HITRANS

Investment in Lifeline Rural Roads
Individual Scheme Appraisals – Glenelg to Shiel Bridge
September 2004

Halcrow Group Limited

HITRANS

Investment in Lifeline Rural Roads
Individual Scheme Appraisals – Glenelg to Shiel Bridge
September 2004

Halcrow Group Limited

Halcrow Group Limited
16 Abercomby Place Edinburgh EH3 6LB
Tel +44 (0)131 272 3300 Fax +44 (0)131 272 3301
www.halcrow.com

Halcrow Group Limited
16 Abercomby Place Edinburgh EH3 6LB
Tel +44 (0)131 272 3300 Fax +44 (0)131 272 3301
www.halcrow.com

HITRANS

Investment in Lifeline Rural Roads
Individual Scheme Appraisals – Glenelg to Shiel Bridge

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed

Contents

List of Tables

1 Introduction (Glenelg to Shiel Bridge)

1.1 *Background*

1.1.1 HITRANS, the Highlands and Islands Strategic Transport Partnership, commissioned Halcrow Group Ltd to undertake a study to support the campaign for further investment in lifeline rural roads.

1.1.2 The study was split into two stages. Stage One undertook an extensive consultation process to evaluate the issues surrounding lifeline roads including key problems and constraints facing rural communities. The aim of the second stage was to carry out an economic appraisal of nine designated routes in order to bolster the findings of the initial research such as to make an economic case for sustainable increases in investment in lifeline roads.

1.1.3 This report represents part of the second stage of the project. It presents, in full, the economic assessment carried out on the proposed Glenelg to Shiel Bridge road improvement scheme. It does not seek to encompass all the wider issues involved within the study and does not present the methodology. As such it should be read in conjunction with the main 'Investment in Lifeline Rural Roads: Stage Two Final Report'[1].

1.2 *Report Structure*

1.2.1 **Section 2** presents the contextual background to the scheme. It also assesses the existing road conditions and the proposed scheme enhancements;

1.2.2 **Section 3** presents an assessment of the likely impacts of the scheme;

1.2.3 **Section 4** presents the Transport Economic Efficiently (TEE) analysis;

1.2.4 **Section 5** assess the business survey responses for the Salen to Tobermory route;

1.2.5 **Section 6** presents the Economic Activity Locational Impact (EALI) analysis; and

1.2.6 **Section 7** presents the conclusions.

---

[1] Halcrow (2004)

2 Background (Glenelg to Shiel Bridge)

2.1 *Contextual Background*

2.1.1 The C46 provides the sole access to Glenelg and the surrounding villages that lie on the peninsula to the south of Loch Alsh. The route also continues south of Glenelg providing the only access to Arnisdale. The area is extremely remote with the route from the A87 at Shiel Bridge climbing to a height of 1,100ft prior to descending into Glenelg and onto the port. A ferry service to Skye operates during the summer months. The nearest large settlement is Kyle of Lochalsh, which is some 26 miles from Glenelg. Figure 1 presents a map of the route.

2.1.2 The route is entirely single-track and of a very poor standard leading to a constant requirement to maintain the basic road structure. A former 18th century military road it has failing structures, many of which have already been replaced under previous programmes of improvement.

2.1.3 There is currently an asset replacement programme, however, some structures are still outstanding and remain a problem. The poor accessibility of the area is highlighted as a key restriction to the economic prosperity of the region.

2.2 *Local Economy*

2.2.1 The Scottish Census Results On-Line (SCROL) data (2003) presented in Section 4.4 indicates that the region as a whole has a population of around 2,400 [postcode area IV40]. However this postcode area extends well beyond the surrounding area of the C46. Glenelg itself is estimated to have just 100 residents, whilst nearby Galltair has nearly 150; Shiel Bridge is estimated to have around 90 residents.

2.2.2 Population and economic activity have declined within recent decades due to a loss of employment in crafting, forestry and estate work. There is therefore an identified requirement to stabilise the population in the future to avoid further economic decline.

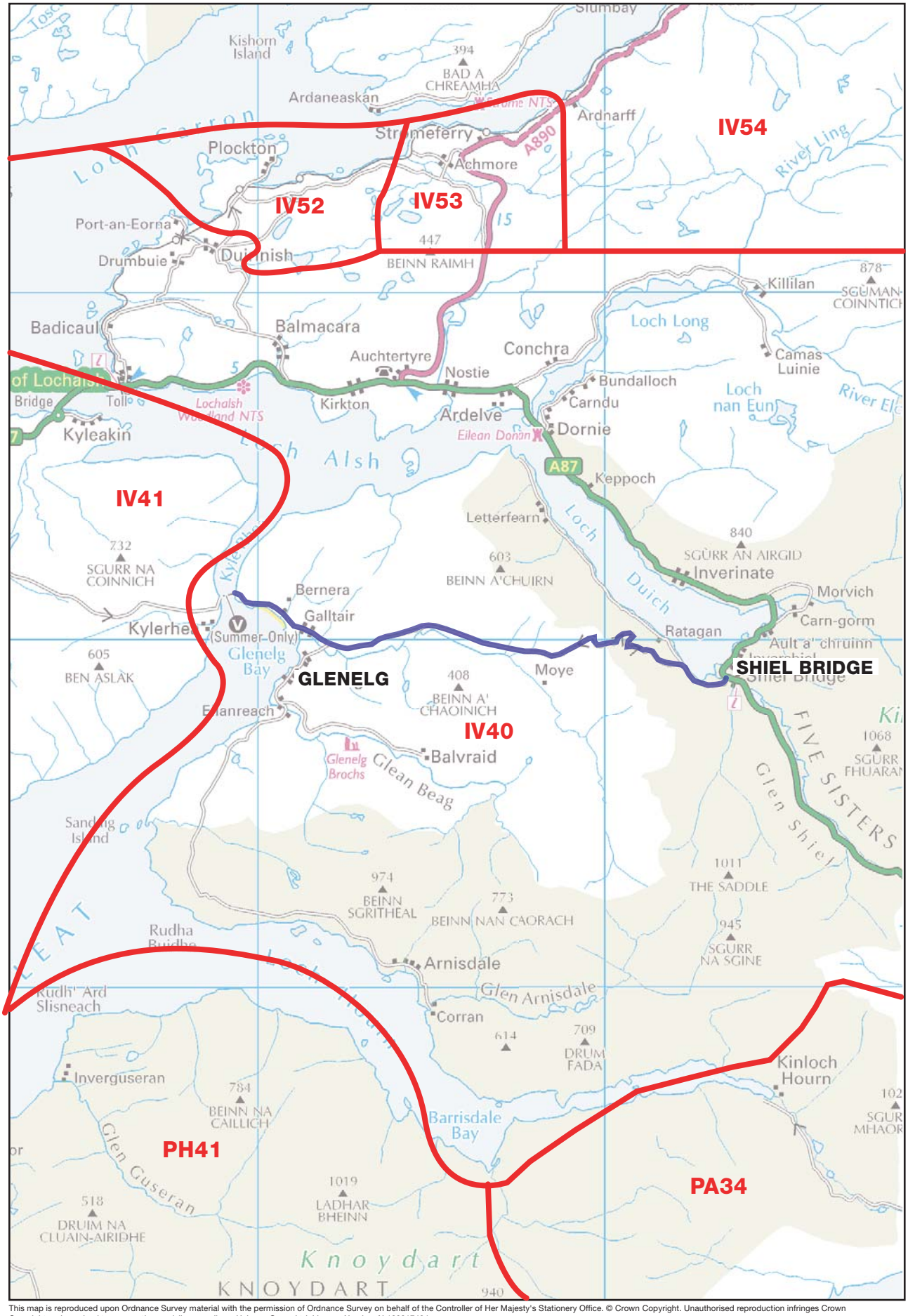


Figure 1 : UNCLASSIFIED GLENELG TO SHIEL BRIDGE

2.2.3 Unemployment levels within the postcode region IV40 are estimated at 5.9%. This compares to the rate for the Scotland as a whole of just under 4% indicating that the area suffers from much lower than average opportunities for employment. Within Glenelg itself however it is estimated that during the winter months unemployment exceeds 8%.

2.2.4 The indices of deprivation, presented in Table 4.3 of the main report, imply that Glenelg is more affluent than Scotland as a whole. However, it is generally recognised that these data can be distorted by the relatively high levels of car ownership that typify communities within the Highlands and Islands of Scotland. The remote nature of the island communities and low levels of public transport services result in private car ownership becoming a necessity. Perhaps critically if the deprivation rating for Glenelg is compared to the average across the Highlands & Islands then it comes out as being significantly worse.

2.2.5 An alternative approach to assess economically and socially disadvantaged parts of the Highlands and Islands is the Fragile Areas definition. A full description of this can be found in Section 4.4.8 of the main report, but in summary, it uses 12 criteria across three categories: geographic, demographic and economic, to assess whether a region can be considered economically and socially disadvantaged. Glenelg is classified as a 'Fragile Area' under this assessment process.

2.2.6 In addition Glenelg is also designated by the Scottish Executive as Initiative at the Edge (IATE)[2] areas. This is a partnership programme which aims to give communities "*the power to identify their needs, required actions and develop projects accordingly*".

2.2.7 The local economy is dominated by four main sectors: tourism, agriculture, forestry and fishing. Between them these sectors account for almost 75% of employment in the area.

2.2.8 Glenelg has a primary school, a village shop/post office and a hotel. In addition there are two seasonal café's. Other community facilities are limited. The nearest medical centre and bank are both in Kyle (26 miles away).

---

[2] Ardnamurchan is an existing (pilot) IATE area. Jura and Glenelg will enter IATE on 1st April 2004. Areas in the Western Isles will also enter the IATA in 2004/05.

2.3 ***Development Plans***

2.3.1 A number of key 'action points' the relate to Glenelg area are set out in the Skye and Lochalsh Area Strategy (2000/06). In summary these are:

- ***Strategic issues*** – the need to strengthen the communities by improving quality of life and community confidence;
- ***Community development*** – address the issues of social exclusion, access to jobs, training and service, community care and affordable housing
- ***Projects and actions*** – provide new infrastructure facilities; and
- ***Community facilities*** – secure funding for community led projects to create new facilities

2.4 ***Existing Road Conditions***

2.4.1 The current route is all single-track with an average carriageway width of only 2.7m. Passing places are provided every 75m, on average. Whilst the route does not have any width or weight restriction orders the practical constraints of the single-track carriageway limit the length of vehicles that can easily use the route. The route suffers from poor lines of sight and is generally in a poor state of repair.

2.4.2 The traffic count data provided by the Highland Council indicates that the average two-way, 24-hour traffic flow across the year is 572 vehicles. It is estimated that a relatively high proportion of these trips will have a final destination in Glenelg. As a proxy therefore 90% of these trips have been estimated to benefit from the full extent of the scheme upgrade. This generates a two-way, 24-hour trips flow for the route of 515 vehicles.

2.5 ***Proposed Improvement Scheme***

2.5.1 The proposed scheme is relatively small in scale with an estimated scheme cost in the region of £0.5M across the 17.1km route. This gives an estimated cost per scheme km of just £29k, however it is likely that the upgrades will be over smaller, more specific, sections of the route.

2.5.2 The scope of the works includes widening sections of the single-track route, in particular around bends in order to help improve lines of sight. Some re-surfacing will be undertaken, along with the provision of additional passing places across the route. Further small-scale works on structures and drainage will be undertaken where required. The works are primarily designed to improve road safety along the route rather than reduce journey times.

3 Assessment of Scheme Impacts (Glenelg to Shiel Bridge)

3.1 ***Impact on Journey Times and Reliability***

3.1.1 Data provided by the Highland Council indicates that average speeds across the entire route are currently around 31km/hr. This is a reflection of the fact that the entire route is single-track.

3.1.2 Given the small-scale nature of the scheme upgrade the Council don't believe that it will noticeably affect journey times along the route. For the purposes of the TEE analysis below it has been assumed that the journey times between Glenelg and Shiel Bridge will reduce by a single minutes. This would translate to a journey time of 32 minutes against the current 33 minutes. This represents a 3% reduction in journey time.

3.1.3 Improvements in journey time reliability are also expected to be minimal given the scale of the upgrades. It is estimated that 'average delay' (as described in Section 3.4.15 of the main report) will fall by 0.4 minutes per trip.

3.1.4 Vehicle operating costs are anticipated to fall as a result of higher average speeds along the route and improved road surface conditions. Fuel costs would fall as a result of the shorter journey times with less requirement to accelerate and decelerate along single track sections. Non-fuel costs would fall as a result of less wear and tear on vehicles through improved road surfacing. Overall vehicle operating costs (as described in Section 3.4.7 of the main report) have been estimated to fall by around 1 pence per existing trip.

3.2 ***Diversionary Impacts***

3.2.1 The C46 from Glenelg to Shiel Bridge is not considered to offer an alternative route to road-based trips between any origin–destination pairs. As such the proposed upgrades to the route is considered unlikely to have any impact on traffic diverting from other roads to take advantage of the reduced journey times and improved reliability on the C46.

3.3 ***Generated Traffic***

3.3.1 Section 3.4.24 of the main report provides details of the methodology undertaken to assess the likely levels of generated traffic. To summarise, within the TEE

analysis a journey time elasticity of -0.2 has been applied i.e. a 10% reduction in journey time will result in a 2% increase in traffic flows through generated trips. This approach has been taken in order to incorporate a measure of generated traffic within the TEE analysis. A wider assessment of the impact of the schemes on economic activity and subsequent traffic generation is undertaken within the EALI analysis.

3.3.2 Applying a –0.2 elasticity to the forecast journey time saving of 3%, along with a base flow of 515 vehicles, gives a forecast traffic generation of 3 trips per day.

3.4 ***Accident Reduction Impacts***

3.4.1 The reported number of accidents along the C46 is relatively low. No fatal accidents have been reported within the last five years, with only two serious and one slight accident (see Table 4.6 of the main report).

3.4.2 Historical evidence tends to indicate that a large proportion of 'damage only' accidents are often not reported. Furthermore, data suggests that 'damage only' accidents make up a high proportion of accidents on single-track roads[3]. It is therefore feasible that a much larger number of slight accidents may have occurred during the period than reported.

3.4.3 None-the-less the level of accident, reported and unreported, is unlikely to be particularly substantial and therefore there is little margin for scheme benefits from accident reduction.

3.4.4 The scheme itself is designed primarily with the objective of improving safety rather than impacting upon route journey times. As such it should have some impact on reducing the potential for accidents, albeit on a relatively small scale.

[3] J.C. Tomlinson & A.M. Ross, "Accidents on Single Track Roads" 1988

Table 3.1: Summary of Scheme and Estimated Impacts (Glenelg – Shiel Bridge)

Description of Scheme Upgrade	Widening of single track around certain bends, limited re-surfacing, additional passing places. Estimated scheme costs = £0.5m Scheme cost per km = £29k	
Impact on Journey Times	It is estimated that journey times along the route could improve by an average of one minute Estimated existing JT = 33 min Estimated post-scheme JT = 32 min	
Diversionary Impacts	**Competing routes** None	**Estimated diversion** Zero
Generated Traffic	Assumed journey time elasticity of –0.2 3% reduction in JT = 0.6% increase in traffic	
Accident Reduction Impact	Low levels of reported accidents Scheme should marginally improve safety levels	

4 Transport Economic Efficiency Analysis (Glenelg to Shiel Bridge)

4.1 ***TEE Analysis***

4.1.1 As described above, the pre and post-scheme average journey time data indicates that significant journey time savings may result from this scheme. The estimated 1-minute journey time saving, along with a reduction in 'average delay' of 0.4 minutes, translates to an existing user benefit of just over 1 pence per vehicle trip plus 14 pence per person trip. With the base volume of vehicle trips at 515 and a vehicle occupancy of 1.41 this gives a central forecast for existing user benefits of £40k per annum.

4.1.2 Section 3.2 above describes the assessment of potential 'diversionary-benefits' deriving from the scheme. It concluded that there was unlikely to be any diversion to the C46 after the scheme upgrade,

4.1.3 Section 3.3 above describes the assessment of potential 'generated-trip' benefits deriving from the scheme. The central forecast of 3 trips per day translates into a generated user benefit of £1k per annum.

Table 4.1: TEE Results (Glenelg – Shiel Bridge)

Base Trip Matrix (vehicle trips/day)	Average Journey Time Savings	Existing User Benefits (£k/yr)	Diversionary Impact (trips/day)	Diversionary User Benefits (£k/yr)	Generated Trips (trips/day)	Generated User Benefits (£k/yr)	Total Users Benefits (£k/yr)
515	1	40	0	0	3	1	**41**

4.1.4 Overall total user benefits are therefore estimated to be in the region of £41k per year.

4.2 ***TEE Sensitivity Testing***

4.2.1 Sensitivity tests have been carried out on the TEE results in order to illustrate the potential variation in scheme benefits. The central forecasts are based on the data inputs as described above.

4.2.2 The low forecasts assume that no journey time-savings are achieved by the scheme.

4.2.3 The high forecast assumes an additional 20% reduction in journey times is achievable over-and-above that within the central forecast. So the journey time along the A838 is assumed to fall to just under 32 minutes. In addition the base trips/day are assumed to be 10% higher. Furthermore, the journey time elasticity applied to estimate generated traffic is assumed to be –0.3

Table 4.2: TEE Results – Central, Low and High Forecasts (Glenelg - Shiel Bridge)

Central Forecast	Low Forecast	High Forecast
41	**0**	**54**

4.3 ***Present Value of TEE Benefits***

4.3.1 Table 4.3 indicates the present value of the TEE benefits over 30 years for the central, low and high forecasts.

Table 4.3: Present Value of Benefits (£M) - Central, Low, High Forecasts (Salen - Tobermory)

Central Forecast	Low Forecast	High Forecast
0.8	**0.0**	**1.1**

* assumes 3.5% discount rate

5 Business Survey (Glenelg to Shiel Bridge)

5.1 ***Business Survey Data***

5.1.1 Section 5 of the main report describes the objective and methodology for undertaking the business survey. It further discusses the sample obtained and its representation of local businesses. In addition, it presents the results at an aggregate level, across all schemes, in order to evaluate general trends.

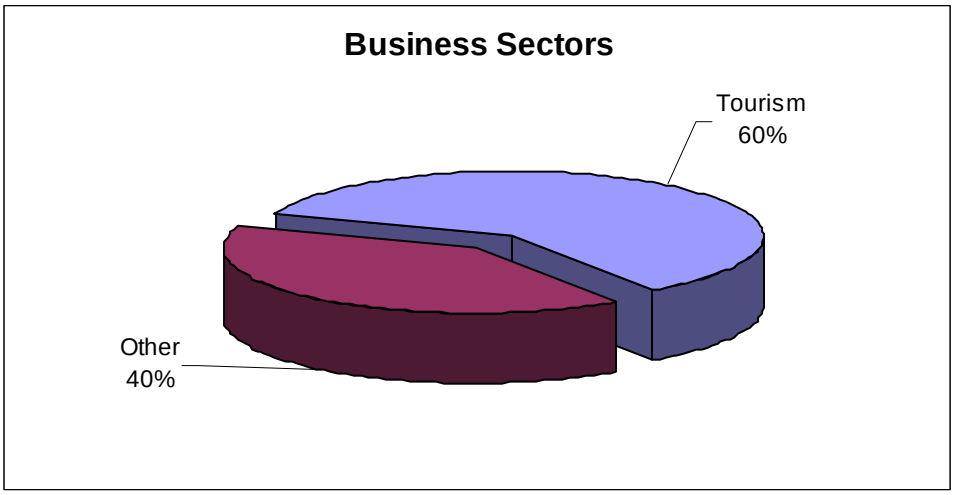
5.1.2 The section below presents the results for businesses that will be directly affected by the proposed Glenelg to Shiel Bridge scheme. Whilst the overall sample size achieved (5 firms) does not allow for statistically significant analysis to be undertaken, it does provide an insight into how the scheme may affect local firms.

5.1.3 The results have been used to inform the analysis in Section 6 evaluating the economic activity and locational impacts of the scheme.

Type of Business (Glenelg to Shiel Bridge)

5.1.4 The majority of businesses surveyed along the Glenelg to Shiel Bridge route reported to be 'tourism' related organisations (60%), with a further 40% within 'other' sectors. None of the respondents were in the 'fishing', 'forestry', 'agriculture' or 'transport' sectors.

5.1.5 The responses by sector are presented graphically below.

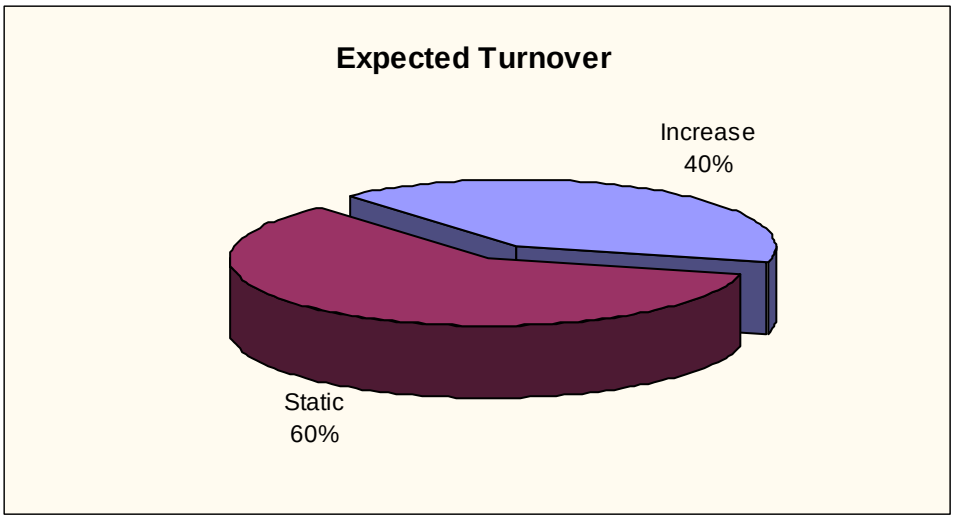


Turnover (Glenelg to Shiel Bridge)

5.1.6 The table below summarises the annual turnover of firms surveyed in each of the business sectors. The majority of respondents quoted a turnover of between £50k £500k a year, whilst one 'tourism' firm reported an annual turnover of less than £50k.

Turnover	Sector		
	Tourism	**Other**	**Total**
0 - 50k	1	0	**1**
50k - 250k	1	1	**2**
250k - 500k	1	1	**2**
500k - 1m	0	0	**0**
1 - 5m	0	0	**0**
> 5m	0	0	**0**
No Response	0	0	**0**
Total	**3**	**2**	**5**

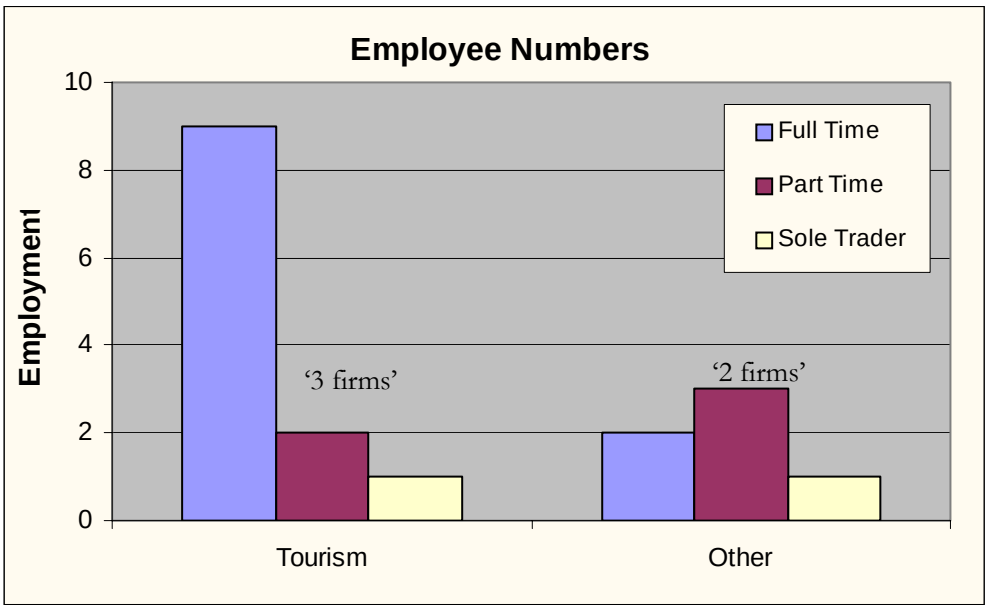
5.1.7 The following diagram indicates expectations amongst firms along the Glenelg to Shiel Bridge route regarding future turnover. The results suggest that around 40% of the businesses surveyed expect to witness an increase in turnover over the next three years, with the remainder predicting static turnover. None of the respondents consider that turnover will decrease.



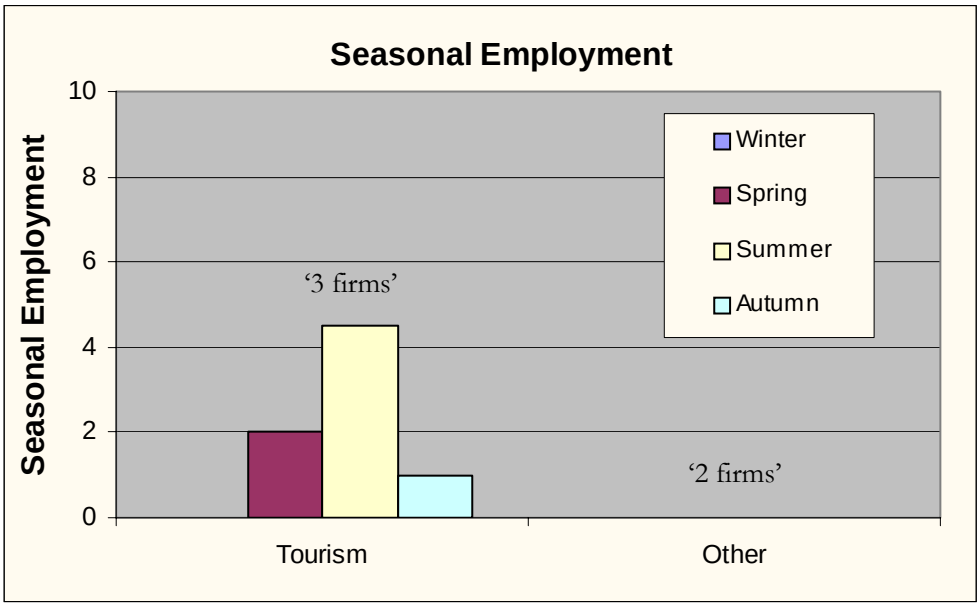
Employment (Glenelg to Shiel Bridge)

5.1.8 In line with the data on turnover the majority of the businesses who responded employ a relatively small work force. Around 60% of firms employ two or less staff and one business has six employees.

5.1.9 In total around 11 full-time and 5 part-time employees are represented. The histogram below presents the employment data by sector including the number of sole traders. The majority of full time employment was within the 'tourism' sector (9), with only two employed by 'other' sectors.



5.1.10 The split of seasonal employment across sectors is shown in the following diagram. The results highlight the seasonal variations inherent within the 'tourism' sector.



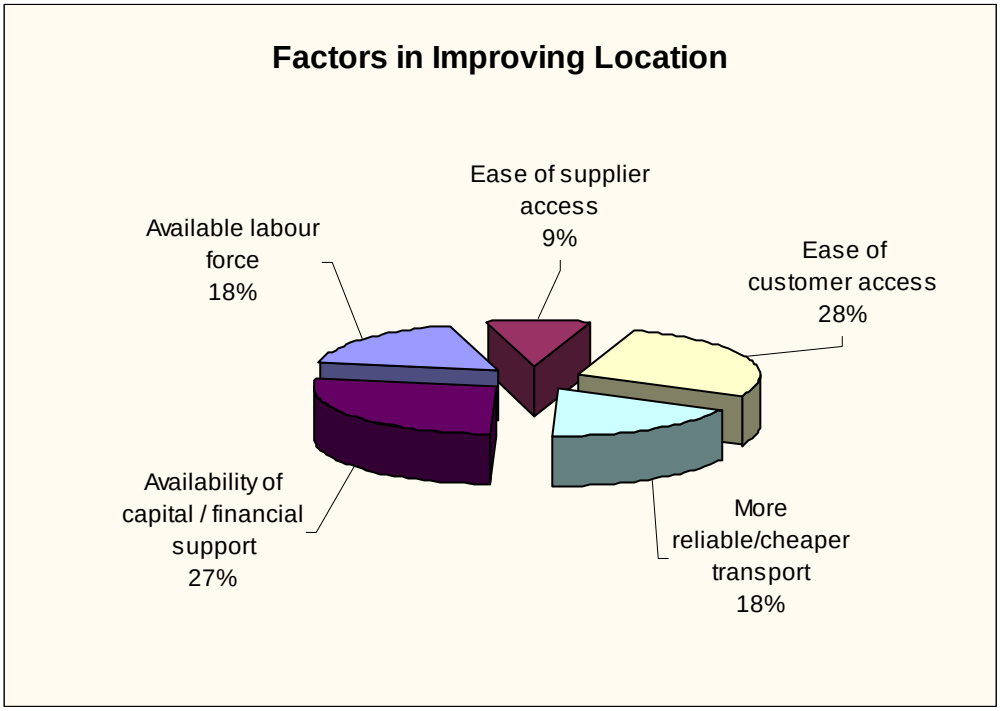
5.1.11 Firms were asked about their employment expectations over the next three years. All respondents reported that they expect employment levels to remain constant.

5.1.12 In comparison to expectations of turnover, firms generally predict a lower rate of growth in employment inputs than output. This indicates that firms expect to be able to obtain better utilisation of their current input capital.

Geographical Flexibility (Glenelg to Shiel Bridge)

5.1.13 Businesses were asked about the feasibility of relocating as a measure of the geographically flexible of their operation. The overwhelming majority (60%) of companies reported the probability of relocating to be low. This indicates that the majority of businesses surveyed are not geographically mobile.

5.1.14 The diagram below highlights the relative importance of key factors in improving the location as a place to do business. Ease of customer access is considered to be the most important factor, followed by more reliable/cheap transport and available labour force.



Transport (Glenelg to Shiel Bridge)

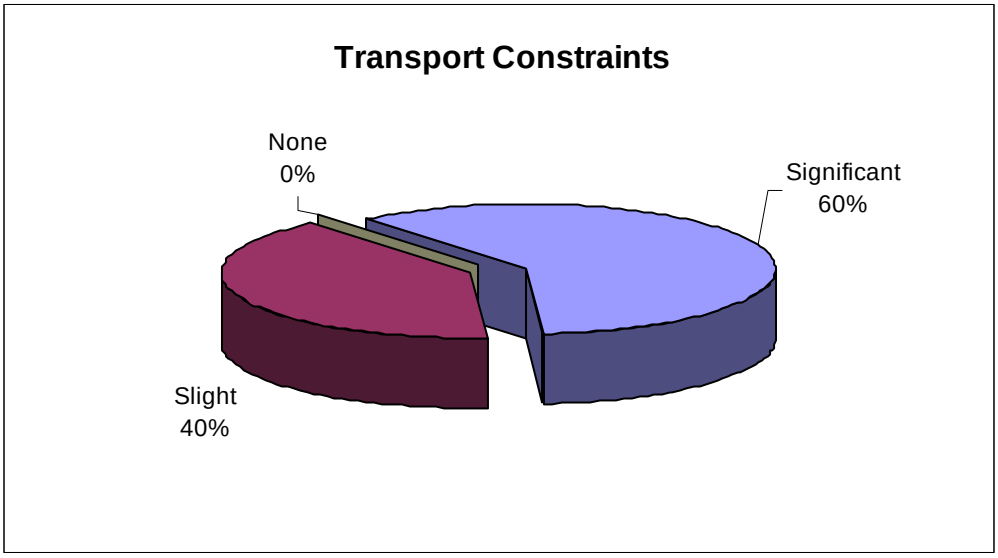
5.1.15 In order to gauge the significance of transportation within a firms operation, respondents were asked to rate the importance of the movement of goods and supplies to their business.

5.1.16 One business responded that the movement of goods was of high importance; a second stated it was of medium importance. Three respondents failed to respond. Furthermore, all of the firms who transport goods were unable to identify an alternative route for the transport of their finished products.

5.1.17 Three of the businesses felt that the movement of supplies was of high importance; a fourth stated it was of medium importance; one firm did not respond. Furthermore, all four firms responded that there was no alternative route for them to import supplies.

5.1.18 Businesses were asked to estimate the percentage of their total costs that are associated with the transportation of goods and/or supplies. Two respondents provided this data with one indicating transport costs were between 0% and 20% of total costs and one indicating them to be between 20% and 40% of total costs.

5.1.19 Respondents were asked whether their business currently face any transport constraints. All of the respondents stated that this was the case, with 60% considering these constraints to be significant.

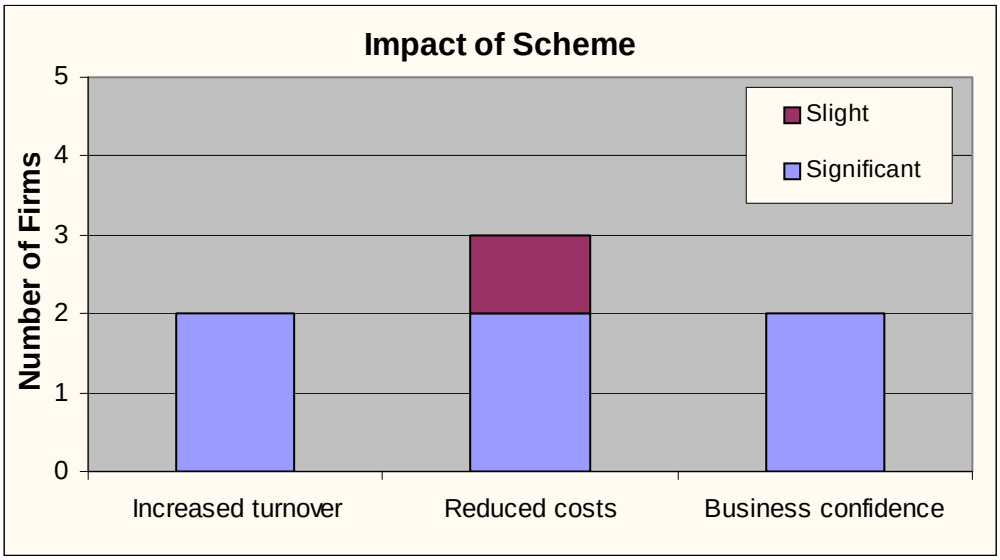


Scheme Impact (Glenelg to Shiel Bridge)

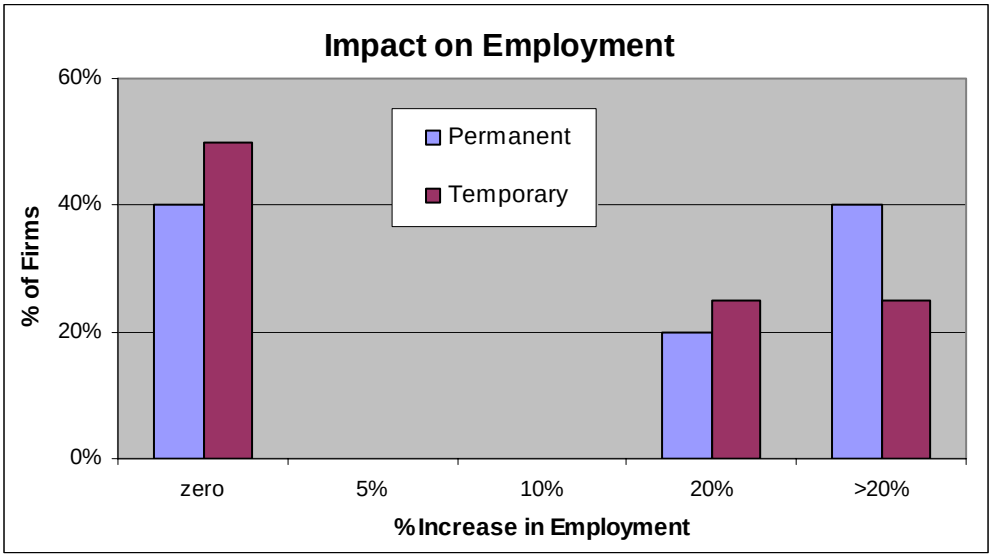
5.1.20 All firms were given a broad description of the type of scheme upgrade proposed along C46. Respondents were then asked to consider the likely impact of a road improvement upgrade upon their business.

5.1.21 The figure below presents firms perceptions of the likely impact of a road improvement scheme on business confidence, turnover and costs. A total of three firms (60%) expected road improvements to decrease costs, two firms (40%) expected road improvements to increase turnover and two firms (40%) expected a significant boost in business confidence as a result of road improvements.

5.1.22 One firm did not expect any impact to their business as a result of a road improvement scheme.



5.1.23 Firms were further asked to quantify impacts of a road improvement upon the level of employment. Some 40% of firms considered that an improvement scheme would have little or no impact upon the number of permanent staff that they employed. However, the remaining 60% of respondents perceived a road improvement scheme would increase their employment levels by at least 20%. The following table summarises the employment effects of the route improvements.



Additional Comments (Glenelg to Shiel Bridge)

5.1.24 Respondents from Glenelg reported considerable difficulties in obtaining supplies. Many suppliers are not willing to deliver due to the inadequate condition of the road. Safety was also a major concern, particularly since the designated route is the sole means of access to the community. A ferry service is in operation but this only runs a seasonal timetable implying that without the road the community would be isolated. Furthermore, the ferry is not considered to be a viable alternative transport option to reach mainland destinations as it is a much longer route and involves crossing the Skye Bridge.

6 Economic Activity Locational Impact Analysis (Glenelg to Shiel Bridge)

6.1 ***EALI Analysis***

6.1.1 The direct benefits to transport users have been estimated as part of the TEE analysis. However, the enhancements to the C46 may also generate additional benefits in terms of stimulating economic activity at locations served by the route.

6.1.2 The assessment process for determining any potential EALI benefits is not straightforward in the absence of modelling tools. The business survey provides insights into how firms may react to improvements in accessibility. However the relatively small sample sizes make the translation of this data into quantifiable forecasts unreliable. This section therefore seeks to highlight the likely areas where EALI benefits may be derived from the scheme and provide an indication of their magnitude. A detailed description of the EALI methodology is presented in Section 3.6 of the main report.

Importance of Lifeline Roads to Key Sectors

6.1.3 As part of the Stage One and Workshop phases of this study a key aspect was to identify the main problems, issues and constraints facing firms and organisations within remote communities. More specifically the process involved analysing the importance of 'lifeline' roads to the various industry sectors. One output from this process was the extent to which forestry, fish farming and tourism rely upon the quality of the local and regional road network.

6.1.4 The timber industry is a particular heavy user of lifeline rural roads. The main representative body, the Timber Transport Forum, has an on-going campaign to improve key timber routes. The success of this campaign is reflected in the recent commitment in the Partnerships document (Scottish Executive, 2003) to provide support for roads affected by timber production. The timber industry as a whole in the Highlands and Islands is expected to almost double over the next 10 years, adding considerable pressure to an already unsuitable transport network. Upgrades to lifeline routes serving existing and potential forestry sites are therefore likely to help stimulate economic activity in this sector.

6.1.5 The fish farming sector also stressed the importance of lifeline roads, both in bringing raw materials to the fish farms as well as shipping out produce to

domestic and international markets. A high proportion of fish farms are located along lifeline routes and thus the condition and upkeep of these routes is essential. Fish farming within the Highlands and Islands is facing considerable competition from abroad, which has driven down prices. As a result, quick and efficient deliveries are becoming increasingly essential in order for these firms to compete.

6.1.6 The tourism industry within the Highlands and Islands is a key employer within the region. Whilst tourist boards generally cite major exogenous variables as drivers for tourism performance the level of accessibility to the regions is an important factor. The condition of lifeline routes, in particular in providing access to ferry ports, is essential in encouraging visitors to access remote areas and thus stimulate economic activity.

6.1.7 Lifeline roads are therefore clearly an important aspect to the successful operation of these three key sectors within remote areas of the Highlands and Islands. Improved levels of accessibility along routes servicing existing or potential new sites for these industries can therefore be seen as likely to have a positive impact upon economic activity.

Glenelg to Shiel Bridge Scheme Impacts

6.1.8 The scale of the improvements along this route is not significant and as such it is unlikely that they will stimulate substantial economic activity within the region. However, given the remote nature of the communities in and around Glenelg it is essential that the levels of accessibility are, at a minimum, maintained, in order to allow the communities to remain viable. It is suggested that the investment should therefore be judged upon this criteria.

6.1.9 The general economic indicators for the area demonstrate that, economically, it is considerably less prosperous than most of the rest of the Highlands and Islands. Unemployment levels are significantly higher than the average and the region is designated a "Fragile Area". It is also designated as an Initiative at the Edge area with aim of stimulating the community to help maintain its economic viability

6.1.10 The business survey responses indicated the following key results:

- A large proportion of the firms are geographically immobile and thus are heavily reliant on the local infrastructure and service provision, rather than being in a position to look for alternative locations to undertake their business;

- All of firms are reliant upon the C46 for supplies and delivery of goods and that the current levels of transport provision create serious constraints to most of their business operation. Furthermore, 'better access to customers' and a 'more reliable/cheaper transport network' are considered important factor in improving the desirability of the area;

- Over half the respondents consider that a road scheme improvement would significantly reduce their transport costs and allow them to expand turnover. In nearly all cases this would also lead to a requirement for an expansion in the workforce by up to 20%.

6.1.11 The scheme improvements will help maintain and improve accessibility to Glenelg, Arnisdale and the surrounding communities. This should provide a stimulus to all firms operating in and around the area. The widening of sections of the route and the provision of additional passing places will be of particular benefits to heavy goods vehicles and will ensure that the route remains passable to them. Transportation costs may fall marginally through improvements in journey times and journey time reliability.

6.1.12 Maintaining the accessibility of the area is critical given the geographical immobility of most of the local firms. The level of accessibility is of particular importance for the primary industries, such as agriculture, forestry and fishing, which are heavily reliant upon the ability to effectively transport their produce to the markets. The proposed improvements should ensure that these industries can continue to trade effectively. In some instances transportation costs may be reduced through faster, more reliable journey times. This in turn could lead to the expansion of these industries by encouraging new sites to be developed or turnover to be increased.

6.1.13 Better accessibility along the C46 will encourage more visitors to the area, thus stimulate tourism. If coupled with a campaign to promote Glenelg as a visitor attraction then this could have a significant impact upon the local economy.

6.2 ***EALI Conclusions***

6.2.1 The EALI analysis indicates that the following key benefits can be derived from the proposed C46 scheme enhancements:

- Provide stimulus to all firms operating in and around Glenelg by releasing some of the constraints to travel currently experienced along the C46;

- Maintain the operating conditions for the primary industries, such as forestry and fishing, by ensuring continued accessibility to markets;

- Promote tourism within Glenelg and surrounding area.

6.2.2 The road improvements are small-scale and subsequently the EALI benefits (GDP or employment) will, in absolute terms, be minimal. However for communities the size of Glenelg such incremental increases in economic activity can have a relatively significant impact to the overall long-term economic and social sustainability of the area.

7 Conclusions (Glenelg to Shiel Bridge)

7.1 ***Overall Scheme Evaluation Conclusions***

7.1.1 The aim of the Glenelg to Shiel Bridge scheme is to ensure the continued level of required accessibility to maintain the viability of the communities in the region. The analysis has demonstrated that the route is a considerable constrain to the industries operating in Glenelg and surrounding villages. The improvements will ensure that the route remains suitable for the type of vehicles required to serve these industries.

7.1.2 Direct transport benefits deriving from the journey time savings are estimated to be relatively insignificant due to both the scale of the upgrade and the volumes of traffic. Given the low level of capital costs (£0.5M) the user benefits may be of a magnitude to justify the by themselves. The present value of benefits over 30 years is estimated to be in the region of £0.8M, with a low and high forecast of zero and £1.1M, respectively.

7.1.3 The indirect impacts upon the local communities are likely to be accrued in terms of ensuring the long-term to sustainability of economic and social activity. The road improvements should ensure accessibility remains sufficient to maintain the economic vitality of the area.

7.1.4 Accident rates along the C46 are low indicating limited potential for accident reduction benefits along the route. The scheme itself will provide some small-scale improvements to safety along the route.