form 15% of the total user benefit of moving from a 24hr 10 minute frequency ferry to a toll-free bridge. However they account for 44% of the user benefit of moving from a 24hr ferry (10 min frequency) to a tolled bridge. Despite the 24 hour ferry being of a high frequency the inconvenience costs are still a high proportion of the total. For longer or less frequent ferries this benefit would be likely to be much higher.
- C.20 The fares component of the pedestrian impacts relates to the need to pay for the shuttle bus and the time costs relate to the additional crossing time.
- C.21 Matrices were available from the 1995 results but not classified by trip purpose.
- C.22 For 1998 the data was derived from the data in the printed report and this required some estimation to ensure it was in the same format as for 1995 and 2006. In particular the zoning system used in 1998 was different from that used in 1995 and 2006 and this required some aggregation of results. Also the results did not always make clear how journeys including multiple stages were coded in 1998. Nevertheless the results ensure an acceptable degree of accuracy overall.
- C.23 Table C4 shows the year by year breakdown of how the benefits have accumulated since the bridge opened. This is based on the comparison of Do-Nothing with developments that took place.

¹¹ 2006 prices and values

Table C4 – Single Year Benefits by Year

Year	Single year benefit
1996	2942
1997	3851
1998	4759
1999	5668
2000	6577
2001	7486
2002	8394
2003	9303
2004	10212
2005	12029
2006	12215

D Appendix D – Business Surveys

Survey Overview

- D.1 Businesses in the Skye and Lochalsh area were surveyed by telephone, and face to face interviews between May and July 2006. Just over 130 interviews were undertaken by telephone and 16 face to face interviews were held. Interviews were carried out during working hours on weekdays and used a standard survey form.
- D.2 Responses were compared with findings from previous studies of the Skye Bridge where appropriate or relevant. Data was analysed both collectively and by business sector to explore any differences in impact upon different business sectors.
- D.3 Many businesses were reluctant or unable to provide figures on their turnover, operating costs etc., and this limited the quantitative analysis. However almost all were happy to provide general details such as increases and decreases in profits, custom and turnover and these are discussed where relevant.
- D.4 Table D1 shows that the sample obtained for the survey broadly represents the split of employees in the area. This cannot directly be related to the number of businesses, as there will be differing business sizes – but this does provide a broad impression that the proportions of businesses sampled are representative.

Table D1 - Business Survey Sample

Business Sector	Responses %	Employees by Sector (%) Skye and Lochalsh*
Agriculture, Hunting And Forestry	5	14
Fishing	7	
Manufacturing	3	8
Construction	3	14
Wholesale And Retail Trade	31	42
Hotels & Restaurants	39	
Transport, Storage And Communication	6	11
Health And Social Work	1	-
Other Community, Social & Recreational	6	12

- D.5 Of these companies, the majority of businesses were independent single site / sole traders (88%), with only 9% subsidiaries of larger businesses and 4% independent businesses with branches elsewhere.

Employment Overview

- D.6 77% of businesses indicated that they had experienced no change in employment since 2003. Table D2 shows the employment trends between 2000 and 2006 for all business surveyed in the standardised telephone survey.
- D.7 In general, more businesses have been increasing employees since 2000. However between 2003-2006 there was more 'flux' in employment, with increases in the number of business indicating that they have increased and decreased employee numbers. The average

number of employees was approx 3.5 in 2006. This increased slightly over the period 2000-2006 to 3.2. Only 11 businesses employ over 5 members of staff at present (with 5 businesses over 10 and one over 25 employees).

Table D2 - Employment Change (all Businesses) 2000-2006

	2000-2003	2003-2006	2000-2006
Increase	11%	16%	23%
Decrease	3%	7%	9%
No Change	85%	77%	68%

D.8 Approximately 28% of businesses surveyed employed seasonal staff – no significant changes in seasonal staff employment trends were identified.

Table D3 - Employment Change: Exporting Sector (No. of Businesses) 2000-2006

Business Sector	2000-2003			2003-2006			2000-2006		
	Decr	Incr	No Chg	Decr	Incr	No Chg	Decr	Incr	No Chg
Agriculture, Hunting And Forestry			4	1		3	1		3
Fishing	1		5	1		5	2		4
Manufacturing		1	2		2	1		3	
TOTAL	1	1	11	2	2	9	3	3	7

Table D4 - Employment Change: Local Market (No. of Businesses) 2000-2006

Business Sector	2000-2003			2003-2006			2000-2006		
	Decr	Incr	No Chg	Decr	Incr	No Chg	Decr	Incr	No Chg
Construction		1	2			3		1	2
Wholesale And Retail Trade	1	2	24	2	5	20	3	6	18
Transport & Communication		2	3		1	4		2	3
Health And Social Work			1			1			1
Other Community, Soc. & Recr.		1	4		1	4		2	3
TOTAL	1	6	34	2	7	32	3	11	27

D.9 The tables above show the number of companies which have experienced changes in employment over the period 2000-2006 by sector. These are split by sectors that export (i.e. off Skye), those that predominantly serve the local market, and hotels and restaurants.

Table D5 - Employment Change: Hotels and Restaurants (No. of Businesses) 2000-2006

	2000-2003			2003-2006			2000-2006		
Hotels & Restaurants	1	3	30	2	5	27	2	6	26

D.10 The tables above do not suggest that there have been any major differences in growth between sectors – with similar employment changes across all. This concurs with findings from the DTZ (1999) Skye bridge evaluation and suggests that employment levels have been more strongly related to wider market changes than the building of the bridge and removal of the tolls.

- D.11 The manufacturing businesses surveyed all indicated growth – but the small sample prevents any firm conclusions being drawn.

Business Performance

- D.12 The majority of businesses were either not able or willing to divulge detailed information relating to profit and turnover, making quantitative analysis impractical. However some general information and trends were identified. In particular, two key factors were identified by businesses as affecting their profitability and turnover:

- Significant recent increases in fuel prices have negatively affected business through cost increases (both operationally and for deliveries / supplies)
- The increase in length of the tourist season (now March to October) has assisted businesses related to the tourist market

- D.13 81% of businesses surveyed commented qualitatively on the effect of the removal of the tolls on turnover and profitability. Of these, 43% felt that it had affected their business, although this occurred both positively and negatively for different businesses.

- D.14 The reasons for, and effects, of these changes is interesting. 66% of these businesses indicated that the change had been positive in terms of profits / turnover – key reasons included:

- increased day trippers
- increased short stay tourists
- opening up of the markets between Skye and the Mainland for both retail and tourism based activities.

- D.15 However, the businesses who had experienced negative affects as a result of the removal of the tolls cited very similar reasons for this change. This suggests that the businesses that have been well placed to respond to the opening up of markets have benefited from the removal of the tolls, and those that were previously operating in a protected market have suffered as a result. Positive and negative effects were identified similarly across different business sectors.

- D.16 Key examples of these positive and negative changes are as follows:

- Hardware and building retailer Jewson's in Broadford identified significant increases in custom from the Mainland after the removal of the bridge tolls
- Shops in Kyle and Plockton identified more custom from Skye based visitors and residents
- Businesses in Kyle indicated that the removal of the tolls has meant that fewer people stop (for shopping and accommodation) en route to Skye, negatively affecting business.

D.17 Businesses were asked to rate the importance of the removal of bridge tolls to certain aspects of their company performance. The average score for each performance measure is shown in the table below.

Table D6 - Average Rating of Importance of Toll Removal on Business Performance

Business sectors	Overall	Existing Sales	New Sales	Recruitment	Investment	Attractiveness of Location	Competition	Transport
Exporting Sectors	2.6	2.9	2.1	2.0	2.5	2.3	2.5	3.5
Local Market Sectors	2.5	2.4	2.4	3.0	2.9	2.7	2.5	2.6
Hotel / Restaurants	2.8	2.8	2.8	2.9	3.0	2.9	3.1	2.9
ALL	2.6	2.7	2.5	2.8	2.8	2.7	2.8	2.9

Scores were allocated as follows:

Strongly Positive=1, Positive=2; Neutral=3, Negative=4, Strongly Negative=5

D.18 Results from this table were compared with results from the DTZ (1999) survey (which asked the same questions on the impact of the bridge) and are summarised as follows:

- Most scores are close to 3, indicating neutral responses, this is similar to the DTZ (1999) survey. However, all responses are in the range 2.5 to 2.9 suggesting that the toll removal has had a slightly more positive impact overall than was previously identified for the introduction of the bridge.
- The DTZ(1999) survey highlighted a negative impact on all aspects of business performance for the retail sector. This is not reflected in the current survey (retail results – not shown – closely mirror the local market sector as a whole) suggesting that the removal of the tolls may have opened up retailing markets to a greater effect than the building of the bridge.

D.19 The opening up of markets is also reflected in the (relatively) high score relating to impact on competition – particularly for hotels / restaurants.

Accommodation Providers

D.20 The survey included 20 interviews with accommodation providers, two of which were not operating all year round. Bed and Breakfast accommodation comprised 50% of the sample, with the rest evenly split between hotels, guest houses, hostels, campsites and caravan sites.

D.21 No respondents indicated any significant overall employment or staff changes in recent years.

D.22 90% of respondents indicated that guests typically stayed no more than three nights, and there were some indications by respondents that visitors were staying for shorter periods than previously, although this was not universally felt by respondents. The 1999 surveys stated

that 80% of accommodation providers had not experienced any change in length of stay as a result of the building of the bridge. If removing the tolls has had an impact on these businesses then it is that shorter stays are now viable.

- D.23 Data on room vacancies and available capacity was not provided by sufficient respondents to facilitate meaningful estimates of overall vacancy levels. However, qualitative responses indicated that there had been a perceived increase in overnight stays particularly for low cost accommodation camper / caravans. However it was suggested that this might be due to publicity in magazines about the removal of the bridge toll. In particular one motorcaravan magazine suggested that a campsite in Skye was now the best site in Britain.
- D.24 Impressions of the impact of the bridge and the removal of the tolls on accommodation business were mixed, with equal numbers of respondents suggesting that these changes had, or had not had, an impact on business.

Other Transport Requirements

- D.25 41% of businesses that undertook 'other business travel' (i.e. not deliveries of supplies and goods), indicated that they had increased their frequency of travel over the bridge since the removal of the tolls – predominantly for local trips. A Broadford based baker/ butcher typified these changes with the following comment on the impact of the toll removal:
- *“Before the removal of the tolls I would have gone to Kyle with a few things to do, but now cross bridge to Kyle if I only need one thing. Also if I was bothering to make a trip off the island I would have gone to Inverness and not just Kyle”*
- D.26 Businesses also described increased convenience / reduced costs for this form of business travel since the removal of the tolls. No businesses indicated that they used any other crossings for business trips.

E Appendix E – Household Survey Results

Sample

E.1 The distribution of 943 survey returns was as shown in Table E1.

Table E1 - Skye and Lochalsh Survey Returns

Area	Postcode Sectors*	Returns	Royal Mail Delivery Locations	Households (2001 Census)	Returns as % of Households
Lochalsh	IV40 8, IV52 8, IV53 8	138	1607	1227	11%
South Skye (Kyleakin & Sleat)	IV41 8, IV43 8, IV44 8, IV45 8, IV46 8	115	585	501	23%
South Skye (Broadford & Breakish)	IV49 9, IV42 8	115	730	597	19%
North Skye (Portree area)	IV51 9	384	2296	1952	20%
North Skye (other)	IV55 8, IV47 8, IV48 8, IV56 8	172	1146	890	19%
Others	Not Specified	19	N/A	N/A	N/A
SKYE AND LOCHALSH		943	6364	5167	18%

Postcode sectors have been combined for the purposes of this table as Census / Royal Mail data was provided collectively for these areas.

- E.2 There is a fairly even spread of responses throughout Skye and Lochalsh but with a slightly higher percentage of returns from the areas closer to the bridge (South Skye). This is perhaps unsurprising as this is an area in which greater impacts from the changes to the crossing may have been felt. The lowest response rates are in Lochalsh (on the mainland)– where the changes may have had the least impact upon residents.
- E.3 The survey returns have been analysed by population age to assess how closely the returns reflect the current age distribution of the population. The age distribution of the sample is representative of the population, with a slight skew towards the older residents (those over 65). This is to be expected as there is a tendency towards higher response rate to household postal surveys from retired residents.

Table E2 - Age Distribution of Resident Population in Skye and Lochalsh Compared to Age Distribution Represented by Survey Sample

Survey Sample		Skye and Lochalsh Residents (from 2001 Census data)	
Age Group	% of Sample (all household members)	Age Group	% of Total Population
Under 16	16%	0-19	24.4%
16-64	58%	20-64	58.4%
Over 65	26%	Over 65	17.3%
Total	100%	Total	100%

Table E3 - Annual Household Income Per Annum: Survey Responses

	Not Stated	< £10k	£10-£20k	£20-£30k	£30-£40k	>£40k
Sample no	119	166	288	168	100	101
Sample %	13%	18%	31%	18%	11%	11%

Living in Skye and Lochalsh

E.4 Table E4 shows that access to countryside and the environment are, typically the most important factors for residents to live in Skye and Lochalsh. This finding is not surprising due to the nature of the area, and reinforces the fact that many residents accept difficulties in access when living in remote rural areas. These findings almost exactly match those of the 1995 survey. The notable exception to this is that access to other services is now (approximately) as important as access to work and family ties.

Table E4 - Importance Of Factors In Affecting Decision To Live In Skye & Lochalsh

	Family Ties	Access to Work	Access to Shops	Access to Schools	Access to Other Services	Access to the Countryside	Environmental Attractiveness
Skye	2.09	2.09	1.97	1.58	2.04	2.65	2.66
Lochalsh	2.02	2.07	1.97	1.55	2.09	2.63	2.66
Skye and Lochalsh	2.08	2.08	1.97	1.57	2.05	2.64	2.66

Scores used: No Importance=1; Some importance=2; Great Importance=3

E.5 Approximately 50% of the respondents had been living at their current address for less than 10 years, and there was no significant difference between their impressions of the importance of access to other services. This suggests that introduction of the bridge has meant that all residents now find that the experience of gaining access to wider services more important to their lifestyles.

Impact of Toll Removal on Household Budgets

E.6 Residents were asked if the removal of the tolls had made any impact on their monthly household budgets for transport generally, bridge tolls specifically and other household expenditure. Across Skye and

Lochalsh, approximately 45% of respondents indicated that they had made savings, but in the south of the Island this is significantly higher at 60%.

- E.7 No respondents identified increases in expenditure. However, based on the analysis in Appendix B, there appears to be significant increases in fuel costs for many households. The reason that this has not been highlighted by the respondents themselves, perhaps highlights the different perceptions of car fuel and operating costs and tolls.
- E.8 Table E5 shows how households responded to questions about expenditure by location.
- E.9 Given the likely bias in some responses the analysis:
- Compared both median and mean averages.
 - Investigated what the change in travel patterns identified elsewhere in the same household response should have yielded in savings on bridge tolls.

Table E5 - Savings to Households Surveyed as a Result of the Toll Removal

	Yes	No	Total	% Yes	% No	Mean Saving (£ per month)	Median Saving (£ per month)
Skye and Lochalsh	423	476	899	47%	53%	27	20
South Skye	139	95	234	59%	41%	28	20
North Skye	228	314	542	42%	58%	26	15
Lochalsh	60	73	133	45%	55%	30	25

- E.10 Only one household (from North Skye) indicated that they had received a reduction in household budgets as a result of the removal of the tolls. This was from a household that operated B&B and indicated a reduction in income due to a perception that the tolls had reduced the length of stays of visitors to the island.
- E.11 Only 9% of respondents identified that they had made savings in household expenditure, and it can be estimated from the reported travel behaviour and savings of these respondents that average household saving in this group were about £5 per month.
- E.12 Taking the survey responses at face value and using census data to factor up this sample across the area Table D6 suggests that the removal of the tolls has resulted in over £0.75m per year saving for the residents of Skye and Lochalsh.

Table E6 - Estimation of Savings to All Households in Skye and Lochalsh as a Result of the Toll Removal

	% Households Indicating Savings	Mean Saving per Month (£)	No. Households (2001 Census)	Estimated Saving per Month (£) – all Households	Estimated Saving Per Annum (£) – all households
Skye and Lochalsh	47	27	5167	65,600	790,000
<i>South Skye</i>	<i>59</i>	<i>28</i>	<i>1098</i>	<i>18,300</i>	<i>220,000</i>
<i>North Skye</i>	<i>42</i>	<i>26</i>	<i>2842</i>	<i>31,100</i>	<i>375,000</i>
<i>Lochalsh</i>	<i>45</i>	<i>30</i>	<i>1227</i>	<i>16,600</i>	<i>200,000</i>

- E.13 Appendix B shows that for every extra trip as a result of the toll removal in North Skye there are two extra trips from South Skye. Also the extra trips from North Skye involve very much longer journeys where the additional vehicle operating cost is likely to exceed the toll cost. Therefore the responses provided by residents cannot be taken to be a reflection of the actual impacts on budgets.
- E.14 The traffic data does not allow a precise estimate of the number of home based trips each year but based on between 300k and 600k crossings of the bridge by local traffic each year and an average toll for locals of £1.34 the toll savings would be between £400 and £800k. The £790k estimated from the household surveys therefore appears to be a reasonable estimate.
- E.15 Overall, this saving is likely to be an underestimate since most respondents did not appreciate the non transport savings they should be able to make. However, it appears that additional car operating costs have been underestimated and people in North Skye have significantly overestimated the savings they are able to make as a result of the toll removal. These figures therefore need to be treated with caution.

Impact on Different Journey Purposes

- E.16 Table E7 compares the perceived impacts by households on different journeys purposes of: the removal of the tolls (taken from the current survey); and the building of the bridge (from the DTZ, 1999 survey). The impacts were explored using similar questioning methods.

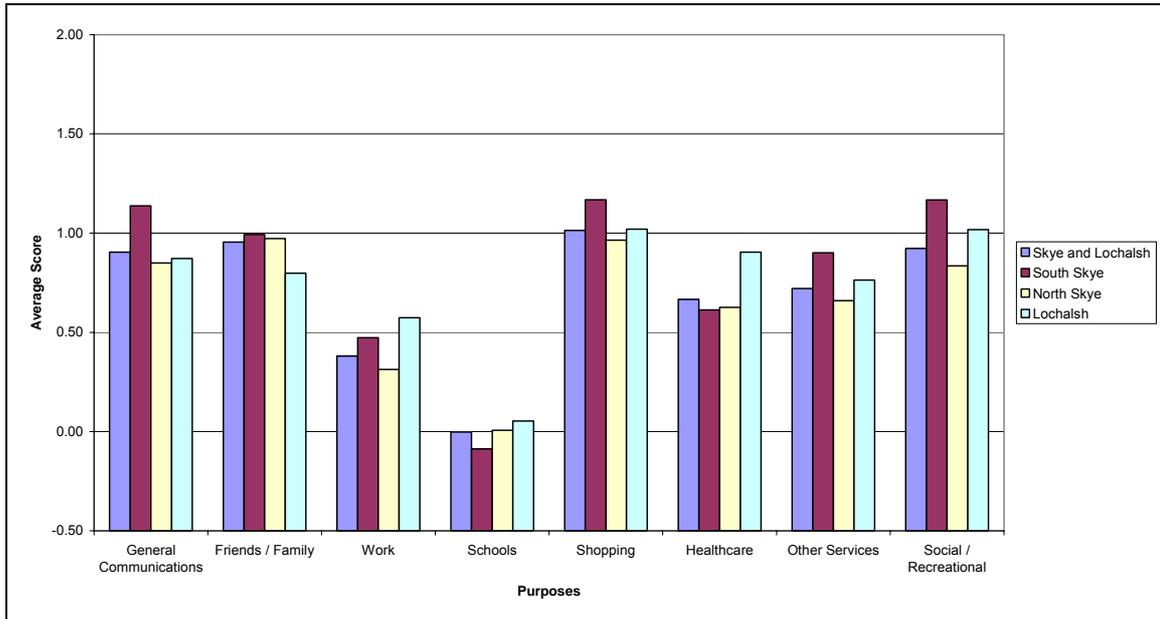
Table E7 - Perceived Impact of the Abolition of the Skye Bridge Tolls on Different Journey Purposes

	General Communications	Friends / Family	Work	Schools	Shopping	Healthcare	Other Services	Social / Recreational
2006 - Skye and Lochalsh	0.9	0.96	0.38	0	1.01	0.67	0.72	0.92
1999 - Skye and Lochalsh	0.49	0.53	0.09	-0.1	0.45	0.5	0.29	0.4
2006 - South Skye	1.14	1.07	0.44	-0.02	1.16	0.56	0.91	1.15
2006 - North Skye	0.81	0.94	0.30	-0.01	0.94	0.65	0.62	0.80
1999 - Skye	0.52	0.59	0.07	-0.11	0.49	0.46	0.31	0.38
2006 - Lochalsh	0.87	0.8	0.57	0.05	1.02	0.9	0.76	1.02
1999 - Lochalsh	0.41	0.33	0.17	-0.07	0.32	0.64	0.24	0.44

Scores used: Very Positive=+2; Neutral=0; Very Negative=-2

- E.17 Comparing the results clearly demonstrates a perception that the removal of the tolls has a positive impact for all trip purposes, with the exception of access to schools (which has remained constant as having very little effect).
- E.18 Interestingly, access to health was perceived to be the trip purpose for which the Bridge had the second most significant impact (and the most for Lochalsh – likely to be related to access to Broadford hospital from the mainland), but after the removal of the tolls this impact is less prominent – although this is still felt more significantly by residents in Lochalsh.
- E.19 It is perhaps unsurprising that, in general, the biggest impacts of the toll removal were felt by residents in South Skye, with social and recreational, visits to friends, and general communications perceived to have been assisted most by the removal of the tolls (see graph below). It is interesting that, although not as significant as other trip purposes, improved access to work is greatest for residents in Lochalsh.

Figure E1 - Perceived Impact of the Abolition of the Skye Bridge Tolls on Different Journey Purposes

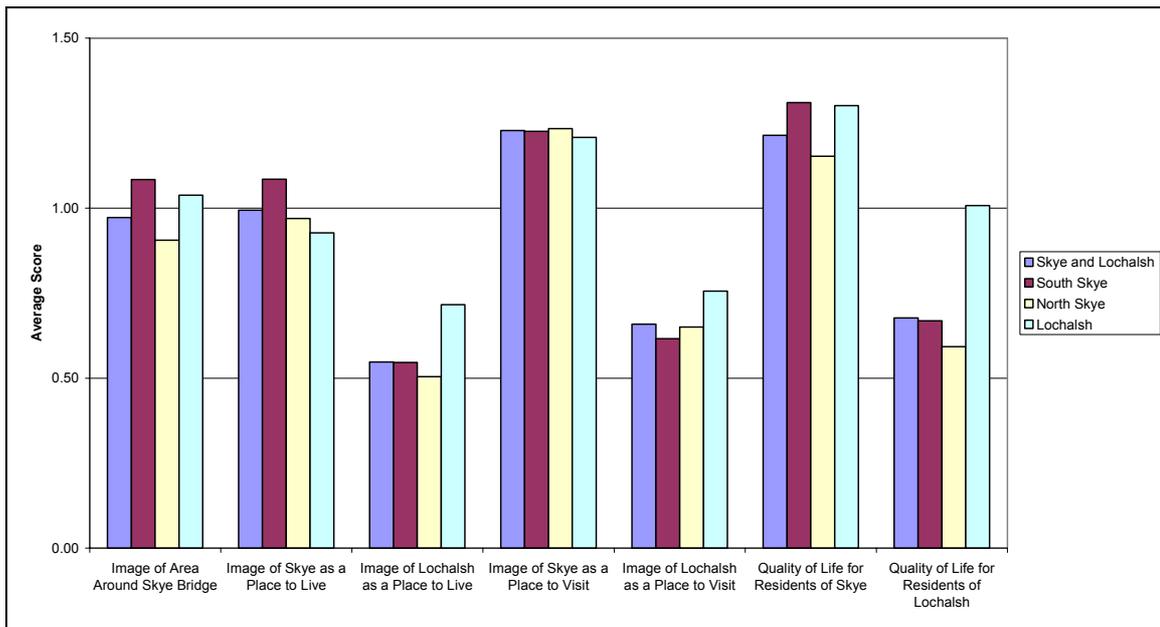


Scores used: Very Positive=+2; Neutral=0; Very Negative=-2

Impact on the Area

E.20 Residents were asked to provide their perceptions of the impact of the removal of the tolls on the image of the area. The graph below shows the average responses by different area, and clearly demonstrates that residents believe that the abolition of the tolls has had the greatest impact for the residents of Skye and on the image of Skye and Lochalsh as a place to visit.

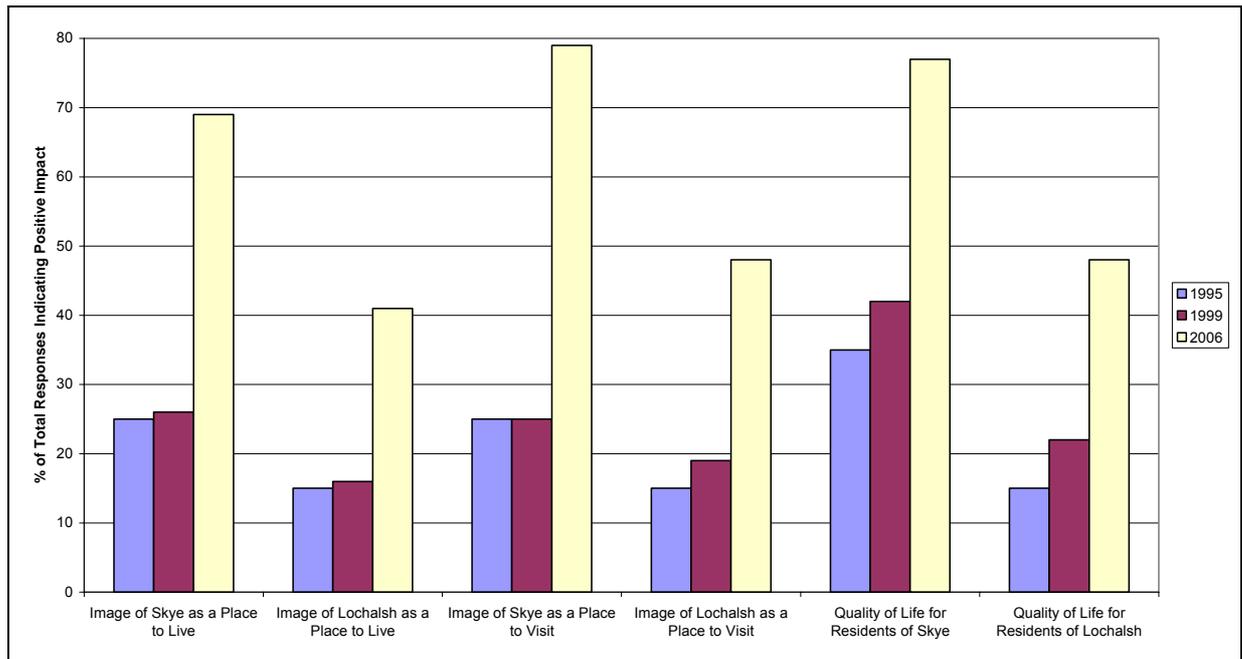
Figure E2 - Perceived Impact of the Abolition of the Skye Bridge Tolls on the Area



Scores used: Very Positive=+2; Neutral=0; Very Negative=-2

- E.21 It is interesting that the residents of Lochalsh believe that the removal of the tolls has increased the quality of life for those in Lochalsh significantly more than residents of Skye.
- E.22 A similar question was also asked in previous surveys on the introduction of the bridge and comparisons can be made between now and then as to the impact of the introduction of the bridge and removal of the tolls, and these are shown in Figure E3.

Figure E3 - Comparison of Perceived Positive Impacts of The Bridge and Toll Removal By Residents of Skye and Lochalsh



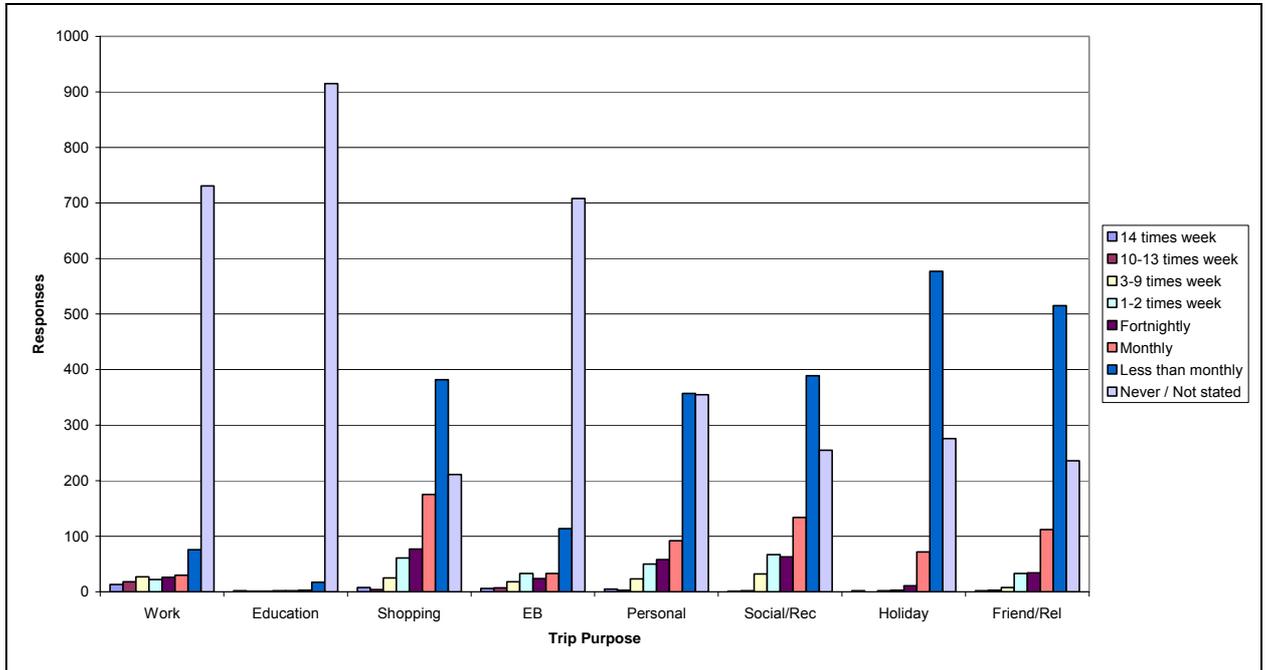
- E.23 In general, this demonstrates a general increase in the perception that the bridge is being increasingly viewed as an asset by local people – supporting a key original hypothesis from the original 1995 study.

Household Travel and Trip Patterns

- E.24 It was hypothesised that a key impact of the bridge would be to increase the volume of trip activity. Residents were asked for their current trip activity and these are compared to the findings from the previous surveys.
- E.25 The 1998 survey indicated that shopping, visiting friends and relatives and social/recreational were the most frequent trip purposes for crossing the bridge by household. Unfortunately this data does not allow the volumes of trips to be explored. For the purposes of the 2006 survey, residents were asked to provide the frequency of their trips by journey purpose, and these are presented for all residents of Skye and Lochalsh in the Figure E4
- E.26 The results of the current survey also indicate that shopping, visiting friends social and recreational trips are still ranked highly as reasons for crossing the bridge. In general the frequencies and trip purposes are similar across the whole area, however a closer examination of the

data reveals that the crossing activity of the residents of South Skye is significantly higher for certain trip purposes.

Figure E4 - Frequencies and Trip Purposes of Skye Bridge Crossings for Households in Skye and Lochalsh

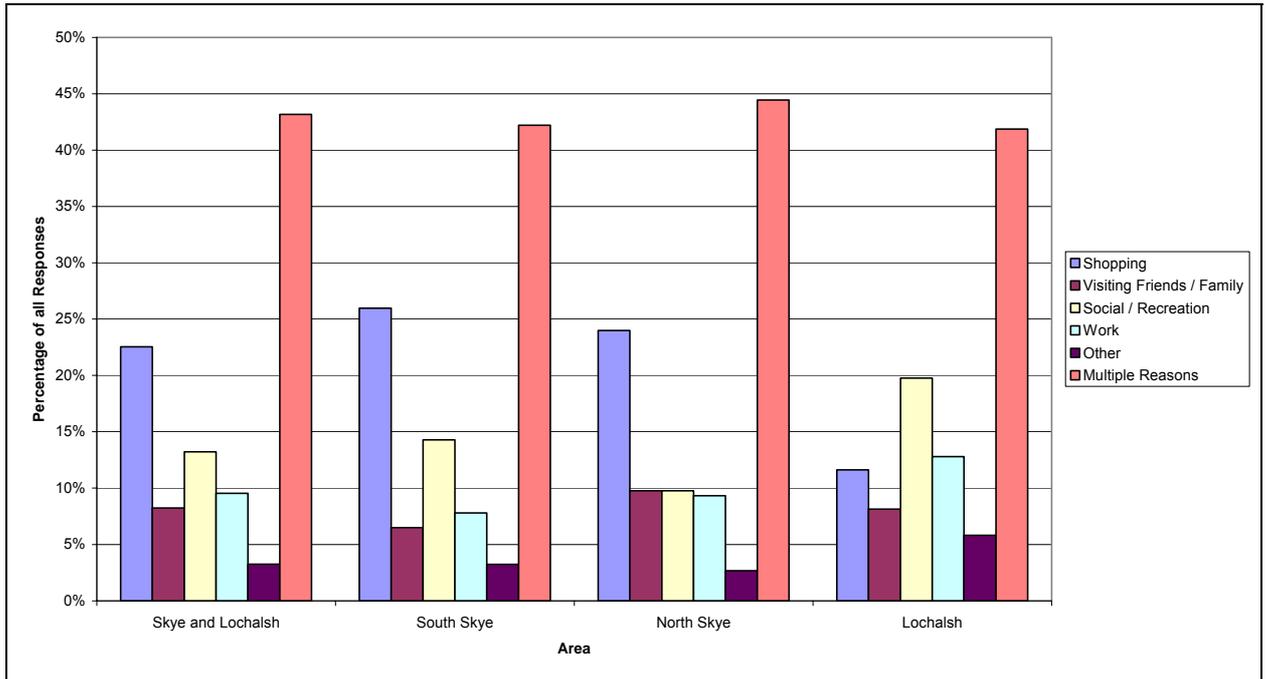


E.27 For the residents of South Skye, 21% of cross the bridge for shopping one or two times per week, with a further 15% undertaking crossing trips fortnightly. This compares to 6% and 8% respectively for all residents in the area. These figures are similar for social and personal trip purposes.

E.28 The travel behaviour, in terms of bridge crossing activity, is therefore significantly greater for those living in the south of the Island. The extent of the impact of the removal of the tolls on this trip activity was directly explored through survey questioning.

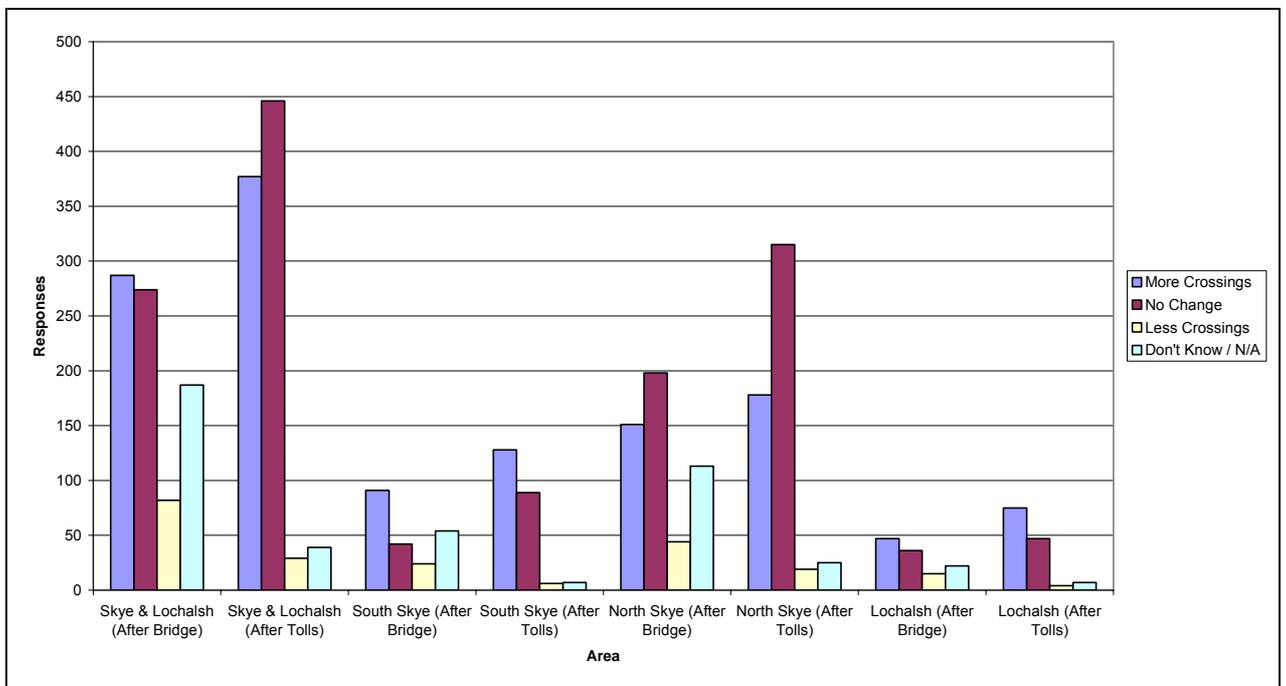
E.29 Residents were asked to indicate their primary reason for any additional trips over the bridge since toll removal to explore the impact of the toll removal. The graph below shows these responses and demonstrates that shopping, social and social trips are again the primary trip purposes for these additional journeys. Shopping trips, however, do dominate, particularly in the South of Skye.

Figure E5 - Primary Reason For Additional Trips Made over the Bridge Since the Abolition of the Tolls – By Area (% of responses by area)



E.30 Residents were also asked for their perceived changes in crossing activity as a result of the removal of the tolls and the introduction of the bridge. These findings are described in the figure below.

Figure E6 - Perceived Changes to Household Crossing Activity after the Building of the Bridge and after the Toll Removal



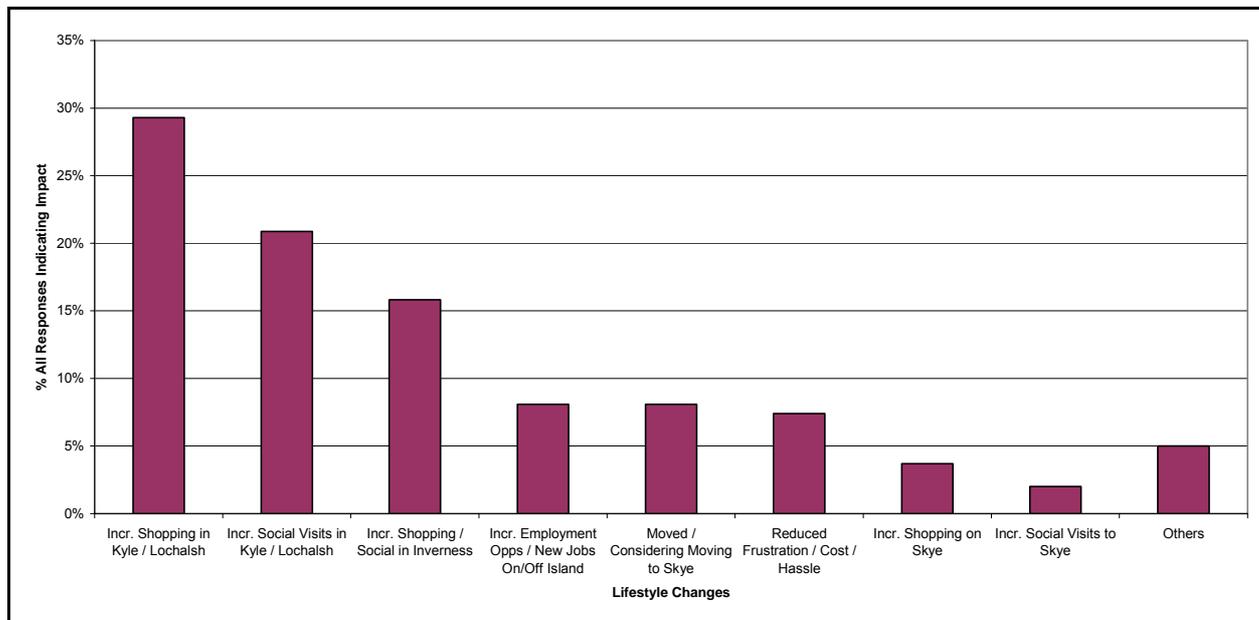
E.31 The graph indicates that the removal of the tolls has increased trip activity. Most residents believe they are now making significantly more trips than they were before the removal of the tolls. Only in North

Skye has the level of crossing activity remained broadly consistent despite the toll removal.

Impact of toll removal on travel or lifestyle changes

E.32 Figure E7 shows how respondents described the impacts of the removal of the tolls.

Figure E7 - Qualitative Responses on Impacts of the Toll Removal on Travel and Lifestyle



E.33 Key impacts are therefore:

- Increased shopping in Kyle and Lochalsh (19% responses indicating impacts / 10% all surveyed)
- Increased social and recreational activity in Kyle and Lochalsh (21% / 7%)
- Increased shopping and social activities in Inverness (16% / 5%)

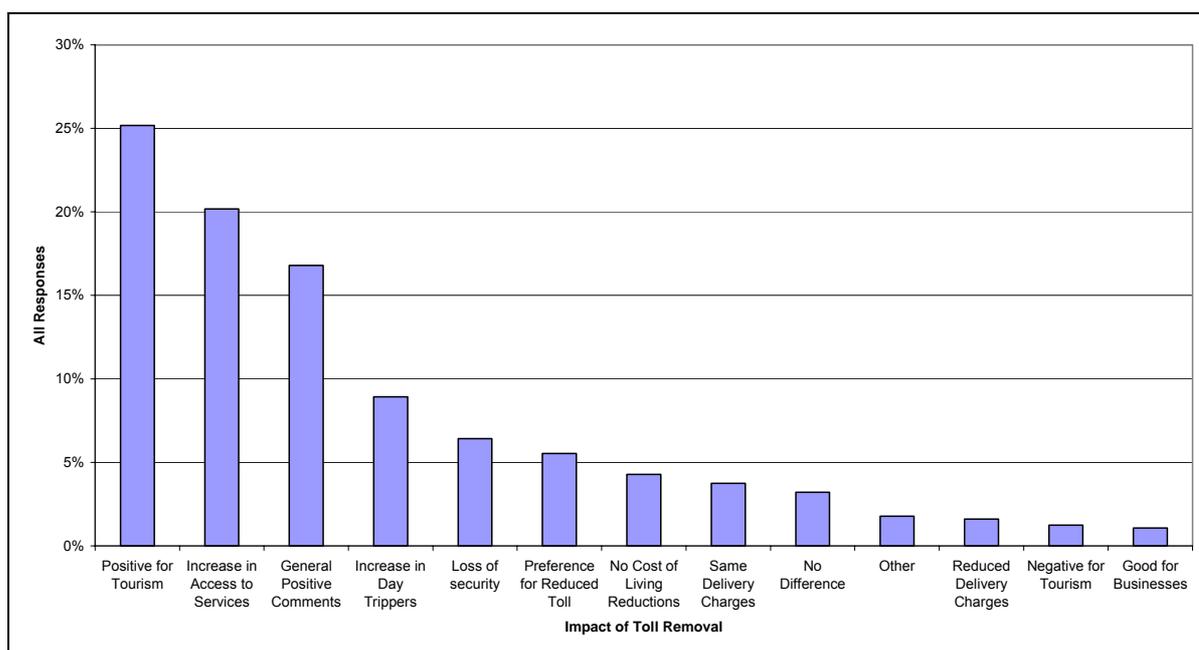
E.34 It is interesting that access to work issues and increasing the motivation to live on Skye are mentioned, but these only account for approx. 8% of responses indicating an impact (1% of total responses)

General comments on the impact of the toll removal

E.35 All responses to the question of general impacts of the bridge were also coded to assess the frequency of different impacts. 943 returns yielded 526 responses (59%) indicating an impact of the toll. (Non responses include cases where no response has been given and non-relevant responses).

E.36 The perceived greatest impacts for respondents are increases in tourism and access to services. Figure E7 shows the percentage of respondents indicating 13 impacts of toll removal. It is interesting to note the perceived importance of tourism benefits given the relatively small tourism impacts identified in the visitor surveys.

Figure E8 - Open Qualitative Responses on General Impacts of the Toll Removal



- E.37 In general these comments reinforce the findings that the bridge is increasingly being viewed as an asset by the local population. The most frequent responses to this question were positive – with impact on access to services, and enhanced tourism opportunities being frequently mentioned.
- E.38 However a significant number (18% of responses) commented that there was an increase in day trippers – resulting in reduced income for accommodation providers. In addition, security concerns as a result of the removal of the barrier were cited by 6% of respondents that responded to this question.
- E.39 Interestingly, 6% indicated that they would have been happy to keep a reduced toll (e.g. £1) to help pay for the bridge, general transport infrastructure and to maintain the jobs at the toll plaza.
- E.40 There were also some conflicting comments regarding cost of goods delivery hauliers – with opposite responses from different users regarding the impact of the toll removal on postage and delivery costs.

Conclusions

- E.41 Based on the review of the household survey it is clear that the removal of the tolls has had a significant impact on the trips activity of residents in Skye and Lochalsh. Impacts and changes in trip activity have occurred to a greater extent in the south of the Isle of Skye – with changes and perceived changes affecting residents in the north of Skye to a noticeably lesser extent. 60% of residents in South Skye indicate savings caused by removal of the tolls, compared to 42% for the north of the Isle. Based on the travel patterns the savings for people in the north are likely to lead to modest increases in disposable

household income whilst in the south the costs of additional trip making accounts for most the savings from the toll removal.

- E.42 Based on survey responses, the removal of the tolls has saved residents of Skye and Lochalsh approximately £790,000 per year in toll savings. Despite greater crossing activity by residents in the south, just under half of this extra money is based in the North of Skye – due higher numbers of residents in the area – 28% is based in South Skye and 25% in Lochalsh.
- E.43 Trip increases as a result of the toll removal are chiefly for shopping, social and recreational purposes – matching the purposes identified by previous surveys of the bridge before tolls were removed. Interestingly residents of Lochalsh indicate the greatest impact in terms of access to work. These findings reflect the increased trip dispersion as a result of the building of the bridge.
- E.44 There is a clear increase in the perception the of the bridge as an asset since the toll removal – supporting the hypothesis identified in the original baseline study that the bridge will be increasingly valued by residents over time.

F Appendix F – The Transport Sector

Couriers and haulage firms

- F.1 Detailed interviews were undertaken with five haulage companies who regularly used the Skye bridge:
- Skye Express: Inverness based haulier (with Skye depot only) – focused on Inverness to Skye Market and sub-contracting work from larger couriers (e.g. TNT)
 - Highland Haulage: Inverness based haulier delivering to all Highlands and Islands.
 - AJG Inverness: Inverness based haulier delivering to all Highlands and Islands:
 - TNT (Inverness): Inverness branch of UK-wide haulier / courier company. Expanding own operation (rather than sub-contracting) into Skye.
 - Skye Transport - Skye based haulier (predominantly heavy haulage) with links to Skye Express.
- F.2 Fuel costs, and recent significant increase in prices have had a much greater impact on costs than the tolls. Overall, tolls were perceived as a minor cost in relation to fuel, staff, maintenance etc. The possible exception to this is in the heavy haulage sector.
- F.3 Courier services are growing. Overall hauliers report a significant increase in e- and telephone direct business to customer commerce, requiring delivery to households. In addition, one haulier indicated that 25% of business now comes directly from residents on Skye, many of whom are now (since the tolls were removed) buying more and larger goods in Inverness and requiring transport to return them to the Island. The majority of all work for the non national hauliers (i.e. Skye Transport, AJG, Skye Express) is via subcontracting for national companies.

Skye Express

- F.4 Skye Express is an Inverness based haulier (with a Portree depot). They focus on the Inverness to Skye Market and began operating in 1993. They grew after the introduction of the Skye Bridge.
- F.5 Despite the availability of the 23 hour ferry prior to this, the bridge made it practical to start to introduce a daily service. The first main contract for the company after this point was through hospital deliveries, securicor contracts, and motors spares deliveries. Previously companies (e.g. Ford) had sent one of their own vehicles per week to Skye, but the opening of bridge meant that they could transfer work to Skye Express's daily service.
- F.6 The company now has a turnover of £950k per year with fuel bills of £3k per week.

- F.7 The removal of the tolls saved approximately £250 per week but the company indicate that this saving has not covered greater increases in fuel prices¹². They have however been able to avoid raising prices.
- F.8 The company indicate that they carry parcels and pallets (as subcontractor) for all the National pallet and parcel networks – excluding DHL and Citylink (taken by AJG parcels) – accounting for what he believed to be 90% of all parcels and pallets to Skye. Approximately 25% of business is via individual Skye residents paying directly for personal purchases bought / ordered from Inverness.
- F.9 The trade of deliveries taken from Skye is minimal, and the return capacity to Inverness is hardly ever filled (e.g. “usually just empty beer barrels and a small number of packages”). Any deliveries that are taken by Skye Express directly are sub-contracted to other couriers.
- F.10 The company have competitors, but indicate that they have a good working relationship, and share business with:
- AJG (who operate the two national contracts they don’t have, and are Highland wide)
 - Skye Transport (who undertake more heavy haulage / timber etc.)
- F.11 The company considers that it is competitively placed to continue to grow despite increased competition.

Highland Haulage

- F.12 Highland Haulage are an Inverness based haulier delivering to all Highlands and Islands. They are linked to sister company HH Distribution who have based in Inverness and Glasgow and operate Scotland wide.
- F.13 Although making small savings as a result of the removal of the tolls, the increase in fuel prices has meant that it had not been possible to reduce the costs of transport and haulage to customers.
- F.14 3 years ago the company introduced its own ferry container service (Kyle – Stornoway) to the Western Isles to serve the Western Isles Co-op shops. This was forced upon them as a result of difficulties in accessing slots on CalMac ferries, as these had been reserved by other hauliers well in advance. The ferry has since ceased to operate as a result of contract loss. The company noted that freight to the Western Isles in the future would use the Ullapool-Stornoway service since the majority of the freight requirements are in Lewis.

TNT

- F.15 TNT are a national courier company with a local office in Inverness. As a result of the toll removal, the Inverness branch have pushed successfully to move Skye services to their local vehicles.

¹² AA fuel prices (http://www.theaa.com/motoring_advice/fuel/index.html) indicate that between Jan 2005 and May 2006, diesel has increased from 85p/l to 100p/l (an increase in costs to Skye Express of £450 per week)

- F.16 They have opened up their own (non subcontracted) routes to Skye based out of Inverness as a result of free tolls (there will, however not be a Skye office). TNT Inverness do not expect this to impact on the local market significantly and they do not expect to make profit on these trips. The move is part of customer service commitments to complete wider national networks. The change will reduce the work for local subcontractors such as Skye Express.
- F.17 The removal of the use of sub-contractors means that Skye customers will now be able to receive the TNT next day service into Skye and 2 day service out of Skye.
- F.18 Customers will benefit from lower costs from this move since Skye residents and businesses will no longer be charged a surcharge to deliver to the area (as a result of the removal of sub-contractors). This may also open up competitive options for buying from non-Inverness retailers / vendors.

AJG Parcels

- F.19 AJG Parcels are an Inverness based courier service delivering to all of the Highlands and Islands. They operate 2-3 vehicles (vans) per day to Skye – which are based in a Kyle depot. The company has felt no impact on business from the Skye Bridge toll removal. AJG indicated that this constituted approx. £1-2K per year compared to a £4.5m turnover (costs were £4-£5 per van trip). In addition fuel prices have increased, which counter any minor savings.
- F.20 One company for whom AJG sub-contract asked for discount as a result of the removal of the tolls. Given the volume of this contract, AJG calculated that this would have effectively been about 50p per load (when split between all contractors). As a result of this the client did not bother to pursue this issue.
- F.21 AJG have had a large increase in business (across the whole of their area) due to home deliveries for mail order / web order etc., and any that impact from the bridge compared to this massive increase is negligible.
- F.22 The major impact in terms of deliveries to Skye was the introduction of the bridge over the ferry crossing, which drastically reduced delivery times – particularly in the summer.

Skye Transport

- F.23 Skye Transport (predominantly heavy haulage) indicated that they have been negatively affected by the opening up of markets to other hauliers¹³. Large HGVs paid high tolls (approx 3 times that of an LGV) and therefore the opening up the heavy haulage market and associated businesses may have been more significant than that for

¹³ They have also sought compensation from the Scottish Executive over the a refund for the toll fees paid. The organisation have not responded to requests for follow up interviews to further explore these issues.

smaller scale hauliers. It is interesting to note that Forest Enterprise indicated that removing the tolls saved them £1.60 per ton and as a result they are now able to export low quality wood to places such as Finland and Wales – without toll removal they indicated this would not be possible.

Coach Tour Companies

- F.24 Three coach tour operators were contacted to explore the impact of the toll removal on their activities:
- Rabbies Tours (Edinburgh based Scottish Highland Tours)
 - SPA Coaches (Inverness)
 - Shearings (National coach tour company)
- F.25 Rabbies have found that there has been an increase of 17% of passengers travelling to Skye on coach tours since 2004. The toll removal meant that they had been able to freeze, rather than increase prices on these trips which may have made them more competitive.
- F.26 The lack of suitable accommodation on Skye was cited as a problem by both Shearings and Rabbies, as a barrier to increasing coach trips to Skye. This may be related to their desire to use large hotel chains with which they have agreements.
- F.27 SPA coaches from Inverness stated that they no longer carry out general coach tours to Skye but now do specific private hire trips. They found that the Skye Bridge toll did not affect them as a company because they charged groups for the toll separately to the coach fare and therefore when the toll was removed it made no difference to their profits. However they thought that there has been an increase in passengers travelling by coach to Skye since the bridge tolls were removed.

G Appendix G – House Purchase and Land Development

Surveys

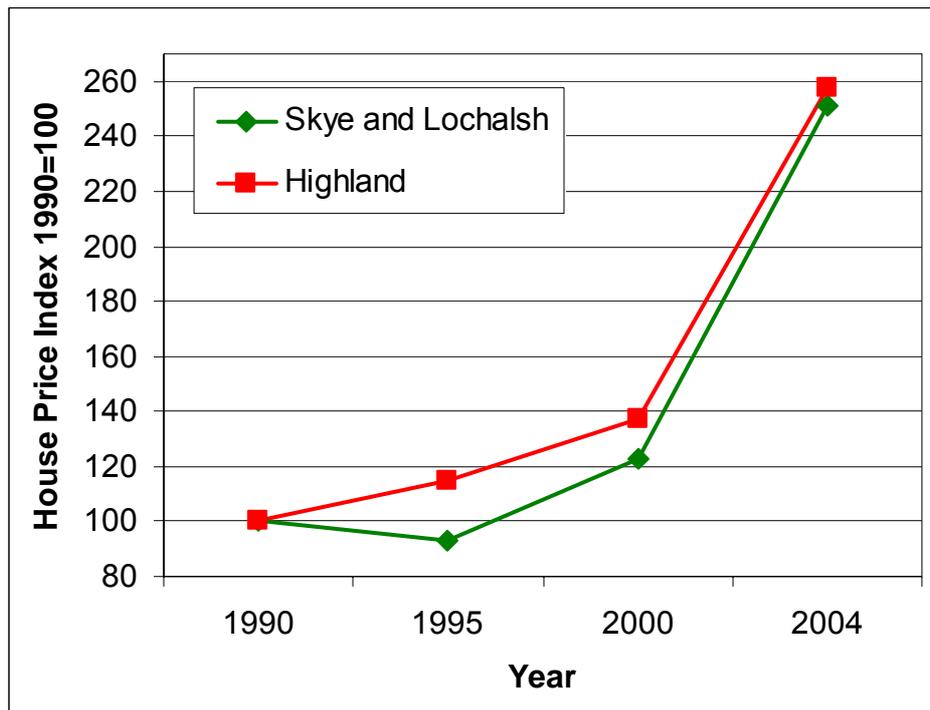
- G.1 Five estate agencies were surveyed:
- Isle of Skye Estate Agency: Kyle and Portree based agency
 - Skye Properties: Portree based agency
 - Skye Property Centre: Portree based agency
 - Mackinnon Hathway: Kyle based agency
 - Remax: Broadford based agency
- G.2 All estate agencies reported that 75-90% of residential business is from 'incomers' and that this has been constant for a number of years. General trends in sales are perceived to be strongly related to buoyancy of housing market nationally (in particular as a result of the high proportion of incomers)
- G.3 There has been an increase in interest in properties in the Western Isles (where values are 50% less), as a result of the recent increase in prices on Skye. Land values have been increasing on Skye since the 24 hour ferries to Skye were introduced.
- G.4 Substantial increases in sales, properties and viewings were identified by agents in 2002 – 2005, although this has subsequently slowed down. This coincides with increases in the house price index in Highland as a whole, and therefore cannot be directly related to the crossing changes.

House prices and migration

- G.5 Highland Council SASINES data is based on registrations of house sales. The dataset can also be used to give an indication of trends in migration by comparing where people moved. Alternative data sources, such as doctor registrations, may be more reliable, since these will include a greater proportion of the population (not just home owners). However, these were not available.
- G.6 Skye/Lochalsh was the most expensive area of Highland in 1990 and 2004, however, the trend dips below average between these dates¹⁴.

¹⁴ DTZ (1999, p.91) indicated that between 1995 and 1998 house prices were following national rather than local trends.

Figure G1: House Price Trends



- G.7 Between 1990 and 2004, 30% of buyers in Skye/Lochalsh came from outside Scotland. In Highland just 11% came from outside Scotland. The north-west of Skye has the greatest proportion of “non-Scottish” migrants. Skye appears therefore to be particularly attractive to ‘incomers’ but it is impossible to ascertain if this is predominantly as a result of the introduction of the bridge.
- G.8 The number of house sales in Skye/Lochalsh almost doubled 1992-1995 - the period immediately after the ‘go-ahead’ for the building of the bridge was confirmed. This suggests that the bridge may have had an immediate effect on prices, although other factors may have played a part. Figures are not available for the period post toll removal.
- G.9 The 1998 Skye and Lochalsh household survey (DTZ, 1999, p.91) identified that that there had been an increase in the number of people from the mainland viewing properties on Skye since the building of the bridge, potentially reinforcing the impact of the bridge on the house sales and prices, but again this change this may be due to other factors.
- G.10 Despite these possible direct impacts, the effects of the bridge on population and property prices in Skye cannot be confirmed, as other factors may be more significant. This conclusion was also reached in the 2002 TRI evaluation of the bridge (TRI, 2002).

H Appendix H - Surveys of Public Agencies

H.1 Public agencies are large employers in remote areas and their responses to transport changes can be very significant. The agencies surveyed comprised:

- Highland Council Education Department
- Highland Council Social Services Department
- Highland Council Leisure Services
- Fire Services
- JobcentrePlus
- Police
- NHS: Assistant General Manager Skye and Lochalsh Hospitals
- Scottish Ambulance Service: Skye and Lochalsh

H.2 In general respondents indicated few key issues or changes in service delivery relating to the removal of the bridge tolls. However notable factors were:

- Health and Social Services noted significant savings from the toll removal but commented that these savings would be absorbed by the wider service budgets.
- The removal of the tolls has made it easier for the NHS to manage public opinion when they centralise services (e.g. out of hours centre in Broadford), but these changes would have occurred regardless of the tolls.
- The hospital in Broadford has noted an increase in applications for ancillary positions from residents in Lochalsh post toll removal – however no figures could be provided.
- The removal of the cameras at the tolls booths has taken away a security / policing asset that had been used on occasions to track vehicles.

Health Services

H.3 Health services in the Skye and Lochalsh are managed from Broadford Hospital. In general, the removal of the tolls was perceived to have had a 'good' impact on health service operations in the area. Immediate savings were made on transport costs as a result of the removal of the bridge tolls. These related to toll tickets for the following services / trip purposes:

- Ancillary staff
- Internal mail
- Community / district nursing trips
- Allied health professionals etc.

- H.4 The budgets to pay for all of these services were held locally and managed within the Broadford site. No immediate figures were available on cost savings. However, the cost of staff tickets (e.g. individual staff trips for nurses etc) would amount to approx. £10k per annum. This however did not include other trips made by other vehicles for document and equipment transfer etc.
- H.5 In addition savings would also have been made from the hospital travel costs scheme budget – but no figures were available. (The representative did indicate that she would put a request into her finance section to explore if any figures could be obtained for the study)
- H.6 There have been no direct impacts on service provision as a result of these savings. Any savings have simply been absorbed into the general budget.
- H.7 In addition, although no direct changes to site locations and delivery of services were reported as a result of the removal of the tolls and the crossing enhancements, the respondent indicated that the changes have made the development/ changes to delivery of services easier to manage and opened up different ‘opportunities’. For example:
- The health centre in Kyle is being ‘revamped’, with the dental care unit moving from Broadford to Kyle. The lack of tolls on the bridge meant that this change was viewed as having limited impact on transport costs / access top the new site.
 - The out of hours service was set up in Broadford at the time the tolls were removed. This process had to happen – and was always going to be a this site, but the lack of tolls meant that those on the mainland did not have to pay tolls to access the site and therefore there was no resistance to the location.
 - It was suggested that applications for ancillary staff positions in the Broadford hospital were now being received from the mainland (no figures could be given). The lack of tolls was thought to be the reason for this – i.e. commuting to work over the bridge was now a realistic financial option.
- H.8 In general, however, the change from the ferry to the bridge was perceived to have the most significant impact on the health service provision because it removed almost all delays to accessing the mainland.

Education Services

- H.9 The Skye and Lochalsh Area Education Manager (Andy Petrie, based in Portree) was contacted to explore if there had been any impacts of the bridge changes.
- H.10 In general the removal of the tolls was described as having no noticeable impact on the provision of their services, catchment areas, transport or locations of sites.

- H.11 After the bridge was build the catchment areas in the south of Skye changed so that pupils could attend the Plockton School (via the bridge). However, this is now being changed back to the original position of all Skye residents having to attend the school in Portree. This is due to a requirement to reduce costs and excess capacity being present on transport currently travelling form South Skye to Portree.
- H.12 There has been no noticeable change in the demand for travel to education, and therefore no major shift in the residential location of pupils in recent years.
- H.13 There was some perception that schools had difficulty in receiving supplies (as Skye was still viewed as an island) but no details could be obtained.

Social Work Services

- H.14 Skye and Lochalsh Social Work Dept (Portree) indicated that they would have received some savings as a result of the toll removal, but there was no impact on how services were delivered or on any cost savings.
- H.15 Their budget is approx £2m, and they deliver services “based on need, and that this takes priority over additional costs”. They keep no detailed records on how much was being spent on the Skye Bridge by their staff and would not expect any saving to make any impact on their delivery of services.

Police

- H.16 There are 5 police offices / stations in the area (Portree, Kyle, Broadford, Dunvegan, and Uig), with approx 15 staff spread across the area. Police operations had seen very little change as a result of the removal of the tolls. Any increase in traffic has not resulted in extra work for the officers, or any options to relocate staff etc.
- H.17 The key saving has been in a lack of requirement to attend the Skye bridge to deal with people refusing to pay for the tolls. This was not an infrequent occurrence, and clearly cost staff time although how often this occurred could not be detailed by the respondent.
- H.18 The removal of the cameras at the tolls booths has taken away a security / policing asset that had been used on occasions to track vehicles.

Leisure Services in Kyle

- H.19 The assistant manager at the Kyle community leisure centre did not report any increase in customers in the last two years (based on monthly figures). The site has been continually expanded and developed since 1992, but there have been no significant trends that could be directly inked to the crossing developments.
- H.20 The representative indicated that there have been no comparable services in South Skye, and the site has always had people travelling over from the Island to use services.

JobcentrePlus

- H.21 Jobcentreplus indicated no direct correlations with unemployment rates and vacancies as a result of the changes to the crossing. The toll removal came at a the time of a general upsurge in vacancies and these were following national trends.
- H.22 There are always some tourism related vacancies in the summer, but that the increase in building trade in recent years has meant that there are now more winter jobs in this sector.

I Appendix I - Demographic and Economic Data

Skye and Lochalsh

- I.1 The main local administrative area is Skye and Lochalsh. This includes the islands of Skye and Raasay, plus the mainland around Kyle of Lochalsh and Plockton. This is the primary catchment for local journeys crossing the bridge, and the area in which the impact of the bridge is most likely to have been felt.
- I.2 Comparisons have been made with larger administrative areas, all of which include Skye and Lochalsh:
- Highland – the Highland Council area.
 - HIE – Highlands and Islands Enterprise area, which contains Highland, the three island councils, the Moray and Argyll.
 - Scotland.
- I.3 The 2001 census recorded Skye and Lochalsh's population as 12 thousand people. The relatively small total size of the population means that considerable caution is needed when analysing changes within it – relatively dramatic changes can be caused by relatively few people. Key other factors are as follows:
- The area is characterised by a below average young adult population. Only 13% are aged 16-29, compared to 15% in Highland and 18% in Scotland.
 - Car ownership is above average – 78% of households own at least one car (Highland 75%, Scotland 66%).
 - Half the workforce is in skilled or managerial roles (compared to only 41% in Scotland). Unskilled and senior managerial extremes are under-represented.
 - Two thirds of housing is privately owned (above Scottish average) with small social sector (only 19% of households).
 - Home working is above average, with 9% of those in work working from home (6% Highland, 4% Scotland).

Population Trends

- I.4 Highland Council makes a mid-year estimate of population. This provides a more detailed assessment of changes in between 10-yearly census. Any changes in population resulting from the bridge and toll regime changes are likely to be longer term and as a result the effects may not be noticeable at this stage.

Figure I.1: Population, 1981 Base

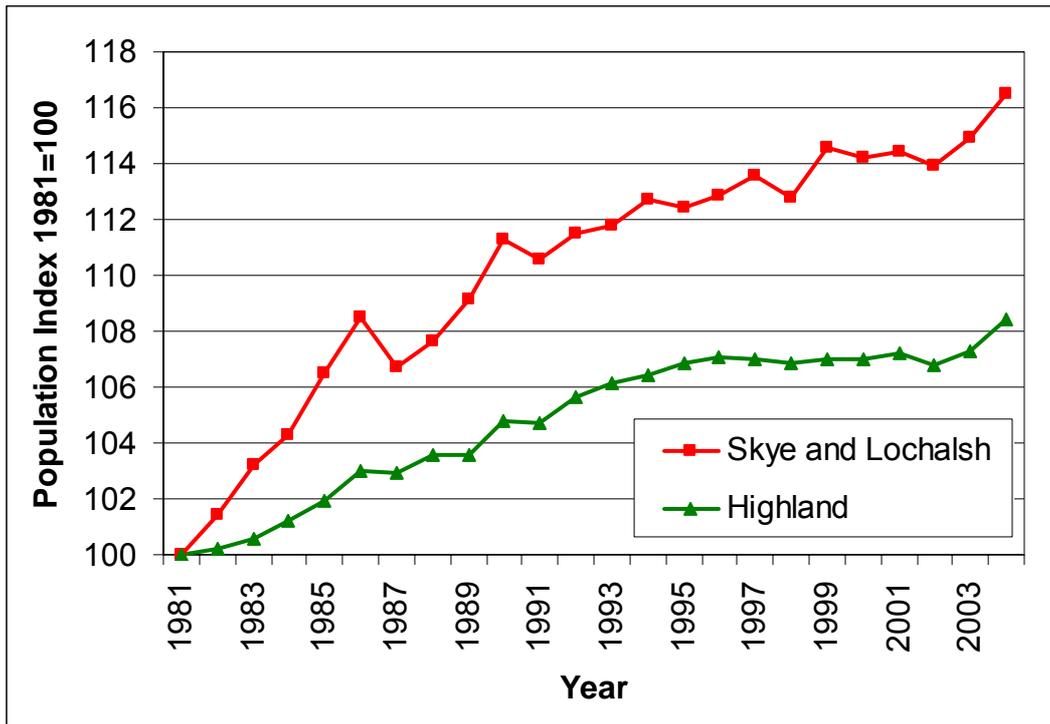
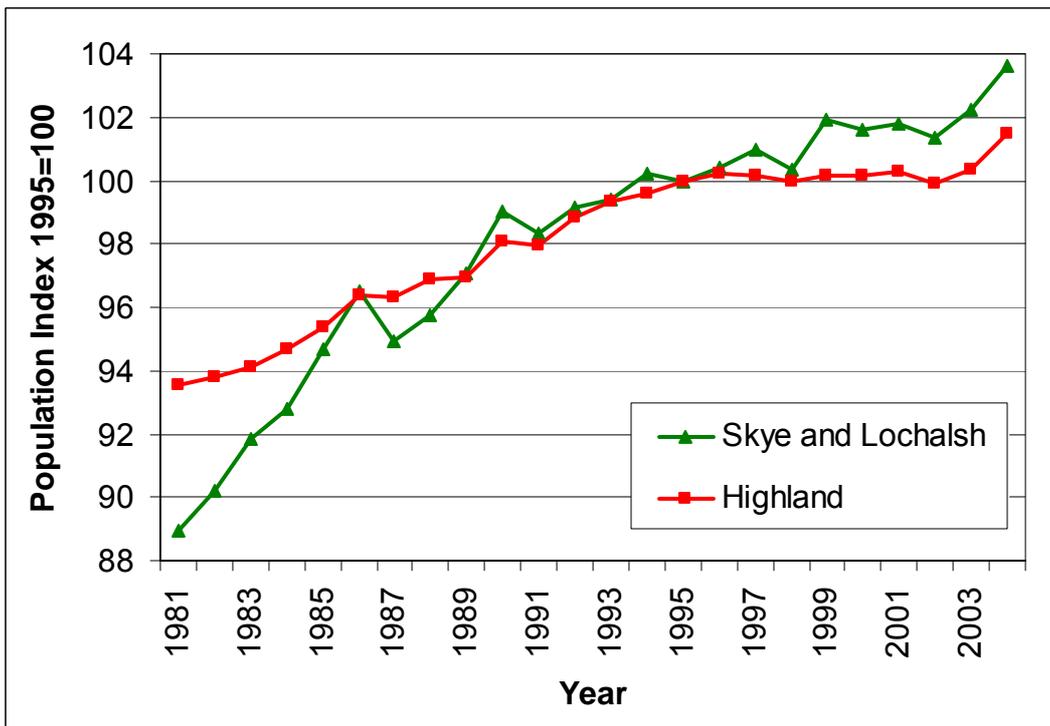


Figure I.2: Population, 1995 Base

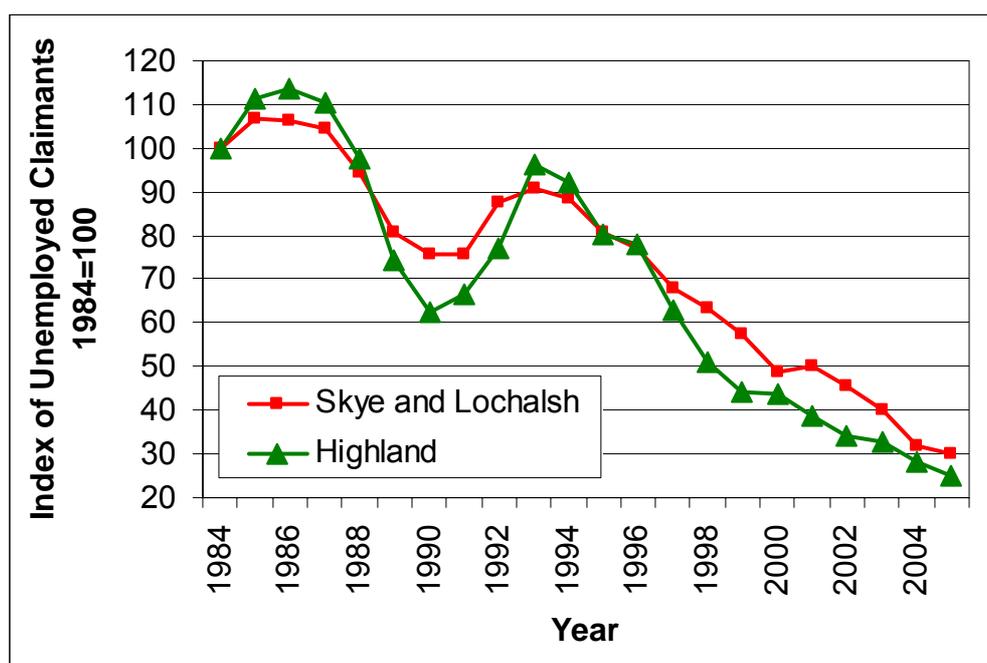


I.5 Between 1991 and 2001, the population of Skye and Lochalsh grew by 3.3%. This compares to a reduction of 10.5% in the Western Isles, and a reduction of 0.4% overall in Scotland.

Employment

- I.6 The Skye and Lochalsh unemployment rate dropped 68% between 1995 and 2005, based on Highland Council analysis. This compares favourably to Scotland (57%) but unfavourably to Highland (71%). However, overall numbers are low – 139 people (1.9% of workforce) in Skye and Lochalsh – and it is therefore difficult to draw any strong conclusions from analysis of these figures as significant changes may be caused by few people.
- I.7 The unemployment claimant count totals for Skye and Lochalsh are available through NOMIS. Trends since 1984 have been plotted for Skye and Lochalsh and Highland in Figure 3.4 below.
- I.8 The Wholesale, Hotels & Restaurants is the largest employer with 26.8% of the total workforce, followed closely by the Public Administration, Education & Health sector.
- I.9 A quarter of all employees work in small firms with less than 5 employees. Less than 15% of the workforce are employed in firms with 100 or more employees.

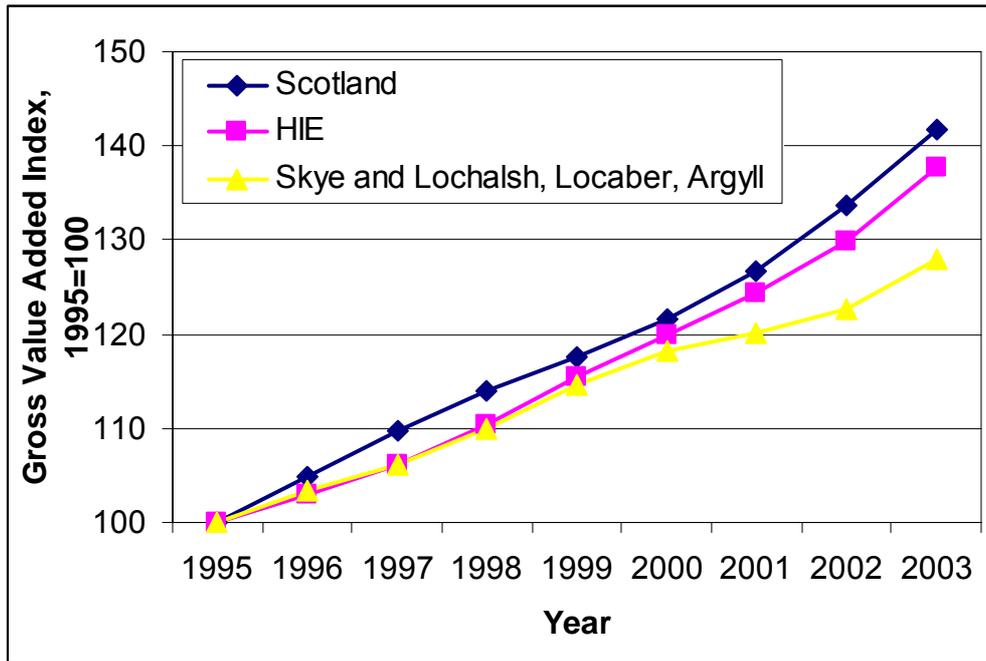
Figure I.3: Unemployment Trends



Growth of Local Economy

- I.10 Figure I.4 is based on Office of National Statistics monitoring, and shows that the Skye and Lochalsh, Lochaber and Argyll has begun to lag behind both the rest of Scotland and the Highlands and Islands Enterprise area since 2001 in terms of GVA. This is likely to be due to a decline in growth in Lochaber and Argyll.
- I.11 Nevertheless, GVA in Skye and Lochalsh is now slightly over £100 million per year.

Figure I4 - Gross Value Added Trends



J Visitor Survey Analysis

J.1 Visitor surveys were undertaken throughout summer 2006 as shown in Table J1. Unfortunately data from previous years was limited to the information in the published reports and has been supplemented with other tourist figures from Visit Scotland and HIE to allow trends to be reviewed.

Table J1 - Summer 2006 Visitor Surveys

Location	Number of Surveys	Date
Aros Centre, Portree	88	29 May, 15 Jun, 29 Jun
Clandonald Centre, Armadale	40	26-27 July
Dunvegan Castle	83	21 Jun, 30 Jun, 9 Aug
Broadford Town Centre	37	9 Jun, 29 Jul, 30 Jul
Mallaig	30	20 July
Eilean Donan Castle	50	30 May, 7 Aug
Kyle Of Lochalsh	41	9 Aug
TOTAL	369	

Use of the Bridge by Visitors

J.2 Visitors were asked which routes they had used to enter and leave the island. Two thirds of visitors enter and leave the island by the bridge with another 25% using the circular 'tourist route' including the bridge and the Mallaig ferry. Use of other routes is very minor.

Table J2 - Routes Taken to and from Skye by Crossing

	Skye Bridge	Glenelg-Kylerhea	Mallaig-Armadale	Western Isles - Uig
Skye Bridge	66%	1%	10%	1%
Glenelg-Kylerhea	2%			
Mallaig-Armadale	14%	1%	3%	1%
Western Isles-Uig			1%	

(Skye visitors n=242)

J.3 The routes taken to and from Skye have not changed significantly since the removal of the tolls, with the use of the bridge, unsurprisingly, dominating visitor traffic. No data is available to compare these findings with pre bridge levels.

Table J3 - Routes Taken to and from Skye by Crossing (Skye visitors)

	To Skye (2002)	From Skye (2002)	To Skye (2006)	From Skye (2006)
Skye Bridge	84%	82%	78%	82%
Glenelg-Kylerhea	2%	5%	2%	2%
Mallaig-Armadale	12%	11%	18%	14%
Western Isles-Uig	2%	2%	2%	2%

2002 data adapted from HIE Highlands Visitor Survey (George Street Research, 2002, p.27)

J.4 Visitor traffic to Skye has been increasing but has not matched increases in other trip purposes since the bridge was built.

Visitor Origins

- J.5 Tables J4 to J9 compare the results of the new surveys with data from previous years to identify any factors where the characteristics of the tourist market appears to be changing.
- J.6 Table J5 demonstrates that, there continues to be a higher proportion of non-UK visitors to Skye, relative to other parts of the Highlands. It might have been expected that the toll removal would have resulted in an increase in Scotland and UK based tourists who would have been better informed about the transport changes. However, at this general level the impacts of the toll removal cannot be identified.

Table J4 - Origins of Visitors to Skye and Lochalsh

	Skye and Lochalsh 2002 (n=475)	Highlands 2002 (n=3554)	Skye and Lochalsh 2006 (n=369)
<i>Scotland</i>	24%	35%	18%
Highland and Islands	5%	9%	6%
Edinburgh & Lothians	6%	6%	3%
Glasgow and Strathclyde	4%	5%	5%
<i>England</i>	37%	37%	39%
South East	11%	11%	11%
North East	9%	8%	8%
Midlands	6%	7%	7%
North West	5%	5%	8%
<i>Other UK</i>	1%	2%	2%
<i>Total - Overseas</i>	37%	26%	42%
<i>Europe</i>	21%	16%	25%
Germany	7%	6%	8%
<i>Non-Europe</i>	16%	10%	17%
USA	7%	4%	8%
Canada	4%	2%	2%

2002 data taken from HIE Highlands Visitor Survey (George Street Research, 2002)

- J.7 Table J5 shows that Skye and Lochalsh receive a higher number of first time visitors to the area, when compared to the Highlands – and that this has not changed significantly since before the tolls. This is likely to reflect the high number of foreign tourists that visit the area.

Table J5 - New and Repeat Visitors To Skye and Lochalsh

	Skye & Lochalsh 2002	Highlands 2002	Skye & Lochalsh 2006
First Visit	59%	32%	51%
Repeat Visit	41%	68%	49%

- J.8 Table J6 shows that visitors to Skye and Lochalsh includes a greater proportion of younger visitors than elsewhere in the Highlands, and that this has not changed since toll removal.
- J.9 Table J7 shows the types of holidays that were taken for visits to Skye and Lochalsh. It shows no appreciable change in day-trippers since toll removal, and it is noteworthy that Skye is still doing better than the Highlands in terms of long stay holidays. This appears to contradict

perceptions by residents that the removal of the tolls has reduced the number of long stay holidays.

Table J6 - Age & Gender Profile of Visitors to Skye & Lochalsh

Age	Skye & Lochalsh 2002 (n=475)	Highland 2002 (n=3554)	Skye and Lochalsh 2006 (n=369)
15-24	12%	7%	12%
25-34	16%	17%	21%
35-44	20%	21%	20%
45-54	20%	20%	18%
55-64	17%	19%	13%
65+	15%	15%	16%
Gender			
Male	55%	55%	50%
Female	45%	45%	50%

Table J7 - Visitors to Skye & Lochalsh By Holiday Type

Holiday Type	Skye & Lochalsh 2002	Highlands 2002	Skye & Lochalsh 2006
Away from Home on Holiday	90%	80%	90%
Day Trippers	2%	8%	3%
Visiting Friends and Relatives	6%	9%	6%
Business Trips	1%	2%	2%

Table J8 - Accommodation Used

	Skye & Lochalsh 2002	Highlands 2002	Skye & Lochalsh 2006
Hotel	26%	28%	16%
B&B	39%	30%	36%
Self Catering	20%	16%	23%
Tent	11%	8%	4%
Staying With Friends / Relatives	6%	9%	5%
Touring Caravan	2%	4%	5%
Guest House	4%	4%	6%
Hostel / Youth Hostel	14%	7%	6%

Table J9 - Mean Length of Stay (Days)

	Skye & Lochalsh 2002	Highlands 2002	Skye & Lochalsh 2006
In Area Interviewed	3.8	3.8	4.4
In Highlands	7.7	7.4	8.8

J.10 Interestingly, the current survey shows that, of those that are spending nights in the Highlands and the local area, visitors are staying for slightly more nights than in 2002 (see table above). However, as there is a similar increase for nights stay across the whole of the Highlands for 2006, it is unlikely that removal of the tolls is a factor.

Attitudes to the Bridge and Tolls

J.11 In 2005 a national motor caravan magazine did a feature on one of the campsites on Skye suggesting that now the tolls had been removed the island was one of the best places in the UK to visit. The business

surveys also identified that the campsites in the sample were performing very well and had been very busy for some time. It may be that at the budget end of the market the tolls have made a significant impact.

- J.12 To explore this further the visitor surveys sought information on attitudes to Skye as a place to visit. People were asked “if there was still a toll would you be more or less likely to visit Skye”.
- J.13 Table J10 shows that two thirds of respondents thought that it would make no difference and 16% thought that it would be more likely that they would visit. Although the majority of visitors see the toll removal as an advantage, the tourist surveys identified that some people feel that the “island identity” has been lost. Perhaps more significant is that two thirds of respondents do not think it makes any difference.

Table J10 - Impact of Charging Tolls on Likelihood of Visiting Skye

		Did Not / Will Not Visit Skye	More Likely	Less Likely	Don't Know	No Difference
SKYE	Day Trippers			3		4
	Holiday		3	50	6	165
	Visiting Friends and Relatives			1		9
	Business Trips					2
	Other					4
LOCHABER AND LOCHALSH	Day Trippers	1				2
	Holiday	41		4	7	49
	Visiting Friends and Relatives	4			2	5
	Business Trip			1		4
	TOTALS (%)	13%	1%	16%	4%	66%

- J.14 The perceived impact of the bridge on the attractiveness of the area by visitors was explored through questioning in both 1998 and 2006. Table J11 shows that since the removal of the tolls, more visitors perceive the area to be more attractive as a result of the bridge – with 60% indicating the bridge as enhancing the area.

Impact of Skye Bridge on Attractiveness of the Area

	<i>More Attractive</i>	<i>Less Attractive</i>	<i>No Difference</i>	<i>Don't Know</i>
2006 No.	148	26	58	14
2006 %	60%	11%	24%	6%
1998 No.	104	83	187	42
1998 %	25%	20%	45%	10%

1998 data taken from DTZ (1999, p.38)

- J.15 Visitors were also asked if the tolls would have affected the number of nights that they would have stayed on Skye. 80% of visitors indicated that the tolls would have made no difference to the length of stay. However, 14% suggested that tolls might reduce the number of nights stay on the Island.

K Appendix K – The Value of Island Accessibility

An international review of evidence

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- K.1 Our interest is in whether households and businesses attach a value to the manner that a fixed link, the Skye Bridge, alleviates travel constraints (fixed departure times and hours of operation) and reduces uncertainty compared to a ferry. In doing so, we firstly examine the manner that fixed transport schedules and uncertainty impact on individuals' and businesses' decisions before reviewing the evidence available and considering this in context of the Skye Bridge.
- K.2 A day's activities typically comprise a wide range of activities: sleeping, eating, working, watching TV, participating in sport, socialising, tasks associated with the household (e.g. food preparation), work and importantly travel. Travel occurs as activities are dispersed, not only in time, but also in space. Work itself also comprises of a number of different tasks - also dispersed in time and sometimes in space. Life is therefore made up of large number of choices regarding what activities to do, when to do them and where to do them. Personal activity schedules are therefore developed that take account of preferences (doing exercise twice a week, sleeping more than 8 hours, etc.) and constraints (eating at certain times of the day, travel time and cost, etc.). Not only do decisions reflect choices about when, where and which activities to undertake they also reflect uncertainty. At the micro-level individuals might be unsure regarding exact journey times and therefore build a 'time cushion' into their plans. Uncertainty however affects lives at a much broader level than this and individuals' and businesses' decision-making reflects that. Often people and businesses are willing to pay a premium (albeit indirectly through land prices) to guarantee or improve certainty. The certainty (or uncertainty) of employment, of access to suppliers, customers or a workforce and the certainty of access to healthcare are all attributes that affect individuals' and businesses' location decisions. If the activities and decisions a household or business makes are affected by travel constraints, including uncertainty - as is the case for accessing an island by ferry - then we would expect a value to be attached to the alleviation of that constraint.
- K.3 The literature contains a number of different references to the costs / benefits associated with the alleviation of travel constraints: inconvenience costs (Bråthen and Hervik, 1997); schedule delay (Small, 1982) and scheduling costs (Wilson, 1989). Bråthen and Hervik define inconvenience costs to be the willingness to pay (WTP) for full travel flexibility (e.g. 24 hr access and no timetable restrictions). Small defines schedule delay to be the difference between the preferred arrival time and the actual/planned arrival time. Wilson on the other hand uses the term scheduling costs to relate to the general inconvenience of scheduling constraints - whether they arise through travel constraints such as public transport timetables or institutional

constraints such as fixed work start times. Inconvenience costs and schedule delay are therefore particular instances of the more general scheduling costs. As the former was developed in the context of the benefits of fixed links in Norway this definition has the most relevance to the Skye Bridge. Inconvenience costs are additional to travel time costs and out of pocket costs normally included in an economic appraisal.

- K.4 The literature on the value of travel time uncertainty (reliability) generally uses an extension of the Small schedule delay model. Such micro-level uncertainty is however already included in the Norwegian inconvenience cost concept. Uncertainty at a broader level (e.g. closure of ferry/bridge in bad weather or ability to find employment or access emergency healthcare) is more closely aligned to the concepts of reliability premiums and option values. A reliability premium is the value one is willing-to-pay to reduce uncertainty. Option values are the values that households and businesses' are willing-to-pay to have the option of travelling at some point in the future. Both fields have seen little research and that which has been undertaken has typically focussed on rail and bus.
- K.5 Within the UK there is no published evidence on the inconvenience costs of ferries compared to fixed links. Of the published evidence available that which is most applicable to the Skye Bridge and other fixed links is associated with changes in headway (the time intervals between public transport services). If we consider a 24 hour ferry – as the Kyle of Lochalsh ferry was immediately prior to the construction of the bridge – headway would form the only component of the inconvenience costs. It is therefore worth summarising the UK evidence on headway. Probably the most comprehensive study undertaken in the UK was by Wardman (2001). Wardman in a meta-analysis of 143 British studies identified values for a 1 minute change in headway of between 0.2 minutes of travel time to 0.88 minutes for car drivers¹⁵ - depending on journey length and trip purpose with the lower values being associated with low frequency, long distance services being travelled on in non-working time. Values of headway implicitly include waiting time as well as inconvenience costs, which is why for high frequency short distance services the value of headway approaches that of in-vehicle-time.
- K.6 A review of the studies for three large Danish fixed links (FTC, 1998; Daly et al., 1998; and COWI et al, unknown) two of which have already been constructed and one of which is still in the planning stage, was also undertaken. The crossings link the large Danish island Sjælland, containing Copenhagen the national capital, to the West of Denmark via the Great Belt Bridge (opened in 1998), to Sweden via Øresund

¹⁵ Thus the inconvenience costs of replacing an hourly service with a continuous service (e.g. a fixed link) would have a value similar to a time saving of between 12 minutes and 53 minutes (depending on journey distance and trip purpose). This includes the cost of waiting for the ferry.

Bridge (opened in 2000) and to Germany via a proposed bridge or tunnel over the Fehmarn Belt. Whilst such crossings are of a very different scale to the Skye Bridge they would not be too dissimilar (in an engineering sense) to fixed links from the Scottish mainland to the Western Isles or to Orkney. In a similar manner to the Skye Bridge immediately prior to its opening, the ferry services that the Danish fixed links replace are frequent and operate throughout the day. Once again therefore the headway between ferries represents the only travel constraint. The implied values for headway (and inconvenience costs of ferries) from these studies are similar to the values at the lower end of the range found by Wardman. Bearing in mind the long distance travel market served by the Danish fixed links these results are remarkably similar to Wardman's, despite Wardman's work being based on non-ferry public transport services. This would suggest that, subject to an appropriate degree of care, Wardman's work could be transferred to a ferry/fixed link application.

- K.7 A review of appraisal practice in the four Scandinavian countries identified that, with the exception of Norway, no country explicitly includes the inconvenience costs associated with ferry travel (beyond travel time and out of pocket costs) in its appraisal of fixed links. The Norwegian appraisal guidance is based on ex-post research (Bråthen and Hervik, 1997) undertaken in the late 1990s on five fixed link crossings on the Norwegian west coast. The ferry services that were replaced by the fixed links were all frequent (more than 2 an hour in the peak) and had long hours of operation (from 5.30am to midnight). In this instance the inconvenience costs reflect both changes in headway and the benefits of increased hours of operation. Bråthen and Hervik's research identified that inconvenience costs ranged from US\$5.2 per car to -US\$1.3 and that inconvenience costs can increase the economic benefits of a fixed link by up to 60%. However, this is scheme dependent and Bråthen and Hervik found that, for some schemes, benefits only increased by 19% and for the scheme where inconvenience costs were negative benefits were deflated by 25%. This negative value arose as the sub-sea tunnel that replaced the very frequent and convenient ferry, at one crossing, gave rise to a negative travel experience due to the steep gradients involved as well as a lot of extra travel distance. The range in the contribution of inconvenience costs to total economic benefits is clearly project dependent. The higher values are associated with situations in which ferry times are restrictive and/or there are many opportunities for socialising, working or business activity on either side of the crossing. Clearly this is the case for several of the links case studied by Brathen and Hervik as they linked outlying islands (e.g. Askøy) directly to a city centre (Bergen).
- K.8 Bråthen and Hervik's research clearly identifies that inconvenience costs can be significant but also, interestingly, that a poorly designed fixed link may be worse than a good ferry service. On the basis of this research Norwegian appraisal practice was updated in 2004 to include the values of the inconvenience costs of ferries at estuarial (fjord)

crossings and crossings to islands. For this report these inconvenience cost values have been converted to identify the time saving necessary to give the same benefit and the monetary value that an appraisal in the UK would then place on such a benefit (see Table K.1). Bearing in mind the Norwegian ferry crossings studied had long hours of operation, thus the values for the inconvenience costs are driven by extending to night-time operations and reductions in headway, we can see that:

- Inconvenience costs are quite substantial elements of the benefit of fixed links and should be included in an appraisal of the links;
- The contribution of inconvenience costs to total economic benefits will vary with each project and may even be negative for poorly designed fixed links.
- HGVs benefit the most from the fixed links (in equivalent minutes of time saving) and car business traffic the least. In part this is attributed to the fact that freight movements often occur over-night, whilst business traffic very rarely occurs at night. Non-work trips lie somewhere between the two.

Table K.1: Norwegian inconvenience costs of ferries compared to fixed links (converted to equivalent minutes of time saving and GBP)

Ferry type		Vehicle type and journey purpose			
		Car		HGV	
		Work trips	Non-work trips		
Ferry links direct to town/city centre (i.e. within walking distance of CBD)	Inconvenience cost equivalence in time savings (mins)	2.2	4.4	15.6	
	Value (2002 prices)	£0.96	£0.33	£2.65	
Other ferry links	Inconvenience cost equivalence in time savings (mins)	6.9	13.8	18.8	
	Value (2002 prices)	£3.03	£1.05	£3.18	
High dependency/ low frequency ferry links	Inconvenience cost equivalence in time savings (mins)	10.3	20.6	28.1	
	Value (2002 prices)	£4.54	£1.57	£4.77	

Adapted from Bråthen and Lyche (2004)

K.9 Research being undertaken at the University of Leeds, case studying the fixed link crossings in the Western Isles, supports the view that inconvenience costs of short ferry operating hours is substantial. The preliminary unpublished results from this research also appear to indicate that a fixed link offers little to no additional value (aside from

time savings) to residents of an island above and beyond what would be offered by a very high quality ferry service (e.g. a 24 hr ferry operating at a half hourly frequency). The implication of this is that there is no evidence of a reliability premium or option value associated with a fixed link per se. This does not mean however that non-use values for different hours of operation are zero, the implication is that there is no or little difference between the option value or reliability premium associated with a fixed link or ferry (providing they have the same hours of operation).

- K.10 The Leeds research, however, has focussed exclusively on island residents – businesses and tourists may have different attitudes to ferries and fixed links. Bråthen (2001) interviewed 100 firms in Norway with follow-up in depth interviews with four of them. 10% of the firms interviewed reported a perceived improvement in business operation as a result of the fixed link particularly in terms of contact with suppliers and customers. The in depth interviews however identified that whilst the fixed links were perceived as a benefit “essentially the competitive environment, suppliers and customers [of firms] turned out to be mainly unchanged”. Increased flexibility in serving a customer base and importantly reduced uncertainty in long term prospects – through access to markets and increased size of labour market - were cited by the businesses as benefits. An ex-ante study on the island of Unst in the Shetland Islands also identified that businesses perceived fixed links to reduce uncertainty. Thus it may be that businesses perceive fixed links very differently from island residents and may well attribute ‘non-use’ values to fixed links as a means of reducing long term planning uncertainty.
- K.11 In addition to the welfare benefits of being able to access activities and services at more convenient times - which can significantly improve the quality of life of residents as discussed above - the replacement of ferry services with a toll-free crossing can have significant financial impacts on a household. Reductions in travel costs, access to new employment, access to cheaper supermarkets, access to cheaper services can all increase the household’s disposable income. For example, SQW (2004) estimated that the average household on the Isle of Scalpay in the Western Isles was better off by £828 per year whilst on Berneray it was better off by £408. Quality of life and financial gains associated with the fixed links clearly make the islands more attractive places to live and, at the time of the SQW study, the population decline had appeared to have slowed. It is too early to tell whether the decline will be reversed, but evidence from the Isle of Vatersay – also in the Western Isles – suggests that such a reversal can occur. The Vatersay causeway (opened in 1991) increased Vatersay residents participation in the Barra labour market (more than 2/3rds of working adults living on Vatersay now work on Barra) and the population of Vatersay has increased from 65 in 1988 to 92 at the 2001 census (Laird et al., 2004).

- K.12 Improved accessibility does not always result in such positive population impacts. Roads allow traffic in two directions and as a consequence accessibility improvements may result in centrally located businesses serving the periphery to the detriment of local businesses and secondly may allow the local population to move away from the locality but still be able to easily access the region for visits to friends and family. The latter effect – the de-populating effect of new roads – was observed in the Appalachian mountains in the USA when new roads were built to the mountain communities in the 1960s and 70s. “The aim of the [Appalachian] policy was to attract inward investment, thus helping to reduce poverty and halt population decline. In reality the highways had the opposite effect, opening up opportunities for people to leave and take up employment elsewhere, in the knowledge that they could return to their homeland for short visits. From businesses' point of view it opened up access to a new source of relatively inexpensive labour without the need to physically locate there. It also allowed outside firms to compete for the local consumer and industrial markets more effectively, leading to local job losses” (McQuaid et al., 2004, p68). Mitchell (2004, p220) alludes to a similar effect on some communities in the west of Norway when he reports one of his interviewees saying “We have a joke that says, when the roads come, the trucks come too and take the people to the town”.
- K.13 Drawing this UK and international evidence together and transferring it to the context of the Skye Bridge we would expect that the inconvenience of the ferry and the cost of the toll to impose a significant welfare cost on society which would be felt particularly keenly by the residents and businesses on the Isle of Skye. Evidence from Norway suggests that inconvenience costs may increase the economic costs associated with travelling by up to 60% compared to time costs alone. However, the evidence also suggests that a poorly designed fixed link may also impose inconvenience costs on travellers – a good design is therefore essential. Whilst businesses and residents benefit from improved accessibility the international evidence indicates that the impact of transport infrastructure on the spatial pattern of population and economic activity will vary from case to case – it can lead to a centralisation of activity and population in the core or it may strengthen the periphery. Primarily the periphery is strengthened through cost reductions for businesses that either have a good product or are exploiting a resource specific to the locality (e.g. primary sector industries). As yet limited evidence has been found that these cost reductions can stimulate economic growth to remote communities deriving from the sort of agglomeration economies that we associate with urban areas – probably because “the rather small industrial networks may be below the ‘critical’ mass necessary to be able to benefit from such scale effects” (Bråthen, 2001). Notwithstanding that good infrastructure in peripheral regions can be key to maintaining competitiveness - a view for example expressed by a Norwegian businessman in Mitchell (2004, p226). “The government supports us by providing good infrastructure... But that infrastructure is

the only way for everybody who wants to establish or develop business on the coast of Norway” (Mitchell, 2004, p226).