HITRANS

Investment in Lifeline Rural Roads
Individual Scheme Appraisals – Auchtertyre to Strathcarron
September 2004

Halcrow Group Limited

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Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed

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1 Introduction (Auchtertyre to Strathcarron)

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 Auchtertyre to Strathcarron 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.

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[1] Halcrow (2004)

2 Background (Auchtertyre to Strathcarron)

2.1 *Contextual Background*

2.1.1 The A890 is a key route linking the A87 and Skye to the A896. Not only serving the local communities, the road provides a link from Skye and the Western Isles through to the main road infrastructure towards Inverness. In this respect it is an important route in terms of regional accessibility. Figure 1 presents a map of the route.

2.1.2 The route is part double-track, part single-track between Auchtertyre and Strathcarron. This restricts journey times and makes alternative routes such as the A87 more attractive to use, particularly in the summer months when tourist traffic makes the A890 a tortuous route. It is also a high altitude route with long severe gradients, which again restrict journey times.

2.1.3 The A890 can often closed due to a variety of reasons. The occurrence of accidents can often lead the single track sections of the route becoming blocked and traffic having to be diverted. More significantly a series of rock fall problems has lead to the route having to be closed for substantial periods of time. This results in long term diversions which have a large detrimental impact on business and people reliant upon the route. As an example of the impact the road closure has upon the local community, it has been necessary in the past to charter a ferry across Loch Carron in order to move pupils to and from their local school.

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 along the route has a population of around 1,100 [postcode areas IV40, IV53 & IV54]. Auchtertyre, Kirkton and Nostie at the south of the route are estimated to have just fewer than 300 residents, whilst Strathcarron and Attadale to the north of the route have nearly 150.

2.2.2 Employment levels across the region are estimated at just over 500, with the majority of the jobs in the tertiary sector.

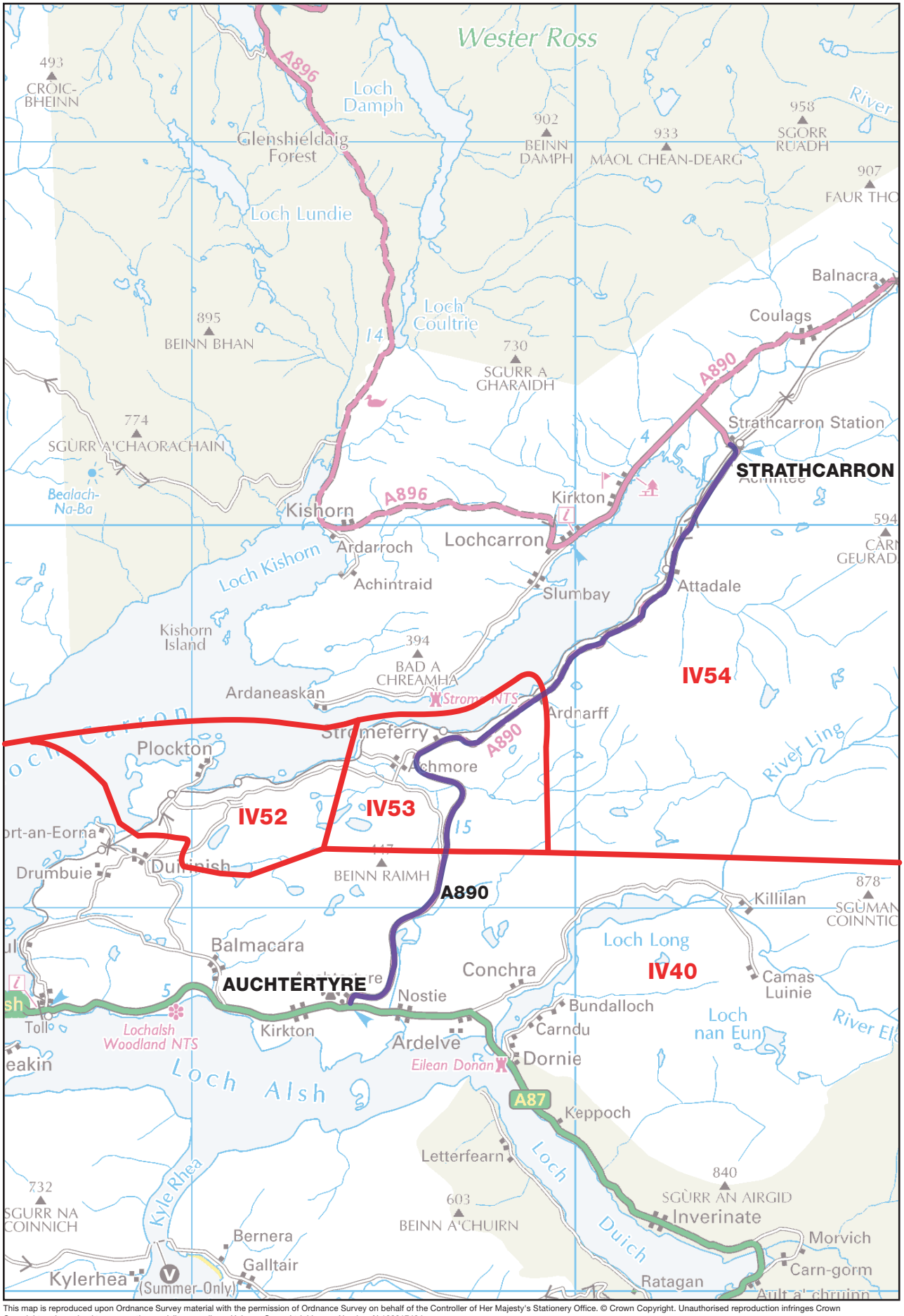


Figure 1 : A890 AUCHTERTYRE TO STRATHCARRON

2.2.3 Unemployment levels within the area along the A890 are estimated at 5.2%. 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.

2.2.4 The indices of deprivation, presented in Table 4.3 of the main report, imply that the area around the A890 is significantly 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 these communities and low levels of public transport services result in private car ownership becoming a necessity.

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. The region around the A890 is not classified as a 'Fragile Area' under this assessment process.

2.2.6 Whilst the A890 has local importance to the economies between and including Auchtertyre and Strathcarron the route is primarily used by through traffic to access the wider region. It is of strategic importance to areas such as Skye and Lochalsh to the west as well as the Northwest Highlands.

*2.3 **Existing Road Conditions***

2.3.1 The current route is just over 50% single-track with an average carriageway width of 5.1m. Passing places are provided every 150m, on average. Whilst the route does not have any width or weight restriction orders the practical constraints of the single-track carriageway limit the type of vehicles that can easily use the route.

2.3.2 In addition the route varies considerably in altitude with steep changes in gradient resulting in slow moving traffic. The route generally also suffers from poor road surface.

2.3.3 The traffic count data provided by the Highland Council indicated that the average 24-hour 2-way traffic flow across the year is 1,177 vehicles. This count was taken in Strathcarron. It is estimated that a relatively high proportion of these trips will have a final destination beyond Auchtertyre. As a proxy, 80% of these trips have been assumed to benefit from the full extent of the scheme upgrade. This generates a 2-way, 24-hour trips flow for the route of 942 vehicles.

2.4 ***Proposed Improvement Scheme***

2.4.1 A large-scale upgrade is proposed with an estimated scheme cost in the region of £12.0M across the 11.75km scheme route. This gives an estimated cost per scheme km of over £1.0M.

2.4.2 The scope of the works includes upgrading the 11.75km section of single track to double track from Attadale to South Strome. An entirely new alignment will be utilised through the Attadale Estate in order to avoid current rock fall hazard problem and steep gradients. Upon completion this will provide a double-track route along the entire route from Auchtertyre to Strathcarron.

3 Assessment of Scheme Impacts
(Auchtertyre to Strathcarron)

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 46km/hr. This is a reflection of the fact that around 55% of the route is single-track.

3.1.2 The new 11.75km section of double track road will result in the entire route between Auchtertyre and Strathcarron becoming double-track. The Council believes that will allow a much smoother progression of traffic along the route. They estimate that average journey times between Auchtertyre and Strathcarron will be reduced by around seven minutes. This would translate to a journey time of 22 minutes against the current 29 minutes. This represents a 24% reduction in average journey time.

3.1.3 The estimated improvement in journey time would translate to an average speed across the route of around 60km/hr. This represents a significant improvement and suggests a positive return on the capital investment.

3.1.4 Improvements in journey time reliability are also expected as a result of the anticipated reduction traffic conflicts. It is estimated that 'average delay' (as described in Section 3.4.15) could fall by as much as 2.6 minutes per trip.

3.1.5 It should be noted that this 'average delay' figure does not incorporate the impact that a total road closure has upon journey times. The scheme improvements should substantially reduce the frequency of road closures and hence improve general reliability. This impact is difficult to quantify however it is anticipated to be substantial and, as such, should be considered as an important benefit of the scheme.

3.1.6 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) have been estimated to fall by around 4.5 pence per existing trip.

3.2 ***Diversionary Impacts***

3.2.1 The A890 from Auchtertyre to Strathcarron is considered to offer an alternative route to road-based trips between limited origin–destination pairs. The proposed upgrades to the route may result in some traffic diverting from other roads to take advantage of the reduced journey times and improved reliability on the A890, but it is considered likely to be minimal.

3.2.2 The one generic trip type that is considered to offer potential for diversion away from other routes to the A890 is from Skye to North Inverness. Analysis of the comparative journey times indicates that diversion may occur with road users choosing to travel along the A890 rather than alternative routes utilising the A87.

3.2.3 It is difficult to accurately assess the potential levels of diversion due to the absence of origin–destination travel data for the region, making it difficult to estimate traffic volumes. Therefore an estimation has been made utilising two known factors i) the level of base traffic flows on the A838 and ii) the scale of the journey time improvements as a proportion of overall route travel times. The latter has been used to generate a 'diversion scale' across three levels representing the likelihood of diversion - low, medium or high. These levels have then has then been translated into factors to apply to the base traffic flows in order to provide an estimate of increased traffic flows along the route. Section 3.4.18 of the main report provides a detailed description of this methodology.

3.2.4 Utilising this methodology the Skye to North Inverness route is classified as having 'low' potential for diversion. These translate to a central forecast level of diversionary trips of 19 per day.

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 24%, along with a base flow of 942 vehicles, gives a forecast traffic generation of 45 trips per day.

3.4 ***Accident Reduction Impacts***

3.4.1 The reported number of accidents along the A890 is generally low. A single fatal, five serious and two slight accidents have been reported within the last five years (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. It is therefore feasible that a much larger number of slight accidents may have occurred during the period than reported.

3.4.3 The total level of accident, reported and unreported, whilst unlikely to be much higher than the reported figure is still potentially significant. There could therefore some margin for scheme benefits from accident reduction.

3.4.4 The scheme itself should help to reduce the potential for accidents, in particular between on-coming traffic. Upgrading the 11.75km section from single to double-track should reduce the likelihood of vehicle collisions. Being an entirely new section of road should also ensure a much higher quality carriageway providing significant safety benefits.

3.5 ***Other Impacts***

3.5.1 In addition to the impacts described above the scheme is also anticipated to derive potential benefits in two other areas. By significantly reducing the risk of rock falls and road closures the level of annual highway maintenance along the route will be substantially reduced. In addition, the proposed new road alignment may also enable better protection for the rail line that runs alongside.

Table 3.1: Summary of Scheme and Estimated Impacts (Auchtertyre-Strathcarron)

Description of Scheme Upgrade	11.75km section of new double track road Estimated scheme costs = £12.0m Scheme cost per km = £1.0M	
Impact on Journey Times	It is estimated that journey times along the route could improve by an average of 7 minutes Estimated existing JT = 29 min Estimated post-scheme JT = 22 min	
Diversionary Impacts	**Competing routes**	**Estimated diversion**
	Skye to Inverness	Low
Generated Traffic	Assumed journey time elasticity of –0.2 24% reduction in JT = 4.8% increase in traffic	
Accident Reduction Impact	Relatively low levels of reported accidents Scheme should significantly improve safety levels	
Other Impacts	Reduce frequency of total road closures Reduce annual highway maintenance Enable better protection for railway line	

4 Transport Economic Efficiency Analysis (Auchtertyre to Strathcarron)

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 7-minute journey time saving, along with a reduction in 'average delay' of 2.6 minutes, translates to an existing user benefit of just over 4.5 pence per vehicle trip plus 100 pence per person trip. With the base volume of vehicle trips at 942 and vehicle occupancy of 1.41 this gives a central forecast for existing user benefits of £503k per annum.

4.1.2 Section 3.2 above describes the assessment of potential 'diversionary benefits' deriving from the scheme. A broad-brush forecast of around 19 trips per day is estimated. This translates to around £6k per annum, based on the assumption that each diversionary trip derives half the marginal benefit of each existing users of the scheme.

4.1.3 Section 3.3 above describes the assessment of potential 'generated trip' benefits deriving from the scheme. The central forecast of 45 trips per day translates into a generated user benefit of £13k per annum.

Table 4.1: TEE Results (Auchtertyre - Strathcarron)

Base Trip Matrix (vehicles 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)
942	7	503	19	6	45	13	**522**

4.1.4 Overall total user benefits are therefore estimated to be in the region of £522k per year. In addition, there are anticipated to be significant reliability benefits deriving from the reduced frequency of road closures, which are not represented within this figure.

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 only half the estimated journey time-savings are actually achieved by the scheme. So rather than journey times along the A890 falling from 29 to 22 minutes the low forecast assumes a journey time of just under 26 minutes. In addition the base trips/day are assumed to be 25% lower. This impacts upon 'existing-user' benefits, 'diversionary-user' benefits and 'generated-user' benefits. Furthermore, the journey time elasticity applied to estimate generated traffic is assumed to be only –0.1.

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 A890 is assumed to fall to just under 21 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 (Auchtertyre-Strathcarron)

Central Forecast	Low Forecast	High Forecast
522	**194**	**700**

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
10.2	**4.0**	**14.6**

* assumes 3.5% discount rate

5 Business Survey (Auchtertyre to Strathcarron)

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.

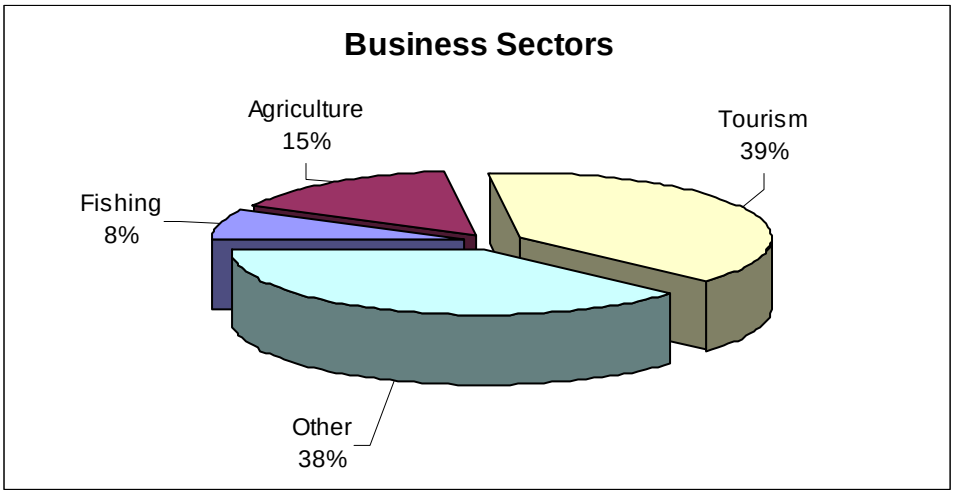
5.1.2 The section below presents the results for businesses that will be directly affected by the proposed Auchtertyre to Strathcarron scheme. Whilst the overall sample size achieved (13 firms) does not allow for statistically significant analysis to be undertaken, it does provide an insight into how 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 (Auchtertyre - Strathcarron)

5.1.4 The majority of businesses surveyed along the Auchtertyre to Strathcarron route reported to be 'tourism' related organisations (39%), with a further 38% within 'other' sectors. None of the respondents were in the 'forestry' or 'transport' sectors.

5.1.5 With the exception of the absence of any 'transport' sector representation the sample can be considered roughly in line with the actual sectoral breakdown along the Auchtertyre to Strathcarron route, with a large representation from the tourism sector. The responses by sector are presented graphically below.

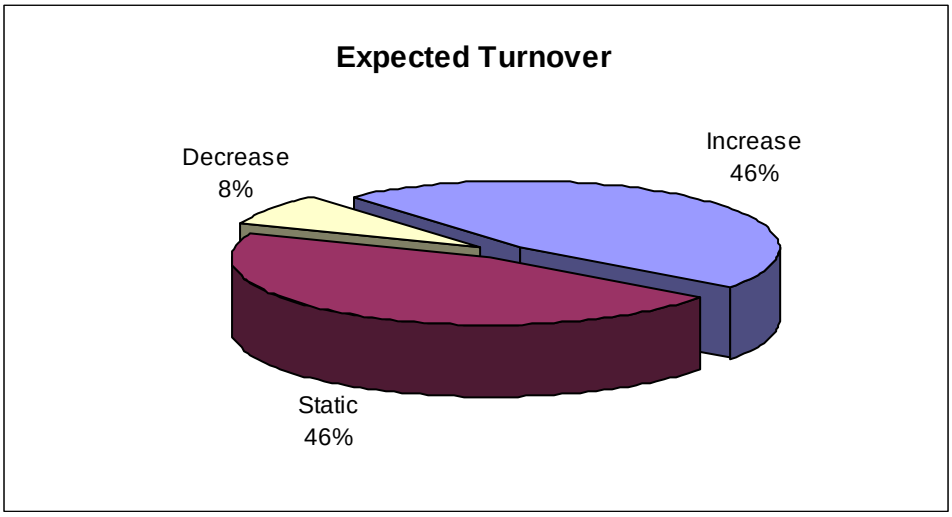


Turnover (Auchtertyre - Strathcarron)

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 less than £500k a year. Two 'tourism' firms reported a turnover of between £500k and £1m, whilst one 'fishing' and one 'other' firm reported an annual turnover of between £1m and £5m.

Turnover	**Sector**				
	Fishing	**Agriculture**	**Tourism**	**Other**	**Total**
0 - 50k	0	2	1	3	**6**
50k - 250k	0	0	1	1	**2**
250k - 500k	0	0	1	0	**1**
500k - 1m	0	0	2	0	**2**
1 - 5m	1	0	0	1	**2**
> 5m	0	0	0	0	**0**
Total	**1**	**2**	**5**	**5**	**13**

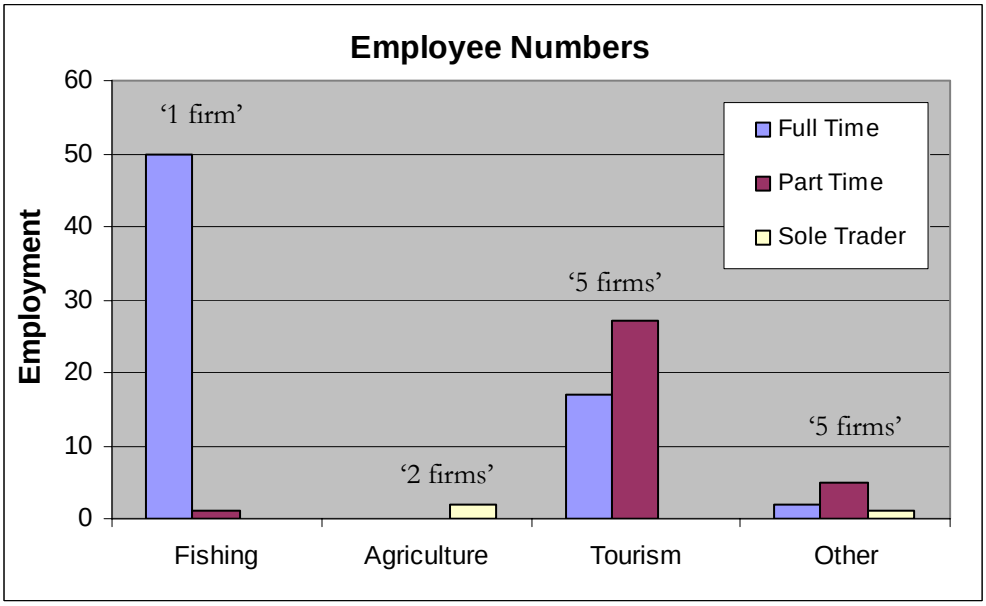
5.1.7 The following diagram indicates expectations amongst firms along the Auchtertyre to Strathcarron route regarding future turnover. The results suggest that almost half the businesses expect to witness an increase in turnover over the next three years, with only a small proportion predicting a decrease.



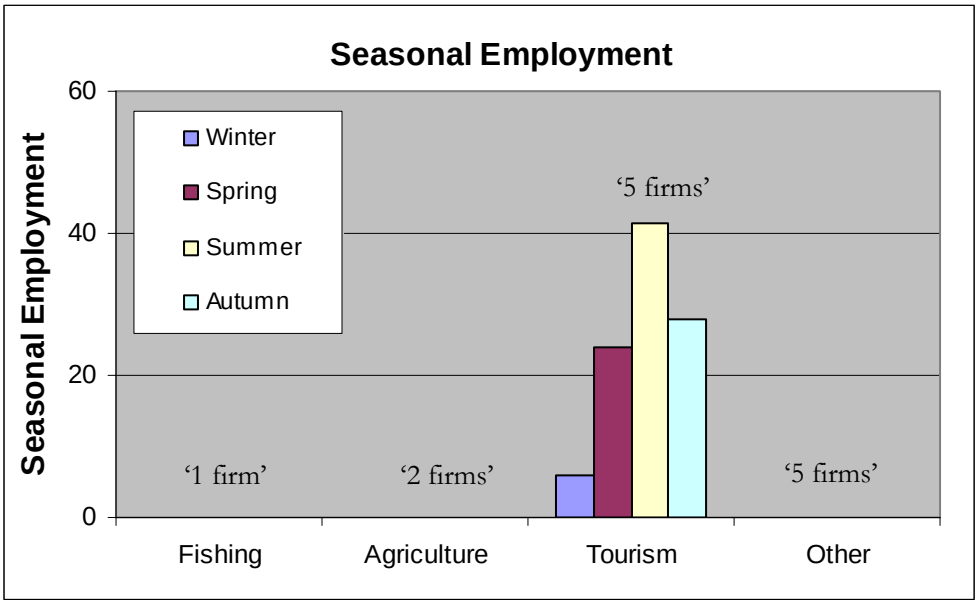
Employment (Auchtertyre - Strathcarron)

5.1.8 In line with the data on turnover the majority of the businesses who responded employ a relatively small work force. Around 46% of firms employ less than eight staff; and one firm has 50 employees.

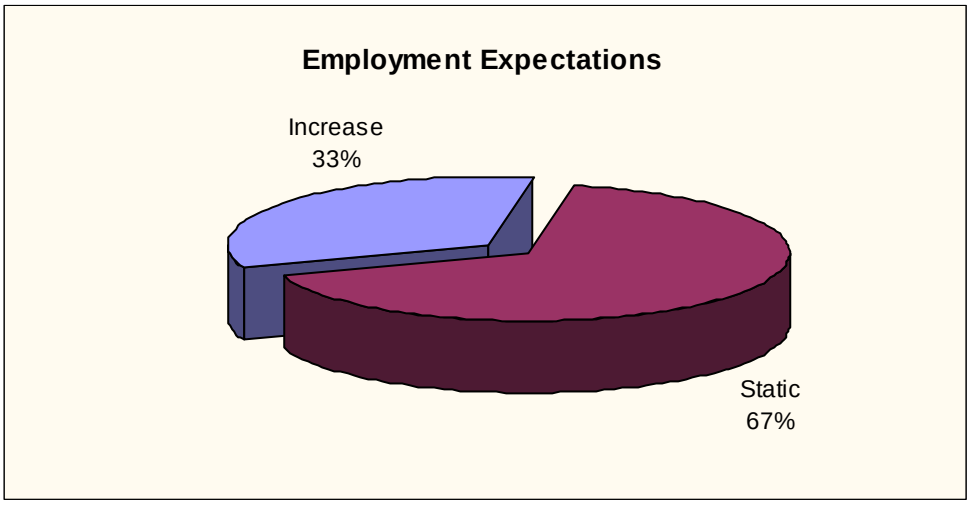
5.1.9 In total around 69 full-time and 33 part-time employees are represented. The histogram below presents the employment data by sector including the number of sole traders. The majority of full time employment was within the 'fishing' sector (50), followed by the 'tourism' sector (17).



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.



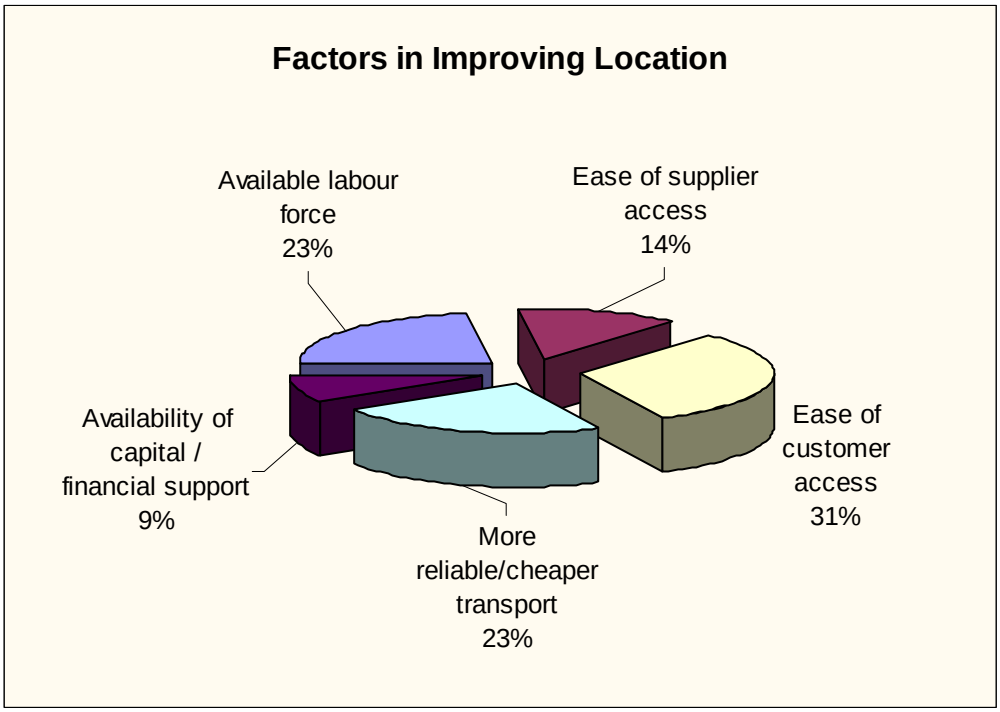
5.1.11 The employment expectations of firms over the next three years are highlighted in the diagram below. Most firms (67%) expect employment levels to remain constant, while the remaining 33% expect employment to increase. In comparison to expectations of turnover, firms generally predict a lower rate 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 (Auchtertyre - Strathcarron)

5.1.12 Businesses were asked about the feasibility of relocating as a measure of the geographically flexible of their operation. The overwhelming majority (69%) of companies reported the probability of relocating to be low. This indicates the limited geographic flexibility of firms along the Auchtertyre to Strathcarron route

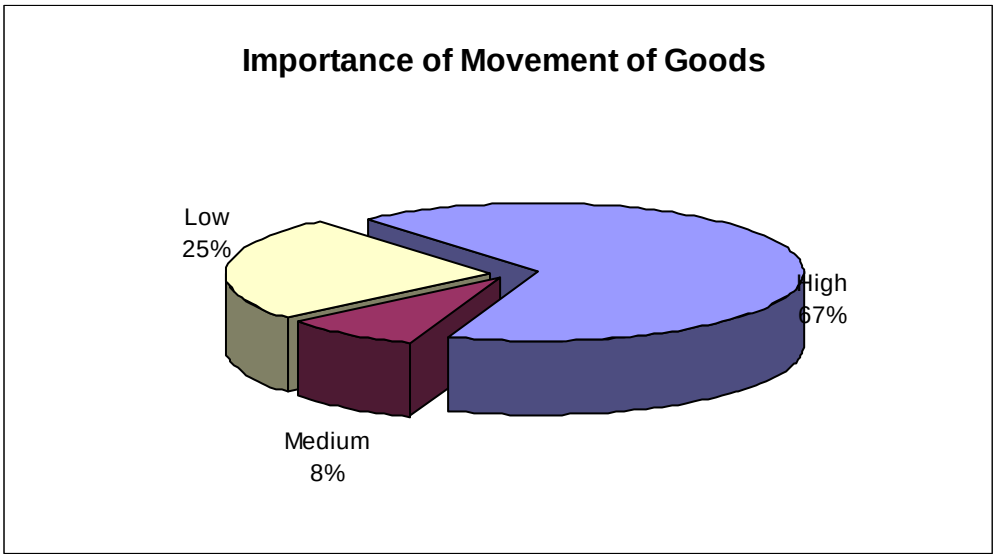
5.1.13 The diagram below highlights the relative importance of key factors in improving the location as a place to do business. Ease of customer access is considered to be the most important factor, followed by more reliable/cheap transport and available labour force.



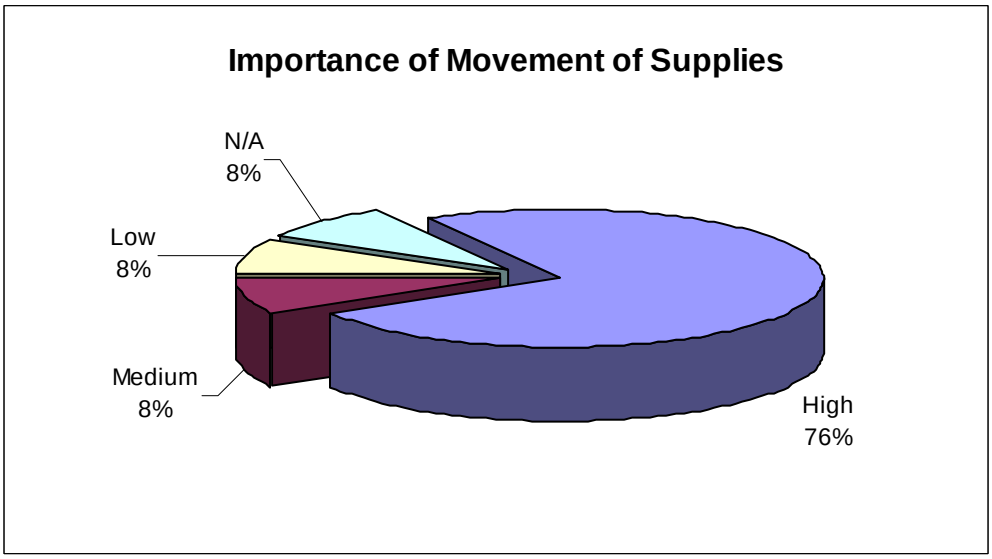
Transport (Auchtertyre - Strathcarron)

5.1.14 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.

5.1.15 The diagram below indicates the importance of the movement of goods. Some 67% of businesses responded that the movement of goods was of high importance. Furthermore, 50% of those who transport goods were unable to identify an alternative route for the transport of their finished products.

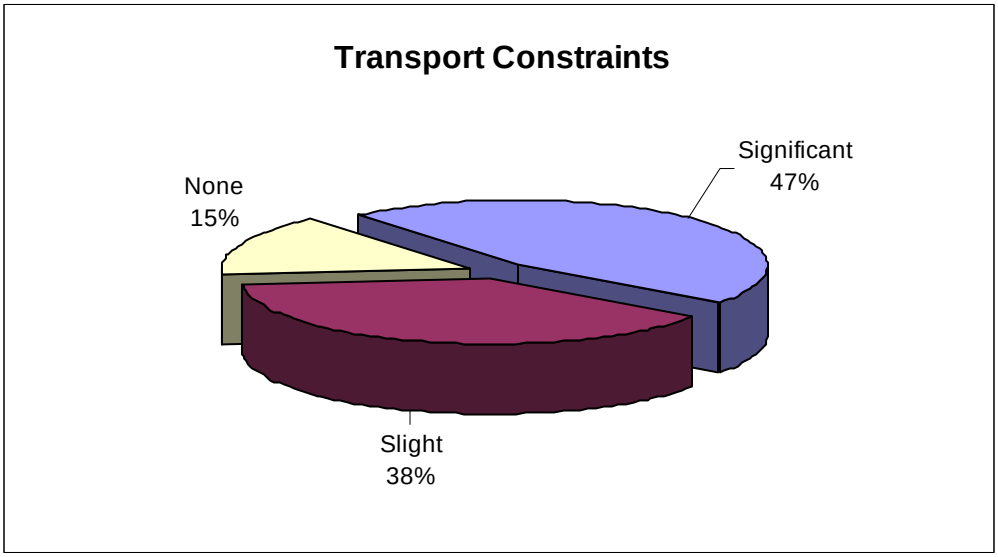


5.1.16 The diagram below indicates the importance of the movement of supplies. Some 76% of businesses felt that the movement of supplies was of high importance and 88% responded that there was no alternative route for them to import supplies.



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

5.1.18 Respondents were asked whether their business currently faced any transport constraints. Around 85% of respondents stated that this was the case, with 47% considering these constraints to be significant.

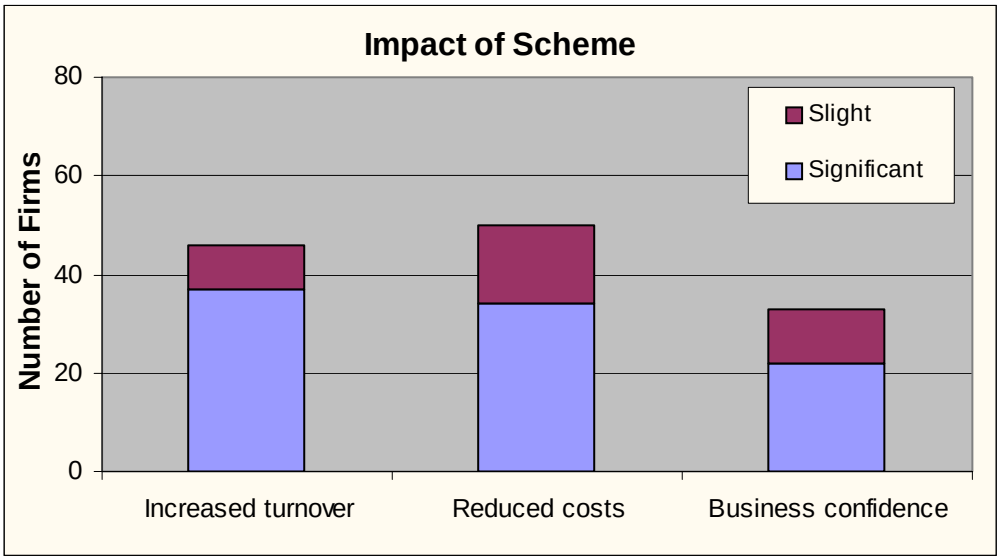


Scheme Impact (Auchtertyre - Strathcarron)

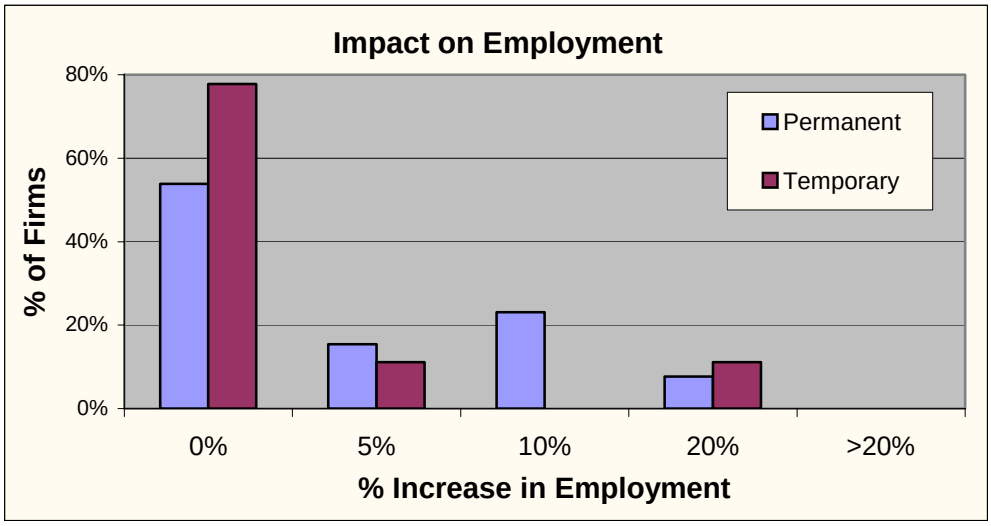
5.1.19 All firms were given a broad description of the type of scheme upgrade proposed along A890. Respondents were then asked to consider the likely impact of a road improvement upgrade upon their business.

5.1.20 The figure below presents firms perceptions of the likely impact of a road improvement on business confidence, turnover and costs. A total of five firms (38%) expected road improvements to decrease costs, six firms (46%) expected road improvements to increase turnover and four firms (31%) expected a significant boost in business confidence as a result of road improvements.

5.1.21 Two companies did not expect any impact to their business as a result of a road improvement scheme.



5.1.22 Firms were further asked to quantify impacts of a road improvement upon the level of employment. Some 54% of firms considered that an improvement scheme would have little or no impact upon the number of permanent staff that they employed. However, 46% of respondents perceived that a road improvement scheme would increase their permanent employment levels by up to 20%. The following table summarises the employment effects of the route improvements.



<u>Additional Comments</u> (Auchtertyre - Strathcarron)

5.1.23 The most frequently raised issue among responses from businesses in the Auchtertyre –Strathcarron catchment was the deterrent effect of the poor road conditions on tourists.

5.1.24 Some businesses, heavily reliant on transportation felt that the state of the road restricted their competitiveness against firms in the Central Belt.

5.1.25 Safety concerns were also raised regarding rock falls along the route and lack of grit spreading in the winter period.

6 Economic Activity Locational Impact Analysis (Auchtertyre to Strathcarron)

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 A890 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.

Auchtertyre to Strathcarron Scheme Impacts

6.1.8 The journey time savings from the proposed scheme are anticipated to be relatively significant. In addition, the road should become much more reliable to use with the new alignment ensuring more consistent journey times and less risk of closures. The route is currently subject to a significant number of closures every year, generally as a result of rock falls. This represents a significant constraint to businesses whom are reliant upon the route because the alternative route options entail a major diversion. As such, the proposed improvements should significantly enhance the attractiveness of the route and encourage economic activity within the areas that it serves.

6.1.9 As well as benefiting the communities located directly along the route it is considered that there will be wide spread impacts for the whole region. The route provides a link between the A87, the main route from up from the south to Skye, and the A896 and the A890 towards Strath bran and beyond. The A890 is therefore a key link within the regional road network and hence its upgrade should have significant regional benefits to areas such as Skye and the Western Isles.

6.1.10 The business survey responses indicated the following key results:

- Two thirds of 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. This demonstrates the dependence that local firms have on the transport provision;

- A high proportion of firms are reliant upon the A890 for supplies and delivery of goods but the current levels of transport provision create serious constraints to their business operation. Furthermore, 'ease of customer access' and a 'more reliable/cheaper transport network' are the two most important factor in improving the desirability of the area as a place to undertake business;

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

6.1.11 The responses outlined above provide a strong indication for the dependency of firms on good accessibility and the ability to efficiency transport goods to the markets. Maintaining and improving these routes is therefore a critical issue in sustaining the economic viability of these firms.

6.1.12 The road improvement should provide stimulus to the local communities along the A890 through the provision of a more reliable transport network. In particular, the greater reliability resulting from the reduced risk of road closures should ensure much less risk to transport operations/schedules throughout the year. This will improve the locality as an area in which to operate, thus enhancing the long-term economic viability of the area.

6.1.13 The improvement may further encourage the expansion of local business operations. A third of business survey respondents indicated that road improvements would significantly reduce their operating costs and in many cases could lead to an expansion in employment opportunities.

6.1.14 On a more strategic level the scheme may encourage the expansion of business operations within Skye and Lochalsh by providing greater and more reliable accessibility to markets in the North Highlands and around Inverness. In

particular, the reduced risk of road closure will provide firms with greater confidence in the ability to deliver goods to schedule via the A890.

6.1.15 The tourist trade is also likely to be encouraged to make greater use of the route from Skye and Lochalsh to the North Highlands thus generating additional economic activity across the region. The route suffers from very slow journey times during the summer months which the proposed upgrade will help to alleviate.

6.2 ***EALI Conclusions***

6.2.1 The scale of the proposed road improvements would suggest that there could be considerable economic benefits derived from the scheme. Part of these will be reflected in terms of maintaining the viability of existing operations within the region. However, if journey time savings of up to 7 minutes can be realised then this, along with the improved reliability, should help stimulate additional economic activity both locally and regionally.

6.2.2 The EALI analysis indicates that the following key benefits could be derived:

- Provide stimulus to the local communities along the A890 through the provision of a more reliable transport network. In particular, the scheme enhancements should dramatically reduce the risk of road closures thus ensuring much less risk to transport operations/schedules throughout the year;

- Encourage the expansion of local business operations;

- Encourage the expansion of business operations within Skye and Lochalsh by providing greater accessibility to markets in the North Highlands and around Inverness;

- Encourage the tourist trade to make greater use of the route from Skye and Lochalsh to the North Highlands thus generating additional economic activity across the region.

6.2.3 Limitations within the data set make it is difficult to accurately assess GDP or employment impacts. The business service responses suggest that around a third of the firms consider that the improvements would reduce their transport costs and subsequently lead to an increase in turnover. These firms tended to be from

the primary industries. A third of the firms also felt that the improvement would provide a boost to their business confidence.

6.2.4 In terms of employment impacts the business survey results suggested that amongst the firms that felt the scheme would have a positive impact it could result in a significant increase in employment. Nearly half of all the respondents considered that their workforce might expand by 5% or more.

6.2.5 In general it is considered that within the local communities the economic benefits will be reflected in terms of maintaining the current economic viability of the local economies. However, across the wider region encompassing Skye and the Western Isles the scheme may encourage expansion, in particular, within the tourism sector.

7 Conclusions (Auchtertyre to Strathcarron)

7.1 ***Overall Scheme Evaluation Conclusions***

7.1.1 The aim of the Auchtertyre to Strathcarron scheme is to improve the linkage between the Islands of Skye and the Western Isles and the region to the Northeast towards Inverness. The analysis has demonstrated that the single-track section of the route currently acts as a constraint on journeys, in particular in the summer months with the heavier tourist-related traffic flows.

7.1.2 Direct transport benefits deriving from the journey time savings are estimated to be significant, although they are unlikely to justify the capital costs (£12.0M) by themselves. The present value of benefits over 30 years is estimated to be in the region of £10.2M, with a low and high forecast of £4.0M - £14.6M, respectively.

7.1.3 In addition, there are anticipated to be significant reliability benefits deriving from the reduced frequency of road closures, which are not represented within the TEE figure.

7.1.4 Some indirect impacts upon the local and regional economy are also anticipated. Locally, communities should benefit from the improved accessibility allowing them to sustain existing economic viability. Regionally, the economies on Skye and the Western Isles should benefit. There is potential for the improvement to stimulate activity within the tourism markets.

7.1.5 Accident rates along the A890 are relatively substantial in comparison to other routes, although still generally low in absolute terms. This indicates that there is some limited potential for accident reduction benefits along the route. The scheme improvements, providing an entirely new double-track alignment, should improve safety along the route.

7.1.6 The scheme should also ensure that annual highway maintenance costs are significantly reduced as a result of much less risk of rock fall. In addition, the proposed new road alignment may also enable better protection for the rail line that runs alongside.