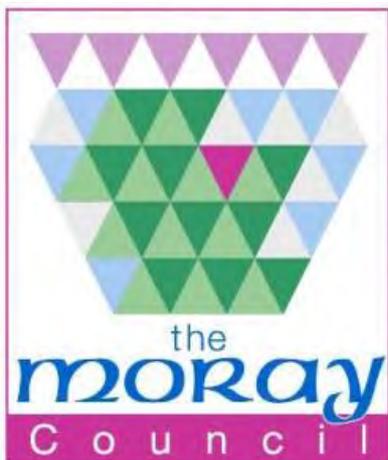


## The Moray Council and HITRANS

### A95 Route Action Study

17 December 2015



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## 1 Introduction

### 1.1 Study Background

Jacobs has been commissioned jointly by The Moray Council and HITRANS to undertake a Route Action Study for the A95. The A95 is the primary link to much of the Moray Council area from the A9, the A939, and A96 (east) and links to Moray's main population centre, Elgin, via the A941. The A95 also serves a strategic function with regards to serving the regional economy as there are a number of substantial businesses located along the corridor, including over 10 whisky distilleries, several food processing / manufacturing plants and managed forestry areas.

The A95 is a Trunk Road between Keith and Aviemore and, as such, is the responsibility of Transport Scotland with BEAR Scotland maintaining it on their behalf. The study corridor runs from the A95/A9 junction at Granish, north of Aviemore, to the A95/A96 junction at Keith but the principal focus is on the most heavily trafficked section between A95/A9 junction and the junction with the A941 at Craigellachie.

### 1.2 Study Aims

The specific aims of this project were agreed with the joint client prior to initiation, these are as follows:

- That, as an outcome of the investigations, it is ensured that all information gathered is both relevant and proportional to providing sufficient and reliable data for use in establishing an adequate understanding of existing transport conditions using the A95 trunk road as a whole or sections thereof;
- That recommendations on taking forward transport proposals shall meet the transport planning objectives established as part of the study and shall be realistically implementable and shall provide value for money.

### 1.3 Methodology

The study has been undertaken using the pre-appraisal methodology as set out in the Scottish Transport Appraisal Guidance (STAG). This methodology requires the identification and analysis of problems and opportunities along the corridor, establishing a set of Transport Planning Objectives for the study, and developing and sifting of a range of options to address them.

The STAG methodology was created by Transport Scotland to ensure that potential transport schemes are objectively appraised, that they will contribute to the Government's purpose and meet the transport planning needs of Scotland as a whole. By being objective-led, rather than solution-led, the methodology allows the appraisal of options against Transport Planning Objectives, STAG Criteria and established policy directives and therefore provides a robust evidence base for decision makers.

Given the high level nature of this study and the fact it is undertaken as a pre-appraisal exercise, it was mainly conducted as a desk-top exercise and the identification of problems and opportunities on the route was achieved using several approaches. Previous reports and studies undertaken on the route, as supplied by Moray Council, HITRANS, Transport Scotland and BEAR Scotland, were reviewed

along with existing strategies and policy documents from a range of sources, in order to identify key problems and opportunities. These reports are:

- Moray Economic Strategy;
- The Moray Council Local Transport Strategy;
- The Highland Council Local Transport Strategy;
- HITRANS Regional Transport Strategy;
- Moray Transport Interventions Study;
- Joint Road Safety Plan;
- Scottish Centre for Development and Industry A9/A96 research paper;
- Transport Scotland A95 speed limit review; and
- HITRANS Whisky Logistics Study.

In addition to the above reports, background traffic flow data, detailing hourly traffic flows throughout the year, and traffic accident data, for all injury accidents for the past five years, was supplied by Transport Scotland and subsequently analysed by Jacobs.

Further, as consultation is a central theme to any transport planning exercise undertaken in accordance with STAG, stakeholder workshops were held in December 2014 with local business and local authority representatives in order to gain a fuller understanding of the problems and opportunities on the route, as perceived by those that use it on a regular basis. Additional businesses were questioned on their growth aspirations and this information was used to estimate future problems that may arise as a result of growth. In addition to the specific workshop days, dialogue was maintained with key stakeholders throughout the duration of the study to ensure transparency and to allow them to assist in guiding the development of reasonable and acceptable transport improvement proposals which may address with problems they have identified.

#### **1.4 Stakeholder Engagement**

Two stakeholder consultation events were held in Elgin on 11 December 2014 and in Rothes on 12 December 2014. The following organisations attended:

- Aberlour Distillery Visitor Centre
- Chivas Whisky
- Diageo (Planning & Logistics)
- Edrington Group
- Forsyths
- Glen Grant Distillery
- Gordon & MacPhail
- Highlands & Islands Transport Partnership
- Keith & Dufftown Railway Association
- McPhersons Transport
- Moray Chamber of Commerce
- Moray Council
- Moray Economic Partnership
- Morrison Construction
- Northern Oils
- Robertson Group
- The Moray Council
- Walkers Shortbread

- Wm Grant & Sons Distillers

In addition to discussion at the events, a study specific questionnaire was issued to allow stakeholders an opportunity to provide more detail with regards their specific problem areas and perception of opportunities. The questionnaire was issued to stakeholder event attendees, as well as members of the Moray Chamber of Commerce mailing list to allow those unable to attend the meetings an opportunity to express their views.

Separate discussions were also held with Transport Scotland and BEAR Scotland in order to gain an understanding of their views on how the route currently operates and of any planned maintenance and improvement works.

The findings of all stakeholder consultation are included in Chapter 2.

## **1.5 Study Deliverables**

This A95 Route Action Study report, based on the STAG Pre-Appraisal methodology, is the main deliverable for the study. As this study is intended as a high level exercise it is envisaged that a further, detailed, appraisal stage will be required to fulfil the standard STAG methodology and this will form further deliverables should the client decide on this course of action.

## 2 Study Corridor

### 2.1 Introduction

This section of the report presents details of current conditions on the A95 route, from Granish to Keith. It identifies population trends along the route, the main economic activities around the route, the traffic and accident trends and any planned improvements which have been identified.

### 2.2 A95 Corridor

The A95 Trunk Road routes from the A9, just to the north of Aviemore in Highland, and runs in a generally north east direction for 74 km to a junction with the A96, just to the west of Keith in Moray; the route is identified in Figure 2.1 (a larger copy of this figure is included at Appendix A). The entire length of the A95 is part of the Scottish Trunk Road network and is maintained by BEAR Scotland.

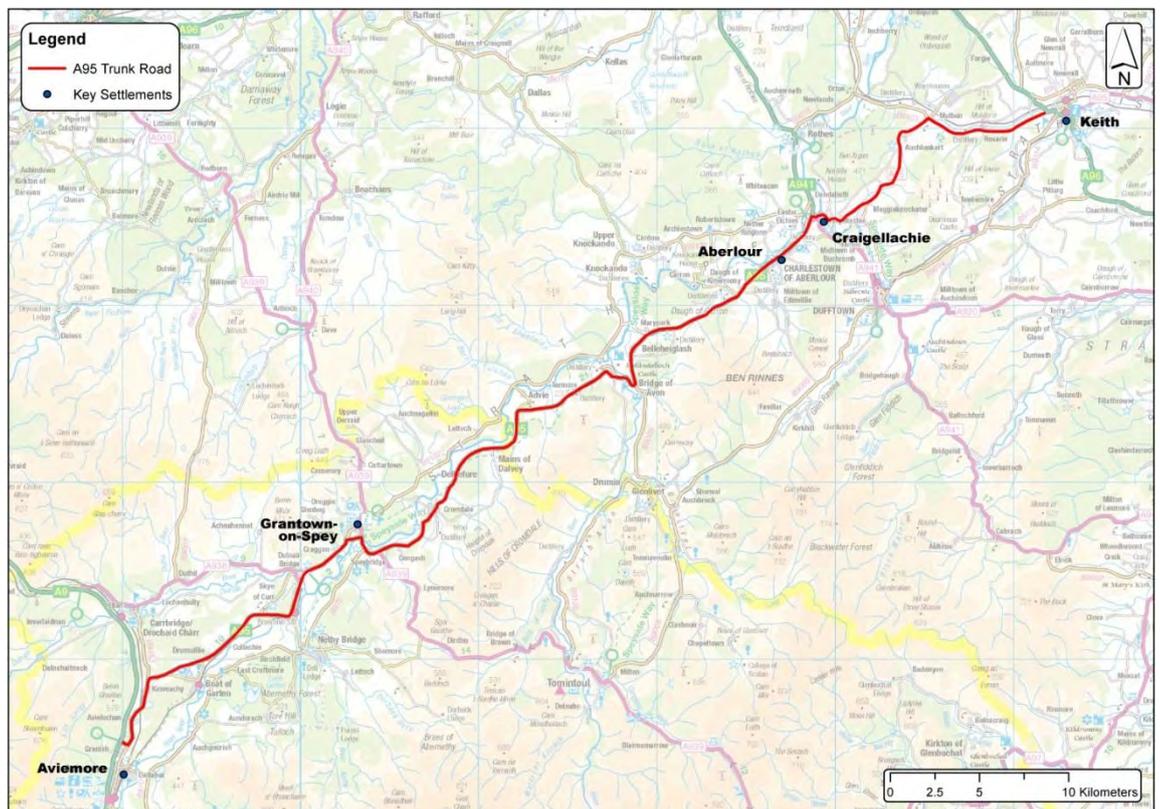


Figure 2.1 A95 Trunk Route

The A95 is a two lane single carriageway route of varying width and has sections with significant changes in horizontal alignment and meandering vertical alignment. There are two locations where one lane signal control is operated on bridges at Cromdale and Dalvey and a one lane priority controlled bridge operates at Balnellan.

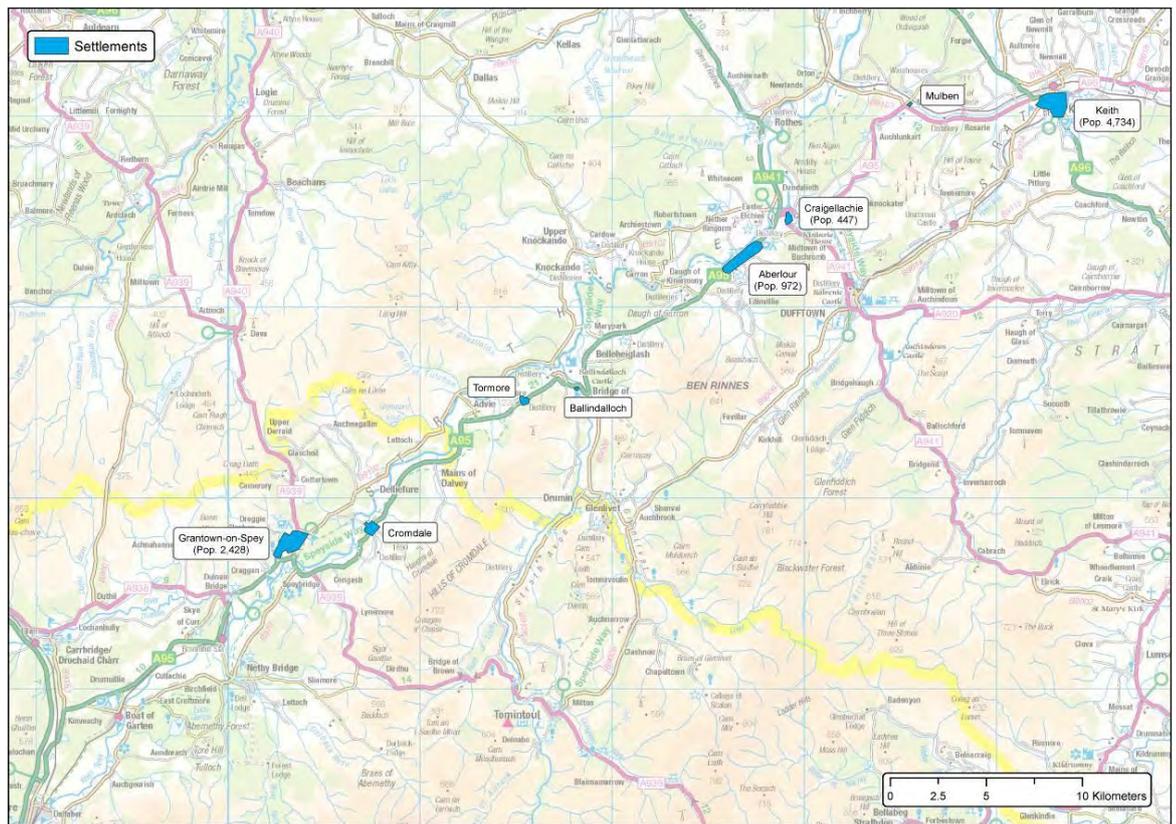
The principal towns on the route are Granttown-on-Spey, Aberlour, Craigellachie and Keith, it also serves Cromdale, Tormore, Ballindalloch and Mulben along with a

number of other smaller communities. As such, the A95 is the main link for residents within a number of settlements along its route but also for further population centres throughout the wider Moray and Highland areas.

Table 2.1 details the population of the larger settlements that are located directly along the route, as well areas either side of it, based on the Scotland Census 2011, and Figure 2.2 identifies main settlement boundaries (a larger copy of this figure is included at Appendix B).

Area	Population
Granttown-on-Spey	2,400
Charleston of Aberlour	1000
Keith	4,700
<b>A95 Corridor (including the above towns and output areas either side of the route)</b>	<b>11,700</b>

**Table 2.1 A95 Corridor Population (2011)**



**Figure 2.2 Settlements on the A95**

The population data highlights that the area is sparsely populated with a total population of over 11,000, spread over a 74km long corridor. It is clear therefore that the A95 provides a vital link for these residents, allowing them to access a range of services and employment. It also provides an important link between larger population centres such as Aviemore (3,600), Forres (12,600), via the A939/A940 and Elgin (23,100), via the A941; with a wider catchment area of around 50,000.

### 2.3 A95 Economy

The area around the A95 is synonymous with food and drink production, as well as tourism. The food and drink sector contributes almost a fifth (19%) of Moray's Gross Value Added (GVA), compared to a Scottish average of 3% and a UK average of just 2%<sup>1</sup>. Agriculture provides much employment and income to the area with production of barley, oats and poultry, in particular, major contributors to overall Scottish production. Large processed food manufacturers in the area include Baxters Food Group (Fochabers) and Walkers Shortbread (Aberlour and Elgin) who are also substantial employers. The whisky industry in Speyside, through the centre of which the A95 cuts, is famed internationally and the A95 corridor makes up a large section of the 'Malt Whisky Trail'. A number of international brand names are located either along the A95, or are specifically reliant upon it including, Glenfiddich, Macallan, Strathisla, Glenlivet (which has recently unveiled significant expansion plans), Benromach, Aberlour and Glenfarclas; further new Speyside distilleries, such as Dalmunach, will increase this number. Figure 2.3 overleaf provides an overview of the location of whisky distilleries in Scotland and the area.

The Scottish whisky industry is a significant contributor of taxes to the Exchequer, with approximately £1billion contributed<sup>2</sup>. In 2011 the Highlands and Islands Transport Partnership (HITRANS) commissioned a Whisky Logistics Study<sup>3</sup> which identified that 77 of the 99 active or licensed Scottish malt whisky distilleries were located in the HITRANS area and accounted for around 85% of all malt whisky produced in Scotland. The Speyside area is home to approximately half of these distilleries as well numerous other plants and facilities integral to the industry. This means the contribution of Speyside whisky to the Exchequer can conservatively be estimated at approximately £425 million. As stated previously, the majority of the whisky production in Speyside is located on or adjacent to the A95 corridor and as such the A9/A95 route was highlighted in the HITRANS study as being "the most important freight corridor for the industry" and it was estimated that almost 138,000 goods vehicle trips per year are made in the A95/A941 Speyside corridor.

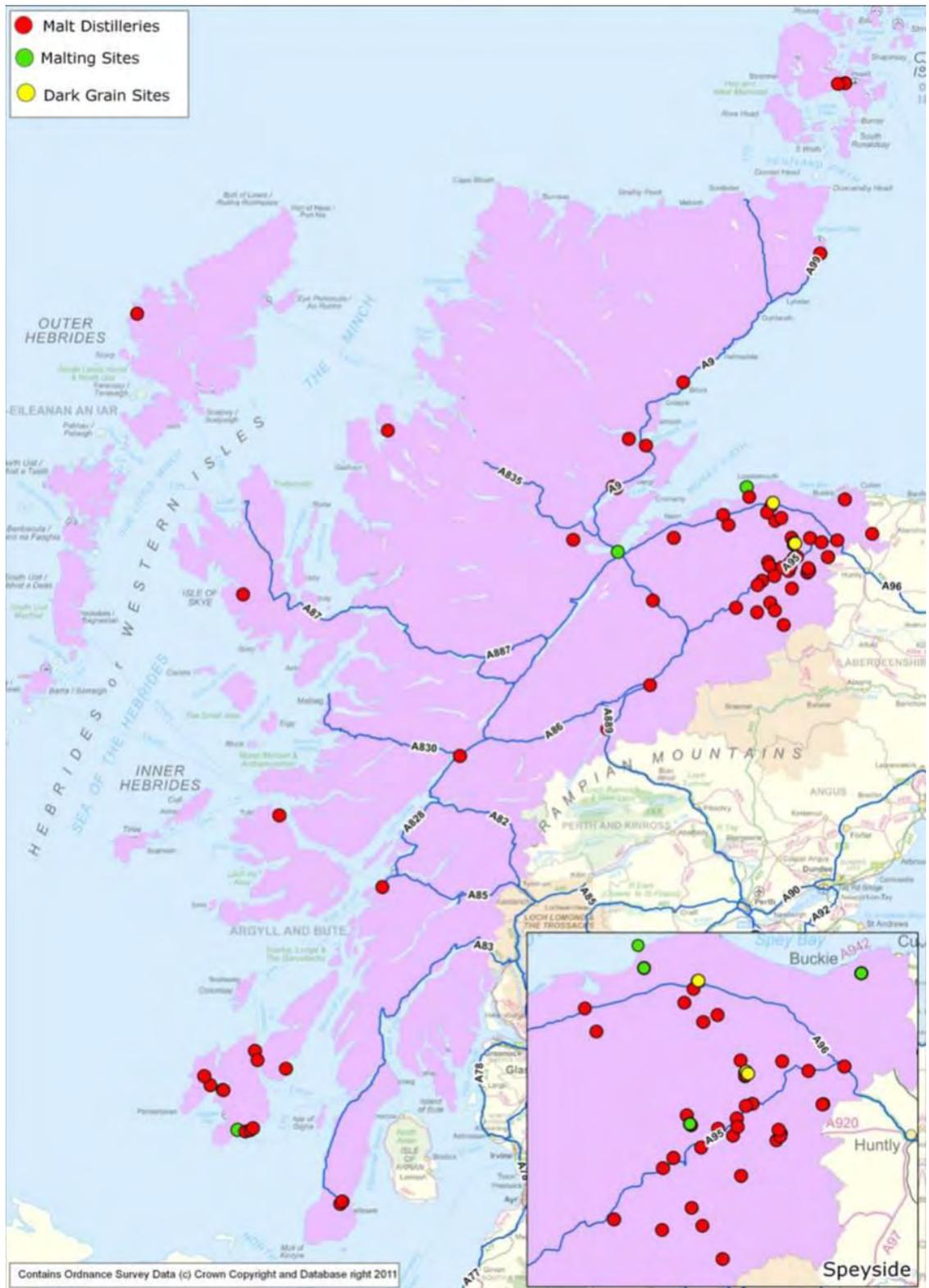


**Photograph 2.1 – Whisky Distillery on A95**

<sup>1</sup> Reference from HIE Area profile for Moray <http://forresarea.org/wp-content/uploads/2013/07/appx-3-HIE-area-profile-baseline-info.pdf>

<sup>2</sup> Reference from Scotch Whisky Association 'Facts & Figures' <http://www.scotch-whisky.org.uk/what-we-do/facts-figures/>

<sup>3</sup> HITRANS Spirit of the Highlands Whisky Logistics Study [http://www.hitrans.org.uk/documents/whisky\\_logistics\\_study.pdf](http://www.hitrans.org.uk/documents/whisky_logistics_study.pdf)



**Figure 2.3 Geographic Distribution of Distilleries, malting plants and dark grains facilities within the Hittans region. (Source: Hittans Whisky Logistics Study, 2011)**

As highlighted previously, Walkers Shortbread is a significant manufacturer and employer within in the area and is located in Aberlour, which is accessed by the A95. Walkers is a globally renowned brand and it's production has increased significantly over recent years having built a new factory in Aberlour and created in excess of 30 new jobs. As with local whisky producers, the company is a significant contributor to the public purse with annual turnover of the business in excess of £120million<sup>4</sup>.

As well as food and drink production there are a number of other industries that are important to the local economy including tourism (including activities such as winter sports, fishing, hill walking and mountain biking), forestry products (processed and unprocessed), textiles and specialised metalworking. These are cluster industries in which Moray has larger than average shares of global markets. Further to this, a number of additional industries have strong potential for significant growth in the area in the short term, most notably the renewable energy sector. With its coastal and mountainous location, and an established engineering capacity and expertise, the 'Moray Economic Strategy' has highlighted the area for significant potential to play a pivotal role in supporting Scotland's development of a world-leading and diversified renewable energy sector. There are already operational wind energy generation sites within the vicinity of the A95, such as Hill of Towie Wind Farm.

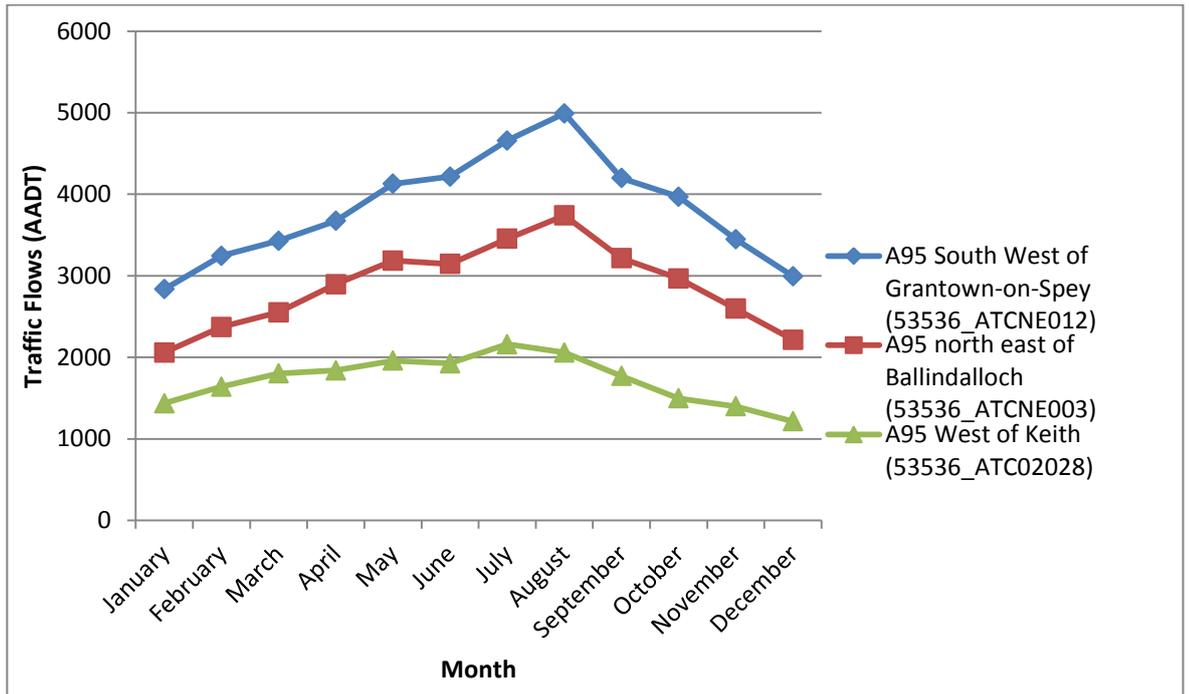
Finally, whilst not directly on the A95, Elgin is directly linked to it via the A941 and it is a main centre of population and business in Moray. Elgin has a population of approximately 23,000 and a concentration of retail, leisure and commercial business not widely available elsewhere locally making it a centre of the Moray economy. High quality connections between it and wider Moray / Speyside / Highland are therefore vital to maintaining an efficient and prosperous economy overall.

## **2.4 A95 Traffic Volumes**

Whilst traffic volumes on the route are relatively low for a main strategic link, with averages around 2,000-5,500 vehicles per day, volumes increase significantly on parts of the route during the summer months to around 7,500 per day. The route south of Grantown-on-Spey generally sees significantly higher volumes of traffic than the north with central section's being relatively low. The proportions of HGV traffic are, however, relatively high across the route with approximately 10-23% of traffic classified as HGVs; this compares to an average of approximately 5-8% HGVs across Scotland.

Detailed historic traffic count data is available for eleven locations along the route where Automatic Traffic Counters, belonging to Transport Scotland, are installed. Data from each counter was provided for use in this study by Transport Scotland through the Scottish Road Traffic database. This data was analysed and Figure 2.4 shows summary information across the year from three counter locations at south, central and north points on the route. A summary of Annual Average Daily Traffic (AADT) flows for all A95 counters is detailed in Table 2.2 and trends are displayed graphically in Figure 2.5 (a larger copy of this figure is included at Appendix C).

<sup>4</sup> Reference from Herald Scotland article 'Exports top £50m at Walkers Shortbread'  
<http://www.heraldscotland.com/business/company-news/exports-top-50m-at-walkers-shortbread.22319151>



**Figure 2.4 A95 Seasonal Variation in traffic AADT flows (2013)**

Location	Annual Average Daily Traffic	Annual Average Daily Traffic (August)
A95 Link to A9	3700	5000
A95 Granish (B9152) to Kinveachy (B9153)	5900	7800
A95 Kinveachy (B9153) to Boat of Garten	5100	6700
A95 Boat of Garten	3900	5100
A95 Dulnain Bridge	3800	5000
A95 Dulnain Bridge - Granttown	5700	7400
A95 Granttown on Spey Bypass	3000	4000
A95 A939 Bridge of Brown to Cromdale	2700	3500
A95 Ballindalloch	2200	3000
A95 Dowans Brae	2800	3700
A95 West of Keith	2000	2300

**Table 2.2 A95 Traffic Volumes (rounded to nearest 100 vehicles)**



**Figure 2.5 A95 AADT Flows**

As previously stated, traffic data specifically shows a pattern of varying demand along the A95 with relatively light traffic levels on central sections of the route which moderately increase towards the northern and southern ends but significantly increasing south of Granttown-on-Spey to the A9. There are sections within the route of particular increased traffic, including around Dulain Bridge and Granttown, highlighting the influence of industry around these areas. Traffic levels peak significantly around the summer months (August) across the route, clearly identifying the influence of tourism.

Analysis of historic trends across the A95 traffic counters shows relatively static levels of general traffic since 2009 but sustained growth in HGVs levels, up approximately 6% during this time to an average of 23% in locations.

## 2.5 A95 Public Transport

Whilst there are rail stations at either end of the A95, at Aviemore and Keith, the only rail service operating to areas within the A95 corridor is the Speyside Railway. This Railway runs 16km between Aviemore and Broomhill only and is intended more as a tourist attraction rather than a provider of regular public transport, operating up to 3 services per day during the peak summer months.

Public transport within the A95 corridor therefore effectively consists exclusively of bus services, typically provided by Stagecoach Highland. Bus services generally operate towards the ends of the A95 corridor, i.e. between Aviemore and Granttown-on-Spey and between Dufftown and Elgin, and there are no services at present which directly connect Aviemore with Keith or Elgin.

## **2.6 A95 Planned Improvements**

Whilst Transport Scotland's Strategic Transport Projects Review (STPR), published in 2008, did not specifically identify the A95 for significant investment it did set out a commitment for some small targeted interventions through the maintenance company, BEAR Scotland, aimed at bringing sections of the A95 up to an improved standard. BEAR Scotland provided background information on three studies undertaken between 2006 and 2008 outlining targeted improvements for the A95. A 2006 study 'A95/A96 Keith Junction Improvement Feasibility Report' summarised that the A95/A96 Keith junction had sub-standard horizontal alignment, poor visibility, poor drainage and that driver safety was an issue. As a result there have been a number of improvements to surfacing, skid resistance, road markings, studs and drainage.

A 2007 study 'A95/A941 Junctions Re-signing Feasibility Study' concluded that, at the time, most road signs located along the A95 were outdated and not to current design standards. The majority of signs did not have safety barrier protection and also driver confusion was considered to be an issue at certain junctions, i.e. the A941 Dufftown junction, regarding the correct direction to take. Lack of continuity of destinations on direction signs was also identified. The recommendations set out in the report were to install new signs that comply with current standards, including the implementations of new 'Passively Safe' signposts and also the removal of existing signs and posts that are inappropriate or unnecessary.

In 2008 a study was undertaken titled 'A95 Bends Treatment Review' investigating issues with several bends along the A95 route. It noted that the majority of road signs and posts located on bends were limited with a number of road markings absent and in some instances signs did not distinguish more severe bends. Skid resistant surfacing was noted as not present on a number of bends; however it was acknowledged that this treatment is not essential on all corners. The recommendations of the study were that priority should be given to the bends with known accident history or where the signs and road markings differ from APG E115 recommendations. It was recommended that works such as the repainting of road markings could be incorporated into the routine maintenance regime.

Discussions with Transport Scotland highlighted more recent improvements / works planned for the A95 including the Lackghie carriageway realignment and Gaich to Craggan carriageway realignment. The Lackghie works will consist of a 2km realigned section of carriageway which will improve forward visibility, ride quality and drainage. The Gaich to Craggan works are proposed to facilitate upgrades to the Strathspey to Grantown-on-Spey railway by providing a road bridge structure to cross the proposed alignment and are unlikely to material change conditions on the A95 at this location.

Transport Scotland confirmed that, at present, these form the complete package of planned works for the A95, other than routine ongoing maintenance. It was noted that ongoing maintenance would continue to, where appropriate, widen sections of the carriageway in an attempt to gradually bring it towards appropriate DMRB standards. It was also noted that the Transport Scotland Road Safety Team were currently undertaking an Accident and Actions study for the A95, however at November 2015 the complete findings of this study had not been published yet.

## 2.7 Summary

The A95 is clearly an important local and strategic road and this recognised by its status as a trunk road. It provides a vital function to many industries and acts as a main link for approximately 12,000 residents, allowing them to access employment and services, tourists to reach the many desirable locations around it and businesses to import and export goods locally, nationally and internationally. It also acts as a principal link between two important population and employment centres towards either end of it, Elgin and Aviemore, which have combined populations of approximately 27,000 people.

The economic contribution of the area around the A95 is significant. The main employment and revenue generating industries include the food and drink sectors - agricultural, processed food production and distilling; whisky production from the area around the A95 contributes around £425 million to the exchequer. Tourism, timber production and wind energy are also significant contributors to both the local and national economies.

Traffic volumes on the A95 are relatively low for a main strategic link (2,000-5,500 vehicles per day, 7,500 per day during the summer months) but the proportion of HGVs is high, averaging 10-23% (compared to an average national proportion of 5-8%); highlighting the significance of industry along the route.

Whilst public transport options are available on the route, between some settlements, there is a lack of 'end to end' provision linking the main towns of Aviemore, Elgin and Keith.

Transport Scotland has acknowledged actions need to be taken to improve the standard of the A95 and as such are undertaking targeted carriageway improvements. These actions are relatively small scale in nature and will mainly be implemented alongside routine maintenance works.

## **3 Analysis of Problems and Opportunities**

### **3.1 Introduction**

This section of the pre-appraisal process identifies the overarching problems and opportunities identified within the transport and land-use system. It is the main starting point for any study conducted in accordance with STAG and is an essential part of the process used to inform the objective setting process (see Chapter 4).

Consideration has been given to both existing and potential future problems and opportunities that may arise. Identification of these was mainly informed by discussions with stakeholders who use the route on a regular basis and therefore should be seen as a reliable source of information from a user's perspective. Where possible issues raised have also been supported and informed through use of more standard desktop techniques such as analysis of traffic flows and accident data. Wherever reasonably practical, attempts have been made to quantify problems in order to gauge their scale and to assist in defining appropriate options as part of the established transport planning objectives.

### **3.2 Problems and Constraints**

#### **3.2.1 Road Width and Alignment**

The width of the A95 was highlighted as a problem by the majority of stakeholders consulted and was also noted as a problem within BEAR Scotland's aforementioned reviews of route. It was stated by many stakeholders that the main reason for road width being a pertinent issue on the A95 was the high proportion of HGVs requiring greater road space than sometimes available. To be in full accordance with the DMRB, a 60mph single carriageway route should typically have a minimum width of 7.3m; however, for much of its length, the A95 is approximately 6m wide, 3m in each direction. It was claimed that sections of 6m road width are very difficult to negotiate for two large oncoming HGVs, an issue that is exacerbated by the high HGV numbers on the A95.

A large number of stakeholders across the engagement events identified the narrow road width as a major cause of vehicle accidents / incidents. The majority of these stakeholders were representatives from the food and drink industries, which have a strong presence in the area and are integral to the local economy, and the haulage companies that serve them. They provided anecdotal evidence of non-injury, non-reported vehicle accidents that they directly attributed to the narrow road width. It was claimed that sections are not wide enough for two HGVs to pass at without significantly slowing down, particularly to the south of Tormore, and one haulage company estimated that they lose at least one set of HGV wing mirrors per week due to collisions caused as a result of lack of road space. It was stated that the cost of replacing one set of HGV wing mirrors is approximately £350 and that the annual bill to just this one company alone is approximately £18,000.

A number of stakeholders also stated that vehicles, generally HGVs, regularly run off the road onto the verge, another occurrence attributed to narrow road width. This occurrence is also noted in a BEAR Scotland report<sup>5</sup> and also in the HITRANS

<sup>5</sup> Mention in A95-A96 Keith Junction Report Final, Nov 2006

Whisky Logistics Study, which reports that soft verges along the route result in regular vehicle 'rollovers'. In general these accidents / incidents are non-injury and are as such not always reported, they do however create delays and costs to businesses affected by the incidents. Over-running can create further issues with vehicle tracks causing moisture egress from the verges to the carriageway sub-base, resulting in cracking and breakup and leading to maintenance issues for BEAR Scotland.



**Photograph 3.1 - HGVs passing on A95**



**Photograph 3.2 – Example of carriageway over-running on A95**

The vertical and horizontal alignments of the A95 are also considered an issue; they are meandering in parts and are below current design standards. A Transport Scotland / BEAR report stated that “the route has numerous bends, of which a significant number are below standard”<sup>6</sup>. The study recommends several sections for high friction surfacing to reduce accident occurrences and improve safety however it is understood that there are no further plans to improve the alignment along the route other than those reported in Section 2.6.



**Photograph 3.3 – Example of significant horizontal change on the A95**

### 3.2.2 Safety

#### Accident Rates

Several stakeholders identified concerns relating to the number of accidents on the A95 and as such accident statistics were analysed in detail. This analysis identified that the accident rate along the A95 is not excessively high overall, when compared with other similar routes nationally. There are, however, isolated sections that are considered to have a relatively poor accident record and indeed have been targeted for safety improvements by Transport Scotland and BEAR, as outlined later.

The accident statistics for the A95 route, provided by Transport Scotland for the period 1 January 2009 to 31 December 2013 inclusive, highlight that during this period there were a total of 81 recorded accidents between Aviemore and Keith, the majority of which were categorised as ‘slight’ (~75%). A detailed breakdown of accident severity and year of occurrence is provided in Table 3.1 and Figure 3.1 presents the location of those accidents classified as slight (green), serious (orange), or fatal (red) (a larger copy of this figure is included at Appendix D).

<sup>6</sup> Reference from Transport Scotland / BEAR ‘A95 Treatment Review’ June 2008

Year	Fatal	Serious	Slight	Total
2009	1	5	14	20
2010	0	1	9	10
2011	0	3	10	13
2012	0	8	17	25
2013	0	3	10	13
<b>Total</b>	<b>1</b>	<b>20</b>	<b>60</b>	<b>81</b>

**Table 3.1 Five Year Accident Severity Statistics for A95**



**Figure 3.1 Accident Locations on the A95**

Whilst analysis of the accident trends along the A95 suggests rates are not exceptionally high overall, compared to other similar routes, there are sections of the route that are considered to have a relatively poor accident record in isolation. Transport Scotland is currently undertaking a safety review of the route ‘A95 Granish – Keith Trunk Road’ which splits the A95 trunk road into 19 sections and investigates safety by considering road type, local context, historic accident rates, vehicle speeds and potential mitigation measures on each link. At the time of writing full recommendations of the study were not publically available but it is understood that the majority of mitigation measures will generally be limited to reductions in signed speed limit on isolated sections only.

The information available does identify that, for all sections of the A95 between Aviemore and Keith, the accident rate averaged approximately 19.6 accidents per

100 Million Vehicle Kilometres with individual sections ranging from 0 to 36.20<sup>7</sup>. To put this into context the national average for all severity type accidents on non-built-up trunk A roads, between 2009 and 2013, was 11.93 accidents per 100 Million Vehicle Kilometres<sup>8</sup>.

Further analysis of the A95 accident statistics for the causes of accidents highlighted that, whilst accident numbers appear to remain fairly consistent throughout the year, there is a slight decline during the summer months between June and August (when traffic flows are at their highest) and again within December. These figures, coupled with the fact that 67% of all accidents that occurred over a five year period happened in 'fine' conditions 'without high winds', imply that poor weather is not a primary factor in accidents along this route.

Only 26% of accidents occurred within 20 metres of a junction and the records appear to suggest that the majority of accidents occur in higher speed sections and at bends: just over 90% of accidents happen within signed 60mph sections of the A95. The BEAR Scotland 'A95 Granish to Keith Whole Route Safety Review' appears to conclude the same, stating that "a discernible pattern of accidents exists on the A95 throughout its entirety, this being the frequency whereby single vehicles left the carriageway at bends".

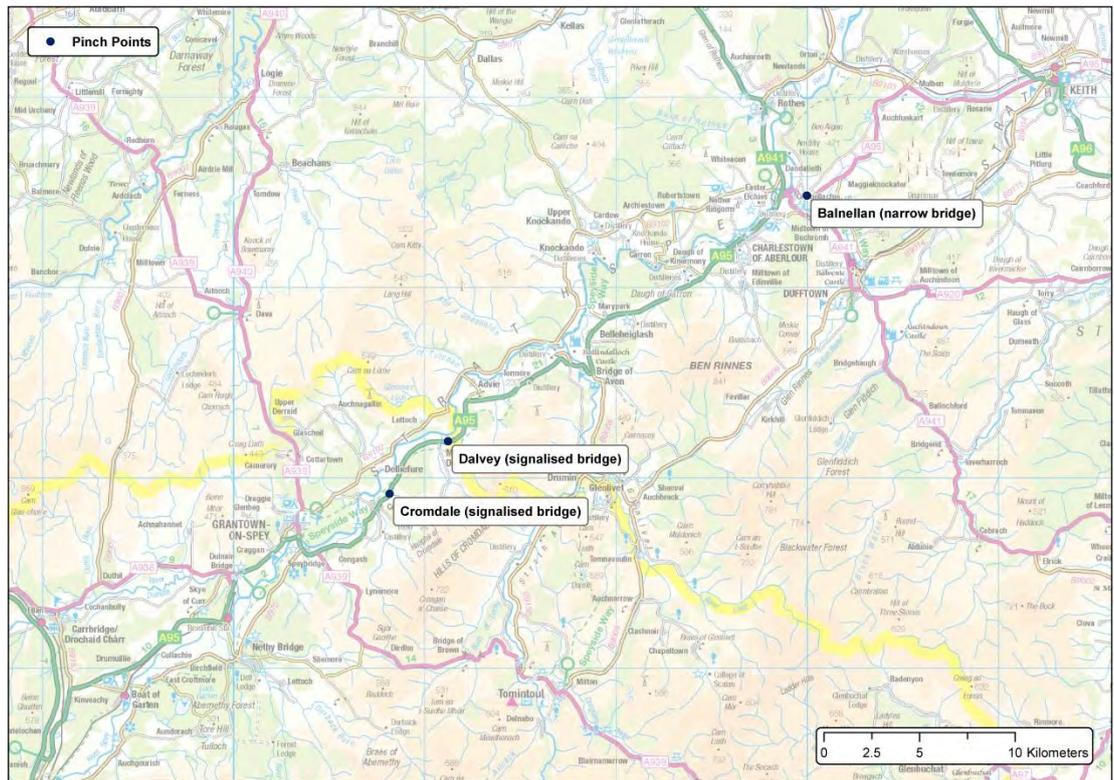
### 3.2.3 Journey Times

There was a clear perception amongst stakeholders that unreliable journey times are an issue on the A95, for both business and general travel. Several stakeholders commented that they often avoid the A95 due to the presence of a high number of slow moving HGVs that can lead to poor journey time reliability, lack of overtaking opportunities exasperate this. Some business stakeholders explained that they often only use the A95 between the A9 and Grantown-on-Spey, before diverting onto the A939/A940 to/from Forres for other Moray destinations, including Elgin, because of the slow journey times to their destination via the A95, and A941 to Elgin. In addition several stakeholders stated that they were considering diverting their business travel away from the A95 and onto the A96 / A90 upon completion of the Aberdeen Western Peripheral route (AWPR). It was stated that, as the AWPR is scheduled for completion a number of years prior to the completion of the A9 dualling, journeys via the A96 / AWPR / A90 may be quicker than via the A95 / A9 for trips south towards central Scotland. This would clearly result in the potential for additional traffic on the A96, currently a single carriageway route along much of its length, which may be undesirable and could lead to a loss of income to businesses located along the A95.

A further cause of the journey time problems on the A95 identified by stakeholders, particularly hauliers, was that there are several pinch points on the route – most notably the signal controlled bridges at Cromdale and Mains of Dalvey but also Balnellan Bridge, at Craigellachie, which narrow to such an extent that only one stream of traffic can pass at a time. These pinch point locations are shown in Figure 3.2 (a larger copy of this figure is included at Appendix E).

<sup>7</sup> Reference from Transport Scotland A95 Granish – Keith Trunk Road Accident Study: <http://www.transportscotland.gov.uk/a95-granish-%E2%80%93-keith-trunk-road>

<sup>8</sup> Reported Road Casualties Scotland 2013 <http://www.transportscotland.gov.uk/statistics/j340611-13.htm>



**Figure 3.2 A95 Pinch Points**

The pinch points increase both journey times and fuel consumption as a result of stop-starting. One haulage industry stakeholder estimated that on a motorway their HGVs achieve, on average, 8 - 9 miles per gallon and 7 - 8 mpg on the A9, whilst on the A95 fuel economy drops to approximately 5 – 6 mpg. With the removal of the pinch points, it was estimated that HGVs could achieve approximately 7 mpg on the A95. As has been previously stated, HGV traffic makes up approximately 10-20% of the traffic flows on the A95 and therefore any improvement in their fuel consumption could lead to substantial financial savings to local industry and environment benefits to the local area as result of lower vehicle emissions.

At the time of research the indicative freight trade fuel price for diesel was 91.05p per litre<sup>9</sup>, a gallon of fuel therefore costs approximately £4.14. Over the 57km section of the A95 between Granish and Craigellachie an increase in fuel efficiency amongst HGVs from 5mpg to 7mpg would equate to a financial saving of approximately £8.30 per trip. Whilst these savings may appear to be relatively small in isolation the whisky industry alone creates approximately 138,000 HGV trips on the A95 per year<sup>10</sup> and so the fuel saving for each vehicle could therefore result in an overall saving of approximately £1,142,000 per year, across the whisky industry. As stated these savings would be on whisky related HGV travel only and reduced fuel consumption on all A95 vehicle movements, even if only slight when applied to lighter vehicles, would significantly increase the fuel saving overall. The improvements in fuel efficiency would also significantly reduce emissions on the route as well.

<sup>9</sup> Freight Transport Association 'Daily Fuel Prices' 05/02/15

[http://www.fta.co.uk/policy\\_and\\_compliance/fuel\\_prices\\_and\\_economy/fuel\\_prices/daily\\_fuel\\_prices.html](http://www.fta.co.uk/policy_and_compliance/fuel_prices_and_economy/fuel_prices/daily_fuel_prices.html)

<sup>10</sup> HITRANS Spirit of the Highlands Whisky Logistics Study [http://www.hitrans.org.uk/documents/whisky\\_logistics\\_study.pdf](http://www.hitrans.org.uk/documents/whisky_logistics_study.pdf)



**Photograph 3.3 – A95 Pinch Point at Cromdale**



**Photograph 3.4 – A95 Pinch Point at Dalvey**

### 3.2.4 Driver Frustration / Experience

Driver frustration has traditionally been difficult to quantify, as acknowledged by Transport Scotland who recently commissioned research into the factors affecting it. This research was undertaken in order to inform appraisals of the A9 and A96 which have recommended dualling of these routes as a means of improving safety by reducing accident occurrences, severity and levels of driver stress. The research directly linked driver frustration to a combination of factors such as speed, platoon length and journey time.

Driver frustration was a particular problem identified by stakeholders for the A95; this was mainly attributed to narrow road width and twisting geometry, which it was stated results in few opportunities for safe overtaking. It was also stated that this is an issue exacerbated by the high proportion of HGVs as these struggle to negotiate its narrow width, and the time taken to increase speeds following stop-starting at pinch points. Vehicle platooning regularly occurs on the A95, exacerbated by the presence of the pinch points, narrow road widths and twisting geometries. All of these factors may act to lengthen platoons and journey times and therefore increase driver frustration because of limited passing opportunities to clear platoons. It was stated that the lack of passing opportunities was as a result of limited straight sections on the A95 which increases the potential for risk taking; potentially resulting in unsafe passing manoeuvres which in turn can lead to crashes.

A tourist industry stakeholder added that driver experience is hampered by driver frustration, highlighting numerous incidences when tourists had expressed frustration associated with slow moving traffic when using the A95 as part of their trip to the area. Tourism is a significant contributor to the local economy and there is a desire amongst stakeholders to remove as many potential barriers as possible to promote future growth. The Moray Transport Interventions Report (2011) also identifies this issue stating “there is a need for larger vehicles to slow on approach to sections of carriageway with variable road alignment, gradients, radii or road width. This results in increased journey times for these vehicles and others behind them. The first view most visitors to Moray see, if they approach by road from the south, is the rather tortuous and narrow A95 route north from Aviemore. This results in a very poor gateway for Moray tourism” and further “the level of slow moving HGV and agricultural traffic and the lack of suitable locations to pass these vehicles, particularly on the A95 and A96, can lead to driver frustration and increased accidents.”<sup>11</sup>

### 3.2.5 Public Transport

It was highlighted by stakeholders that public transport journey times from Central Scotland to Moray are significantly longer than a comparable journey by car, principally as result of there being no direct public transport service, either via bus or rail, between Moray and the Central Belt. This represents a significant barrier to public transport use for journeys to Moray. The main town in Moray, Elgin, is linked by two rail journeys to the central belt although has a journey time of approximately 4 hours 40 minutes (services vary between 4 hours 17 minutes and 5 hours 6 minutes) and involves at least one change at either Inverness or Aberdeen, the equivalent journey by car (via the A95) takes under 4 hours.

<sup>11</sup> Areas for Transport Investment in Moray [http://www.hitrans.org.uk/Documents/Moray\\_Transport\\_Interventions\\_Study\\_-\\_Report.pdf](http://www.hitrans.org.uk/Documents/Moray_Transport_Interventions_Study_-_Report.pdf)

Locally there is no direct public transport link between Keith and Aviemore; as identified previously there are a few local bus services that use the A95 but none that utilise the full route. As an example of why this may be an issue, a resident of Aberlour who works in Grantown-on-Spey, or vice versa, cannot access their employment via one public transport service. Indeed they would require a minimum of two bus connections and one rail connection, with a minimum journey time of approximately 3 hours and 45 minutes between their origin and destination, the journey by car would take under 35 minutes. Current public transport provision on the A95 may therefore be seen as a significant barrier to sustainable travel.

There is the potential that the current standard of the A95, in terms of narrow width, meandering alignment and pinch points, make the provision of end to end public transport services on the A95 unattractive to operators.

### **3.2.6 Maintenance**

Anecdotal evidence was provided by stakeholders in relation to the condition of A95 surfacing. A number of representatives stated that road maintenance was sub-standard and that, as a consequence of this, there were high maintenance costs for, in particular, haulage operators in maintaining / repairing vehicle wheels and suspensions in particular.

Discussions with BEAR and Transport Scotland highlighted instances of ongoing drainage issues at points on the A95 and associated areas of carriageway breakup. It was, however, further stated that the A95 route is considered to be maintained to an acceptable level and that maintenance is conducted to appropriate specifications.



**Photograph 3.5 – A95 Carriageway Breakup**



**Photograph 3.6 – A95 Route Maintenance**

### **3.2.7 Economy**

The aforementioned Moray Transport Interventions Study stated that although the A95 was not recognised as being strategically important in the STPR (and so justifying significant investment), it provides the only direct route to the A9 from Moray and therefore is of particular importance with regards to maintaining and developing the regional economy, as stated stakeholders also identified concerns that the A95 could act as a constraint to local business development. The following provides a summary of the main issues in the Moray economy and then a summary of business activities that stakeholders stated may be constrained by the A95.

The Moray Economic Strategy (2012) firstly sets out a list of issues and challenges which are facing the economy of the area. These are:

- *Elgin (linked to the rest of Speyside by the A95) is underperforming in its role as the primary engine of Moray’s economy.*
- *Concentration in the food and drink sectors: while it comprises a strong manufacturing sector and some world leading brands, levels of pay are traditionally low.*
- *A high concentration of employment in the public sector, including defence.*
- *A relatively low proportion of graduates in the Moray workplace.*
- *The need for diversification into higher value economic sectors: despite high employment average wage levels lag 14% behind the rest of Scotland.*
- *Higher than average levels of economic activity, employment and self-employment and low unemployment masked by high levels of outmigration, the population of young people is relatively low and almost three quarters of those brought up in the area leave, often for work or education opportunities elsewhere.*
- *The labour market is relatively tight: the availability of labour and appropriate skills are critical issues to businesses wishing to expand or locate in an area.*
- *Employment land availability is limited across all of Moray’s key settlements, potentially constraining business expansion and inward investment.*

- *The visibility and value of Moray’s tourism offer: while the appeal of the whisky sector and the area’s landscape assets are clear, the sector underperforms. Other aspects of visitor infrastructure, accommodation, food, drink, retail, interpretation and other facilities need to be further developed to raise Moray’s visitor profile.*
- *An increasing outflow of residents’ retail and leisure spending to centres neighbouring Moray: investment in retail, leisure and civic infrastructure has not kept pace with Inverness and Aberdeen in particular.*
- *Perceived remoteness relative to the strategic road and rail network and key markets, and concerns over the capacity of broadband infrastructure.*

Although not necessarily a primary cause of the challenges detailed above, the A95 is crucial to many of them.

According to the latest annual figures published as Scottish Annual Business Statistics<sup>12</sup> Moray Council is currently the largest contributor to the Scottish food and drink manufacturing sector; the industry provided 13.3% GVA in Moray, followed by 11% in North Lanarkshire and 9.8% in Glasgow City. This is not a one off occurrence as Moray has been amongst the top two local authority areas each year since 2008. It is therefore clear just how pivotal the food and drink manufacturing sector is to the Moray economy and so the following investigates the food and drink, and timber industries, in particular as they are heavily reliant on the road network, in particular the A95.

**The Whisky Industry**

Speyside is famous worldwide for its whisky production. The whisky industry makes up a substantial part of the local economy around the A95, both in terms of employment and tourism. The industry directly employs around 10,000 workers and supports an additional 35,000 jobs in Scotland<sup>13</sup>.

Industry production has been growing steadily over the past few decades as shown in Table 3.2:

Year	Malt	Yearly % change	TOTAL (malt and grain)	Yearly % change
1982	96,649,000		247,670,000	
1983	93,398,000	-3 %	239,081,000	-3 %
1984	99,540,000	7 %	253,448,000	6 %
1985	104,803,000	5 %	260,580,000	3 %
1986	103,823,000	-1 %	264,947,000	2 %
1987	115,974,000	12 %	289,693,000	9 %
1988	138,041,000	19 %	329,938,000	14 %
1989	167,187,000	21 %	385,481,000	17 %
1990	192,823,000	15 %	428,762,000	11 %
1991	186,265,957	-3 %	416,800,900	-3 %
1992	166,491,138	-11 %	383,466,327	-8 %

Year	Malt	Yearly % change	TOTAL (malt and grain)	Yearly % change
1998	184,615,185	-4 %	442,150,917	-6 %
1999	159,553,570	-14 %	395,047,177	-11 %
2000	140,600,602	-12 %	345,899,865	-12 %
2001	139,661,253	-1 %	347,332,259	0 %
2002	151,346,366	8 %	370,796,654	7 %
2003	146,691,064	-3 %	375,413,290	1 %
2004	143,809,718	-2 %	357,999,557	-5 %
2005	156,184,682	9 %	388,826,942	9 %
2006	167,908,141	8 %	429,452,908	10 %
2007	201,029,856	20 %	495,275,353	15 %
2008	225,198,949	12 %	524,009,191	6 %

<sup>12</sup> Scottish Annual Business Statistics <http://www.scotland.gov.uk/Topics/Statistics/Browse/Business/SABS>

<sup>13</sup> HITRANS Spirit of the Highlands Whisky Logistics Study [http://www.hitrans.org.uk/documents/whisky\\_logistics\\_study.pdf](http://www.hitrans.org.uk/documents/whisky_logistics_study.pdf)

Year	Malt	Yearly % change	TOTAL (malt and grain)	Yearly % change
1993	140,942,181	-15 %	351,178,140	-8 %
1994	146,424,242	4 %	354,914,012	1 %
1995	158,079,324	8 %	394,238,447	11 %
1996	170,135,855	8 %	429,101,440	9 %
1997	192,980,001	13 %	470,866,387	10 %

Year	Malt	Yearly % change	TOTAL (malt and grain)	Yearly % change
2009	208,836,536	-7 %	458,154,925	-13 %
2010	191,451,693	-8 %	429,139,353	-6 %
2011	227,492,175	19 %	517,922,206	21 %
2012	254,760,501	12 %	-	
2013	274,784,185	8 %	-	

**Table 3.2 Scotch Whisky Production 1982 – 2013 (Scotch Whisky Association 2013 Statistical Report)**

In total, from 1982 to 2013, malt whisky production increased by 184% and grain production, from 1982 to 2011, increased by 109%. Exports of Scotch whisky have also been steadily increasing, with an increase of 37% in volume from 1982 to 2013. In terms of revenues, there has been a 389% increase from £871 million in 1982 to £4,260 million in 2013. Studies have predicted, and a number of key stakeholders from the whisky industry expect, this growth trend to continue for the foreseeable future.

The HITRANS whisky study found that at present, the current level of whisky production creates around 138,000 vehicle trips on the A95, but if distilleries around it were to increase production to 100% of their current capacity (from just below 80% at present) vehicle trips would increase to approximately 172,000.

The A95 corridor makes up a large section of the Malt Whisky Trail, and includes international brand names such as Glenfiddich, Macallan, Strathisla, Glenlivet, Benromach, Aberlour and Glenfarclas. It is estimated that the whisky industry contributes around £2.7 billion of Gross Value Added to the Scottish economy<sup>14</sup>, excluding its contribution to the tourist industry.

Considering the figures above, predicted growth of the whisky industry will have considerable implications on the transport network, such as increased road mileage and associated congestion.

**The Food Industry**

The food production industry is also a significant contributor to the economy around the A95, food production companies such as Walkers Shortbread, make an estimated 3,600 HGV trips per annum along the A95 with finished produce. Additionally, all raw materials (butter, flour and packaging) are mainly sourced from outwith Speyside and therefore it is expected a similar number of inbound HGV trips go to Walkers. Walkers currently employ approximately 800+ staff, many of whom are bussed to the production site in Aberlour.

**The Timber Industry**

There is potential for strong growth in the timber industry in Moray and the A95 is one of the main vehicular routes used by the Grampian Timber Transport Group

<sup>14</sup> The Economic Impact of Whisky Production in Scotland <http://www.scotch-whisky.org.uk/media/16623/economicimpactreportmay2010.pdf>

(GTTG); the GTTG is one of 7 Regional Timber Transport Groups in Scotland and covers the areas of Aberdeenshire and Moray. Collectively Moray and Aberdeenshire comprise 21% woodland cover; 7% under public ownership and 14% in private ownership and a large number of forestry blocks and local businesses are served by the A95, either directly or indirectly. In addition to areas of forest and individual woodland blocks, a number of major timber processing destinations are located either along the A95 itself (e.g. BSW Timber Ltd at Boat of Garten and Speymouth Biomass CHP at Craigellachie (under construction)) or use the road to transport raw materials and timber products to / from their sites (e.g. James Jones & Son, Mosstodloch, Gordon Timber, Nairn and Norbord, Inverness) from / to a wide variety of different harvesting sites/customers.

The Forestry Commission has provided information on timber production forecasts which indicates that the average annual timber availability in Moray is set to increase from 500,000m<sup>3</sup> during 2015 – 2019 to a peak of 599,000m<sup>3</sup> during 2020 – 2024. Whilst it is the case that not all the available timber will necessarily be harvested and subsequently travel on the public road network, or be transported along the A95, the increase in availability provides an indication of potential growth in the sector in the short-medium term.

HITRANS previously commissioned a study<sup>15</sup> to gain an understanding of the number of HGVs operating in the Highland Timber Transport Group specifically and this identified “the daily total timber volume hauled was approximately 7,500 tonnes with a value at the processor gate of £225,000. This suggests an estimated annual throughput of over 1.5 million tonnes with a gate value of some £50 million.” As part of the study traffic counters were positioned at various points on various routes, on 12th and 20th March 2013, to record daily timber lorry movements and the following information on maximum movements on the A95 were recorded:

- A95: Grantown Junction – Craigellachie: 28 HGVs (20/03/13)
- A95: Dulnain Bridge Junction - Grantown Junction: 34 HGVs (20/03/13)
- A95: Boat of Garten Junction – Dulnainin Junction: 33 HGVs (20/03/13)
- A95: Carrbridge Junction - A9 Junction (South): 52 HGVs (12/03/13)
- A95: Carrbridge Junction - Boat of Garten Junction: 34 HGVs (20/03/13)
- A95: Aviemore - Carrbridge Junction: 30 HGVs (20/03/13)

<sup>15</sup> UPSTICKS: Timber Transport Study [http://www.hitrans.org.uk/documents/UPSTICKS\\_-\\_Timber\\_Transport\\_Study.pdf](http://www.hitrans.org.uk/documents/UPSTICKS_-_Timber_Transport_Study.pdf)

### 3.2.8 Summary

In summary, therefore, problems associated with the A95 identified by this study are identified below in Table 3.3:

Problem	Description
1	Road width contributes to vehicles overrunning the carriageway
2	Road width contributes to HGV collisions
3	Road alignment contributes to increased accident risk
4	Pinch points result in reduced journey time reliability
5	Pinch points result in reduced fuel economy
6	Lack of overtaking opportunities may contribute to accidents
7	Lack of overtaking opportunities contribute to driver frustration / experience
8	Lack of route long public transport opportunities results in reduced mode choice availability
9	Road maintenance issues results in increased maintenance costs for motorists
10	Combined problems on A95 constrains future business development in the area

**Table 3.3 Summary of Problems**

### 3.3 Opportunities

Moray’s population increased by 1.6% from 92,910 to 94,350 between mid-2012 and mid-2013 compared to the national average rise over the same period of just 0.3%. Additionally there has been significant expansion in the whisky industry over recent years and this trend is continuing. Moray has a growing economy and will require suitable access to and from the south in order to maintain this level of attractiveness.

In addition to helping to alleviate some of the problems outlined in the previous section, improvements to the A95 could also open up the Speyside and Moray area to a number of opportunities. These opportunities can be summarised as:

Opportunity	Description
1	Provide opportunities to facilitate growth of the food and drink industry
2	Promote the tourist industry by improving accessibility to the area
3	Increase multimodal travel options for residents living around the A95
4	Increase the perception of safety on the route

Improvements to the route would also potentially increase the feasibility of direct coach services to operate from Elgin (population 25,700) via either Forres

(population 8,967) or Aberlour allowing a significant population to be better served than at present. These could in turn connect into the full range of the coach operations through Aviemore and therefore offer an attractive alternative to the private car or the train (which requires interchange at Inverness or Aberdeen for an extended and comparatively expensive journey) for journeys to the central belt. In time such services could help cement improved public transport links for the whole of Moray that could develop through organic growth.

### **3.4 Constraints**

Despite the fact that the rural context of the area around the A95 is its major benefit in terms of attracting tourism and fostering business that promotes itself off the back of rural Scottish production it is also its main constraint. The main constraints associated with the rural context are:

- Relatively long journey distance to other population centres;
- Areas of significant gradient changes constrain the potential route of the A95 corridor;
- The meandering alignments of the Rivers Spey and Avon require multiple crossing on points;
- Areas of outstanding natural beauty mean any significant improvements to the route may have an unacceptably high environmental impact;
- Sparsely spread populations along the route make improvements to public transport difficult to justify, without significant public sector intervention.

## 4 Objectives

### 4.1 Introduction

Objective setting is an integral part of the transport appraisal process. Objectives are required to reflect the issues and opportunities that have been identified, as well as to reflect established policy directives, including the Government's purpose.

Transport Planning Objectives are essential to ensure that the final options address the identified problems fully. They should be SMART; that is Specific, Measurable, Attainable, Relevant and Timed and they should express the outcomes of the study and describe how problems may be alleviated. Additionally, the Transport Planning Objectives should provide the basis for the appraisal of options and, during Post-Appraisal, will be central to monitoring and evaluation.

The following takes cognisance of relevant national, regional and local policy aims and objectives in setting the context for study specific objectives.

### 4.2 Established Policy Directives

The Government has five main areas that should always be considered when appraising transport proposals, these are:

- Environment;
- Safety;
- Economy;
- Integration; and
- Accessibility and Social Inclusion.

The Governments Transport Planning Objectives<sup>16</sup> relating to Environment are as follows:

- to reduce noise;
- to improve local air quality;
- to reduce greenhouse gases;
- to protect and enhance the landscape;
- to protect and enhance the townscape;
- to protect the heritage of historic resources;
- to support biodiversity;
- to protect the water environment;
- to encourage physical fitness; and
- to improve journey ambience.

The transport planning objectives relating to Safety are as follows:

- to reduce accidents; and
- to improve security.

The transport planning objectives relating to Economy are as follows:

- to get good value for money in relation to impacts on public accounts;
- to improve transport economic efficiency for business users and transport providers;

<sup>16</sup> Transport Scotland STAG Setting Transport Planning Objectives <http://www.transportscotland.gov.uk/report/i8773a-05.htm>

- to improve transport economic efficiency for consumer users;
- to improve reliability; and
- to provide beneficial wider economic impacts.

The transport planning objectives relating to Integration are as follows:

- to improve transport interchange;
- to integrate transport policy with land-use policy; and
- to integrate transport policy with other Government policies.

Accessibility and Social Inclusion in the context of this study can be defined as follows:

- ease of access to the transport system itself in terms of, for example, the proportion of homes within x minutes of a bus stop or the proportion of buses which may be boarded by a wheel-chair user;
- ease of access to facilities, with the emphasis being on the provision of the facilities necessary to meet people’s needs within certain minimum travel times, distances or costs;
- the value which people place on having an option available which they might use only under unusual circumstances (such as when the car breaks down) – ‘option value’ – or even the value people place on simply the existence of an alternative which they have no real intention of using – ‘existence value’; and
- participation in activities (for personal travel) or delivery of goods to their final destination (for goods travel), provided by the interaction of the transport system, the geographical pattern of economic activities, and the pattern of land use as a whole.

#### **4.2.1 National Transport Strategy**

The Scottish Government’s Purpose is to focus government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth. This is translated to five strategic objectives for a safer and stronger; smarter; wealthier and fairer; greener; and healthier Scotland.

The following Key Strategic Outcomes (KSOs) from Scotland’s National Transport Strategy (NTS) are most relevant to the issues identified with the A95 and are used as the basis for delivering improvement to transport in Scotland in response to the Scottish Government’s purpose and strategic objectives:

- Improve journey times and connections between our cities and towns and our global markets to tackle congestion and provide access to key markets; and
- Improve quality, accessibility and affordability, to give people a choice of public transport, where availability means better quality transport services and value for money or an alternative to the car.

#### **4.2.2 HITRANS Regional Transport Strategy**

The vision of HITRANS Regional Transport Strategy (RTS) (2008) for the Highlands and Islands is: “enhancing the area’s viability – enhancing its place competitiveness and thereby attracting and retaining people in the area and making it a more attractive place in which to live, to work, to conduct business and to visit.”

HITRANS recognises that, in order to achieve the above vision, addressing the critical issue of connectivity is key; that is improving how people and businesses get

access to services and destinations. A delivery objective has therefore been developed for the Strategy which is, 'to improve the interconnectivity of the region to strategic services and destinations'. Improving connectivity is a central theme to all the problems and constraints that have been identified through consultation with stakeholders around the region.

Relating to this, the principal objective of the RTS is to generate sustainable economic growth across the region by improving the interconnectivity across the area to destinations and strategic services. This is undertaken through the support of Local Authorities, Scottish Government and other important public and private sector partners to create an enhanced transport network across the Highlands and Islands.

The individual planning objectives for the RTS are to:

- Enable the region to compete and to support growth;
- Enable the people of the region to participate in everyday life;
- Improve the safety and security of travel;
- Manage the impacts of travel on the region's environmental assets; and
- Improve the health of the region's people.

In relation to the specific problems identified by this study the RTS includes aspirations including improved journey time reliability, reduced journey times, improved journey consistency and improved safety.

#### **4.2.3 Local Development Plan – The Moray Council**

Moray Council is currently preparing their Local Development Plan (LDP) for 2015, therefore their proposed visions and actions have been taken from draft documents. The LDP will include the aim to:

- Retain its younger population and increase the number of new residents;
- Improve employment in engineering, technology, tourism and the food and drink sector;
- Improve housing and affordability, and high quality residential developments;
- Develop and protect the natural heritage surrounding Moray; and
- Focus on renewable energies while reducing carbon emissions.

The LDP's specific objectives for transportation and accessibility include providing and enhancing efficient transport links to the remainder of Scotland, including policies that will improve road, rail, air and sea routes in Moray. It also aims to encourage active travel and reduce travel demands through a number of policies surrounding the notion of using alternative modes to car.

#### **4.2.4 Local Development Plan – The Highland Council**

By 2030, the Highland Council intend to be one of Europe's leading regions, as identified in their Local Development Plan (LDP). The LDP includes aims to create sustainable communities that balance population growth and economic development, protect the local environment and build a fairer and healthier Highlands. With regard to supporting a competitive, sustainable and adaptable Highland region a number of initiatives include:

- Delivering opportunities that encourage economic development and create new local employment;
- Improving transport infrastructure across the area in partnership with Transport Scotland;
- Promoting an innovative and optimistic approach to new developments that encourage people to walk, cycle or use public transport; and
- Supporting the delivery of a twenty first century telecommunications network, that provides the Highlands area with an improved access to global opportunities.

#### **4.2.5 Local Transport Strategy– The Moray Council**

The Moray Local Transport Strategy (LTS) outlines numerous objectives and action plans for transport policy and infrastructure in Moray. The majority of these key objectives surround the vision of maintaining excellent accessibility through a safe, integrated, reliable and affordable transport system.

The key objectives for the LTS are to:

- Enable economic development through a sustainable transport infrastructure;
- Encourage and support safer and affordable travel;
- Boost an effective and reliable transport network through improving the existing infrastructure;
- Improve accessibility to jobs, services and facilities;
- Promote travel behaviour change with the intent to reduce the need for a car and the associated environmental impact; and
- Integrate transport modes, policies and land-use plans.

The LTS also includes a specific action to encourage the Scottish Government to upgrade and improve the A95 trunk road, to manage the traffic loading and improve its accessibility.

#### **4.2.6 Local Transport Strategy – The Highland Council**

The Highland Council plan to consider a number of issues summarised in their Local Transport Strategy (LTS) with the vision to “facilitate sustainable development and economic growth, support, include and empower communities through transparent decision-making, and establish an integrated transport network which supports safe and sustainable environments...”

The LTS ensures this through providing a network that sustains economic growth, recognising urban and rural locations and the remoteness between Highland trips compared to the UK. It plans to enable economic and social involvement through transport and improving travel choices, while reducing road traffic and enhancing road and personal safety. The LTS also aims to integrate policies and investments, maximising benefits and opportunities of combined transport across Council services; and finally to reduce the transport impacts on the built environment.

### **4.3 A95 Route Action Study – Transport Planning Objectives**

Having taken cognisance of the established policy directives at national, regional and local levels, and then setting these against identified the problems and opportunities on the A95, the following study specific Transport Planning Objectives have been set for this A95 Route Study:

**Strategic Objective: To improve operating conditions on the A95**

**Objective 1: Improve journey time reliability;**

**Objective 2: Improve road standards and overtaking opportunities;**

**Objective 3: Enhance public transport accessibility;**

**Objective 4: Assist in the provision of an efficient and effective transport corridor to support access for communities and local industries; and**

**Objective 5: Improve safety on the A95.**

Table 4.1 identifies how the transport planning objectives detailed above relate to the problems that were identified in Chapter 3.

Problem Number	Identified Problem	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5
1	Road width contributes to vehicles overrunning the carriageway	✓	✓		✓	✓
2	Road width contributes to HGV collisions	✓	✓		✓	✓
3	Road alignment contributes to increased accident risk	✓	✓		✓	✓
4	Pinch points result in reduced journey time reliability	✓	✓	✓	✓	
5	Pinch points result in reduced fuel economy	✓	✓		✓	
6	Lack of overtaking opportunities may contribute to accidents	✓	✓		✓	✓
7	Lack of overtaking opportunities contribute to driver frustration	✓	✓		✓	✓
8	Lack of route long public transport opportunities results in reduced mode choice availability			✓	✓	
9	Road maintenance issues results in increased maintenance costs for motorists		✓		✓	
10	Combined problems on A95 constrains future business development in the area	✓	✓	✓	✓	✓

**Table 4.1 Identified Problems and Transport Planning Objectives**

## 5 Option Generation and Sifting

### 5.1 Introduction

The STAG process requires that options be generated that specifically meet the objectives of the study and therefore tackle the problems identified on the route under consideration. Once developed they should be appropriately sifted to ensure that only the most effective options are retained and then developed and refined into workable proposals.

This section of the study details the options that have been developed to address the problems detailed in section 3 and meet the objectives listed in section 4. The options have all been developed taking cognisance of recommendations in previous reports, opportunities that were identified by stakeholders, committed improvements informed of by Transport Scotland and based on a desktop analysis of the route.

The options are mainly intended to target the whole route rather than specific locations although, where appropriate, specific locations have been identified options. Given the scale and context of the route no one option will provide a solution to address all problems identified and therefore the most effective solution may consist a package of options. It is considered likely that packages of options, if sifted for further development, would be refined in more detail at a later appraisal stage.

It should be noted that in order to inform the potential feasibility of any options to widen sections of the A95, Transport Scotland's Asset Management team provided Jacobs with route boundary plans. Investigation of these showed that, whilst the alignment of the A95 highway boundary varied significantly along the route, even the narrowest points were at least 12 meters in width. This implies that, from a land ownership point of view, minor widening of the route could be provided within existing highway boundary ownership.

### 5.2 Option Generation

#### 5.2.1 Whole Route Options

##### **Option 1 - Develop a programme to bring the cross section of the route up to full DMRB standard**

The road has been identified as being below standard, in terms of width and horizontal, as well as vertical, alignment across much of the route. This option would involve widening out the route to a standard 7.3m width with 1m wide strips on each side, as per standards and flatten horizontal and vertical alignments in line with standards. It is anticipated that this proposal would be delivered in phases, with sections being upgraded as part of programmed upgrades and maintenance on the route.

##### **Option 2 – Develop a programme to widen the route to 7.3m along its length**

This option is a variant of option 1 focusing only on bringing the width of the route up to DMRB compliant width of 7.3m. This is aimed at reducing problems with vehicles overrunning the carriage and vehicle collisions. This proposal could also be delivered in phases, with sections being upgraded as part of programmed upgrades and maintenance on the route.

**Option 3 – Develop a programme to realign substandard bends**

This option is also a variant of option 1 focusing only on bringing substandard bend alignments up to DMRB compliant standards. This is aimed at reducing accident potential and improving fuel economy on the route.

**Option 4 – Develop a programme to provide high friction surfacing and warning signs at substandard bends**

The ‘A95 Treatment Review’ (Transport Scotland / BEAR June 2008) identifies that lining, signing and high friction surfacing with aid reductions in accidents at tight bends. This option would provide such measures at all bends identified as substandard.

**Option 5 - Develop 2+1 sections on the route**

The route has been identified as having limited overtaking opportunities along much of its length. In order to facilitate greater overtaking opportunities this option is proposed which would allow sections of 2 + 1 carriageway to facilitate safe overtaking of slower moving vehicles.

**Option 6 - Provide additional lay-bys on the route**

There are currently a limited number of lay-bys on the route which allow HGVs to pull over and allow accumulated queues behind them to dissipate. This option would provide additional lay-bys to allow efficient pulling over before continuing on route after queuing has dissipated.

**Option 7 - Develop a programme improve carriageway surfacing on the route**

Stakeholders identified concerns with the standard of carriageway surfacing on the route contributing to high maintenance costs for vehicles, particularly HGVs. This option would require working with Transport Scotland and BEAR to identify an increased programme for maintaining surfacing along the whole route.

**Option 8 – Enhance public transport facilities and services**

There is a current lack of end to end public transport provision on the A95. In order to encourage improved public transport provision this option would provide additional bus stop infrastructure along the route to facilitate increased provision. This option would potentially need to be supported with bus service subsidies as well.

**Option 9 – Develop freight interchange points**

A significant proportion of traffic on the route is made up of HGVs. This option would provide the option to transfer freight from road to rail, potentially at Elgin and / or Aviemore, removing some HGV movements from part of the route.

**5.2.2 Targeted Options**

**Option 10 – Widening pinch points at Cromdale and Mains of Dalvey**

The road has been identified as having several pinch points which slow or stop vehicles; increasing journey time and driver frustration and resulting in reduced fuel efficiency, especially amongst HGVs. This option would involve widening of existing pinch points at Cromdale and Mains of Dalvey and removal of signals to allow two-way operation.

### **Option 11 – Signalisation of Balnellan Bridge**

A further pinch point is identified at Balnellan Bridge, east of Craigellachie, which currently operates as priority controlled one way at a time pinch point. It is considered that low traffic volumes at this location do not warrant the expense of widening the bridge and therefore it is considered that signal control could improve traffic operations overall.

## **5.3 Option Sifting**

All of the proposed options have been developed to address the problems identified in Section 3, some present variations of options aimed at solving similar problems and as such the sifting process identifies the most appropriate options to address problems most effectively. It is considered that all options presented meet at least one of the transport planning objectives, therefore an initial sift of the options against the transport planning objectives has not been carried out on all but two options, meaning nine have been progressed to the next stage in the appraisal process.

In considering overall implementability of options however (i.e. identifying any major technical, operational, financial or public constraints contained within each option that may impact on their delivery) two of the options have been eliminated prior to the further assessment process; these are options 7 and 9.

Option 7 '*develop a programme improve carriageway surfacing on the route*' has been eliminated as, despite several Stakeholders bringing up carriageway condition as problem, Transport Scotland has been consulted and stated that maintenance operation arrangements are already in place with BEAR to maintain the route to an acceptable standard and therefore should not be required to exceed maintenance standards. Further Option 9 '*develop freight interchange points*' has been eliminated as, despite freight capacity being available at Elgin, previous studies by the whisky industry identified prohibitive cost and capacity constraints in using the existing rail network to replace road freight from Speyside; it has therefore been discounted on technical, operational and financial grounds.

## 6 Option Appraisal

### 6.1 Summary of Appraisal

The appraisal has been carried out against the following criteria:

- Transport Planning Objectives:
  - *Strategic Objective: To improve operating conditions on the A95*
  - *Objective 1: Improve journey time reliability*
  - *Objective 2: Improve road standards and overtaking opportunities*
  - *Objective 3: Enhance public transport accessibility*
  - *Objective 4: Assist in the provision of an efficient and effective transport corridor to support access for communities and local industries*
  - *Objective 5: Improve safety on the A95*
  
- STAG Criteria:
  - *Environment;*
  - *Safety;*
  - *Economy;*
  - *Integration; and;*
  - *Accessibility and Social Inclusion.*

The options have been appraised against the STAG criteria utilising the standard seven point scale:

▪ <i>Major Benefit</i>	✓✓✓
▪ <i>Moderate Benefit</i>	✓✓
▪ <i>Minor Benefit</i>	✓
▪ <i>No benefit or impact</i>	0
▪ <i>Minor Negative Impact</i>	X
▪ <i>Moderate Negative Impact</i>	XX
▪ <i>Major Negative Impact</i>	XXX

A summary assessment of Options 1 – 6, 8, 10 & 11 appraised against the Transport Planning Objectives and STAG criteria together with the rationale for selection or rejection of each option is detailed in Table 6.1.

Table 6.1 Appraisal of Options Against Planning Objectives

Option Number	Option	Problems addressed	Objective 1 - Improve journey time reliability	Objective 2 - Improve road standards and overtaking opportunities	Objective 3 - Enhance public transport accessibility	Objective 4 - Assist in the provision of an efficient and effective transport corridor to support access for communities and local industries	Objective 5 - Improve safety on the A95	Environment	Safety	Economy	Integration	Accessibility and Social Inclusion	Rational for section or rejection
1	Develop a programme to bring the cross section of the route up to full DMRB standard	1,2, 3,4 5,6, 7,8, 9, 10	✓✓	✓✓	0	✓	✓✓	x	✓✓	X	0	✓	This Option performs well overall against the transport planning objectives and some of the STAG criteria. However, whilst it could potentially be implemented on a phased basis alongside ongoing scheduled maintenance of the route the overall costs associated with it are considered prohibitive. There is therefore considered to be an overall minor negative impact on the Economy objective and <b>it is therefore recommended that this option is <u>rejected</u>.</b>

Option Number	Option	Problems addressed	Objective 1 - Improve journey time reliability	Objective 2 - Improve road standards and overtaking opportunities	Objective 3 - Enhance public transport accessibility	Objective 4 - Assist in the provision of an efficient and effective transport corridor to support access for communities and local industries	Objective 5 - Improve safety on the A95	Environment	Safety	Economy	Integration	Accessibility and Social Inclusion	Rational for section or rejection
2	Develop a programme to widen the route to 7.3m along its length	1,2, 4,5, 6,7, 9,10	✓	✓✓	0	✓	✓	x	✓	✓✓	0	✓	This Option performs well overall and could be implemented on a phased basis along the route alongside ongoing scheduled maintenance. It would therefore be significantly more cost effective to develop than Option 1 and therefore has major benefit overall against the Economy objective. <b>It is therefore recommended that this option is progressed.</b>
3	Develop a programme to realign substandard bends	3,6, 7, 9,10	✓	✓✓	0	✓	✓	x	✓	✓✓	0	✓	This Option performs well overall and could be implemented on a phased basis along the route alongside ongoing scheduled maintenance. <b>It is therefore recommended that this option is progressed.</b>
4	Develop a programme to provide high friction surfacing and warning signs at substandard bends	3,9	0	✓	0	0	✓	0	✓	✓	0	✓	This Option performs relatively well although would not provide significant benefit as a standalone measure. <b>It is only recommended that this option progresses if other, more beneficial, options cannot be progressed.</b>

Option Number	Option	Problems addressed	Objective 1 - Improve journey time reliability	Objective 2 - Improve road standards and overtaking opportunities	Objective 3 - Enhance public transport accessibility	Objective 4 - Assist in the provision of an efficient and effective transport corridor to support access for communities and local industries	Objective 5 - Improve safety on the A95	Environment	Safety	Economy	Integration	Accessibility and Social Inclusion	Rational for section or rejection
5	Develop 2+1 sections on the route	1,2, 4,5, 6,7, 9,10	✓✓	✓✓✓	0	✓	✓	x	✓	✓✓	0	✓	This Option performs relatively well overall, particularly in terms of promoting overtaking opportunities (and potentially reducing driver frustration), and so is likely to have a minor benefit in improving safety. <b>It is therefore recommended that this option is <u>progressed</u>.</b>
6	Provide additional lay-bys on the route	6,7, 10	✓✓	✓✓	0	✓	✓	x	✓	✓	0	✓	This Option performs well overall, particularly in terms of promoting overtaking opportunities and improving road safety. <b>It is therefore recommended that this option is <u>progressed</u>.</b>
8	Enhance public transport facilities and services	8	0	0	✓✓✓	✓	0	✓	0	✓	✓✓	✓✓	This Option performs well on some objectives, particularly in terms of promoting public transport accessibility, integration and inclusion. <b>It is therefore recommended that this option is <u>progressed</u> along with other road based improvements.</b>

Option Number	Option	Problems addressed	Objective 1 - Improve journey time reliability	Objective 2 - Improve road standards and overtaking opportunities	Objective 3 - Enhance public transport accessibility	Objective 4 - Assist in the provision of an efficient and effective transport corridor to support access for communities and local industries	Objective 5 - Improve safety on the A95	Environment	Safety	Economy	Integration	Accessibility and Social Inclusion	Rational for section or rejection
10	Widening pinch points at Cromdale and Mains of Dalvey	2,4,5,10	✓✓	✓✓	0	✓	✓	x	✓	✓✓	0	✓	This is a targeted Option that also provides benefits to the whole route. It meets the majority of objectives well and addresses several problems. <b>It is therefore recommended this this options is progressed.</b>
11	Signalisation of Balnellan Bridge	2,4,5,10	✓	✓	0	✓	✓	0	✓	✓	0	✓	This is a targeted Option whose benefits are mainly isolated to the area around it. It meets the majority of objectives although its overall scores are relatively low given the isolated benefits it brings. <b>It is recommended that this option is rejected given its limited overall benefit.</b>

## 6.2 Options for Progress

Several of the proposed options successfully meet the majority of objectives and therefore should be considered for further discussion and potentially further appraisal.

The options considered to be appropriate for progression are as follows:

### **Option 2 – Develop a programme to widen the route to 7.3m along its length**

This option is a variant of Option 1 focusing only on bringing the width of the route up to DMRB compliant width of 7.3m. This is aimed at reducing problems with vehicles overrunning the carriage and vehicle collisions. This proposal could also be delivered in phases, with sections being upgraded as part of programmed upgrades and maintenance on the route.

### **Option 3 – Develop a programme to realign substandard bends**

This option is a variant of Option 1 focusing only on bringing substandard bend alignments up to DMRB compliant standards. This is aimed at reducing accident potential and improving fuel economy on the route.

### **Option 5 - Develop 2+1 sections on the route**

The route has been identified as having limited overtaking opportunities along much of its length. In order to facilitate greater overtaking opportunities an option is proposed which allows sections of 2 + 1 carriageway to allow safe overtaking of slower moving vehicles.

### **Option 6 - Provide additional lay-bys on the route**

There are currently a limited number of lay-bys on the route which allow HGVs to pull over and allow accumulated queues behind them to dissipate. This option would provide additional lay-bys to allow efficient pulling in before continuing on route after queuing has dissipated.

### **Option 8 – Enhance public transport facilities and services**

There is a current lack of end to end public transport options on the route. In order to encourage improved public transport provision this option would provide additional bus stop infrastructure along the route to facilitate increased provision. This option would potentially need to be supported with bus service subsidies as well.

### **Option 10 – Widening pinch points at Cromdale and Mains of Dalvey**

The road has been identified as having several pinch points which slow or stop vehicles; increasing journey time and driver frustration and resulting in reduced fuel efficiency, especially amongst HGVs. This option would involve widening of existing pinch points at Cromdale and Mains of Dalvey and removal of signals to allow two-way operation.

It is anticipated that all options could be delivered as part of a package with specific options selected together to solve all, or most, problems and successfully meet all objectives.

## **7 Summary, Conclusions and Recommendations**

### **7.1 Summary**

This study has been undertaken as a pre-appraisal exercise in accordance with STAG. Many of the findings within it are based on information and opinions provided by a number of stakeholders representing organisations with an interest in the A95 including Moray Council, Highlands and Islands Transport Partnership, the whisky, food and timber industries as well as haulage and tourism industries. Findings are also based on analysis of traffic flows and accident data for the route and on discussions undertaken with Transport Scotland and their maintenance contractors BEAR Scotland.

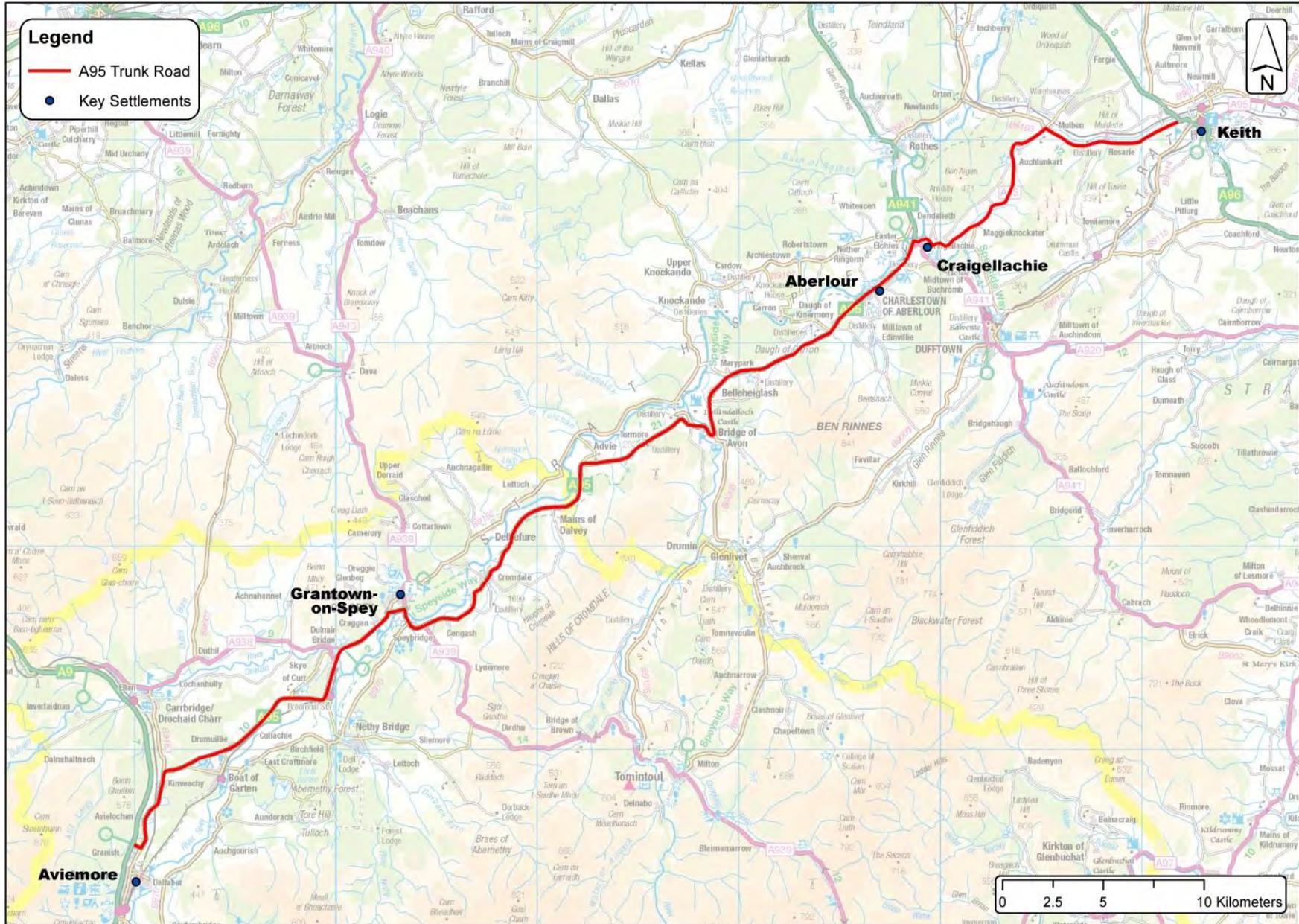
### **7.2 Conclusions**

The study concluded that there are several key problems along the route and, as a result, transport planning objectives have been developed which relate to these. Various options have been generated to meet the objectives and address the problems and these have been sifted to identify feasible options to develop further. A total of 7 options are recommended for further discussion and appraisal as each successfully addresses at least one identified problem and several study and government objectives.

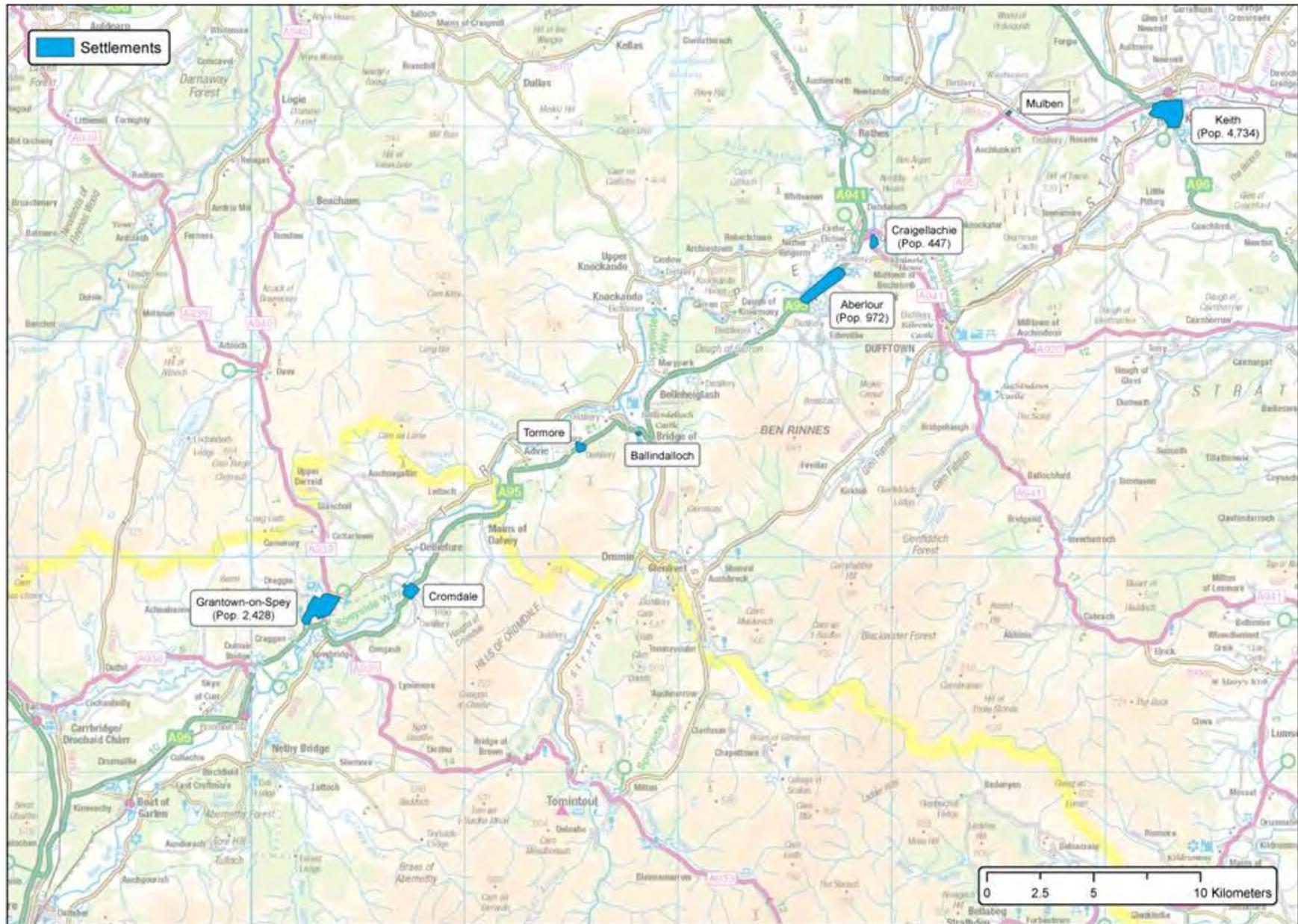
### **7.3 Recommendations**

It is recommended that options be taken forward as packages to ensure that all options and objectives can be collectively met. The selection of options within the packages will be dependent on identifying appropriate funding streams to deliver each. It is anticipated that funding could be provided through a combination of both central and local government, with costs and disruption potentially reduced by delivering some options alongside the ongoing maintenance program for the A95.

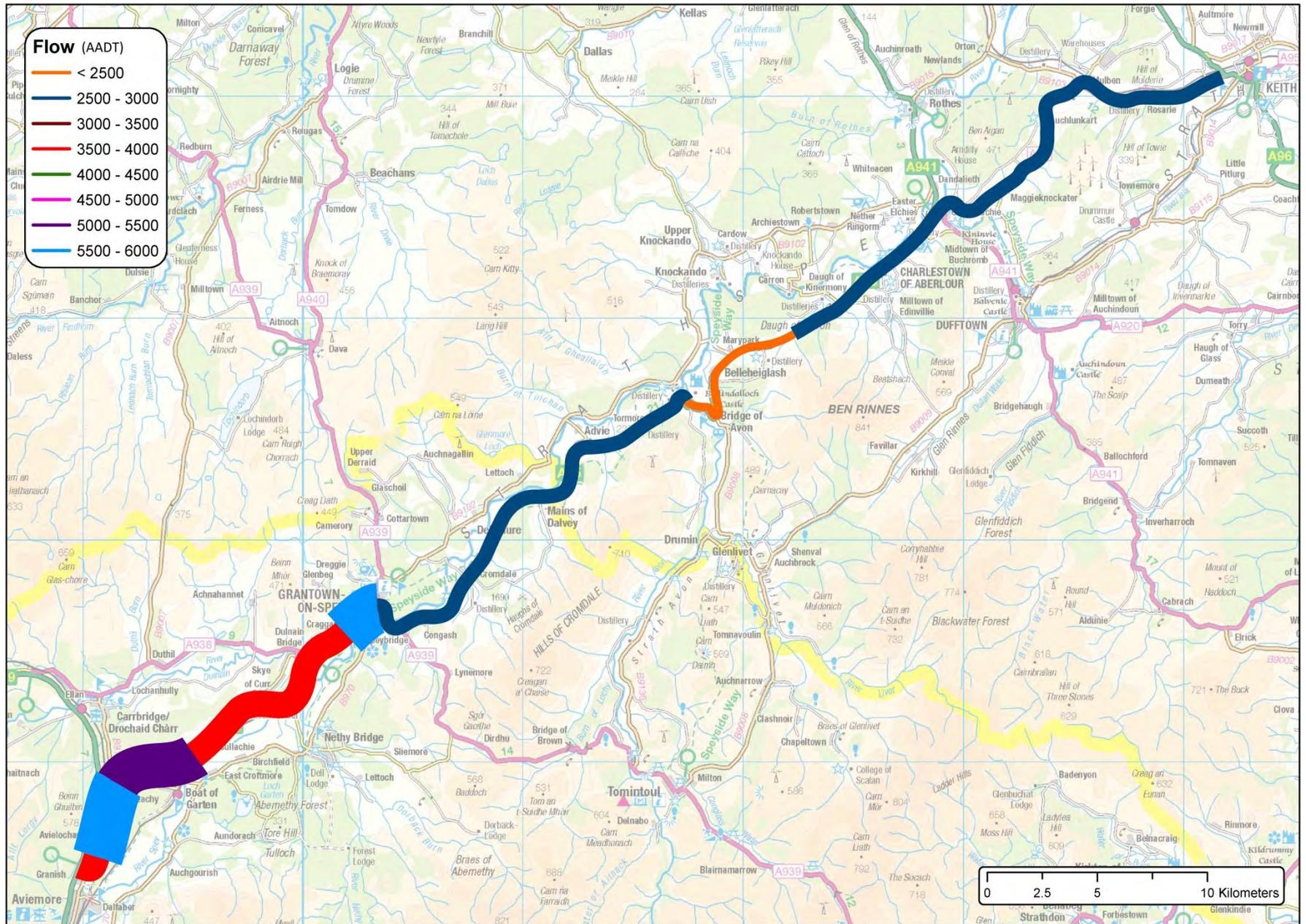
**Appendix A – A95 Trunk Road**



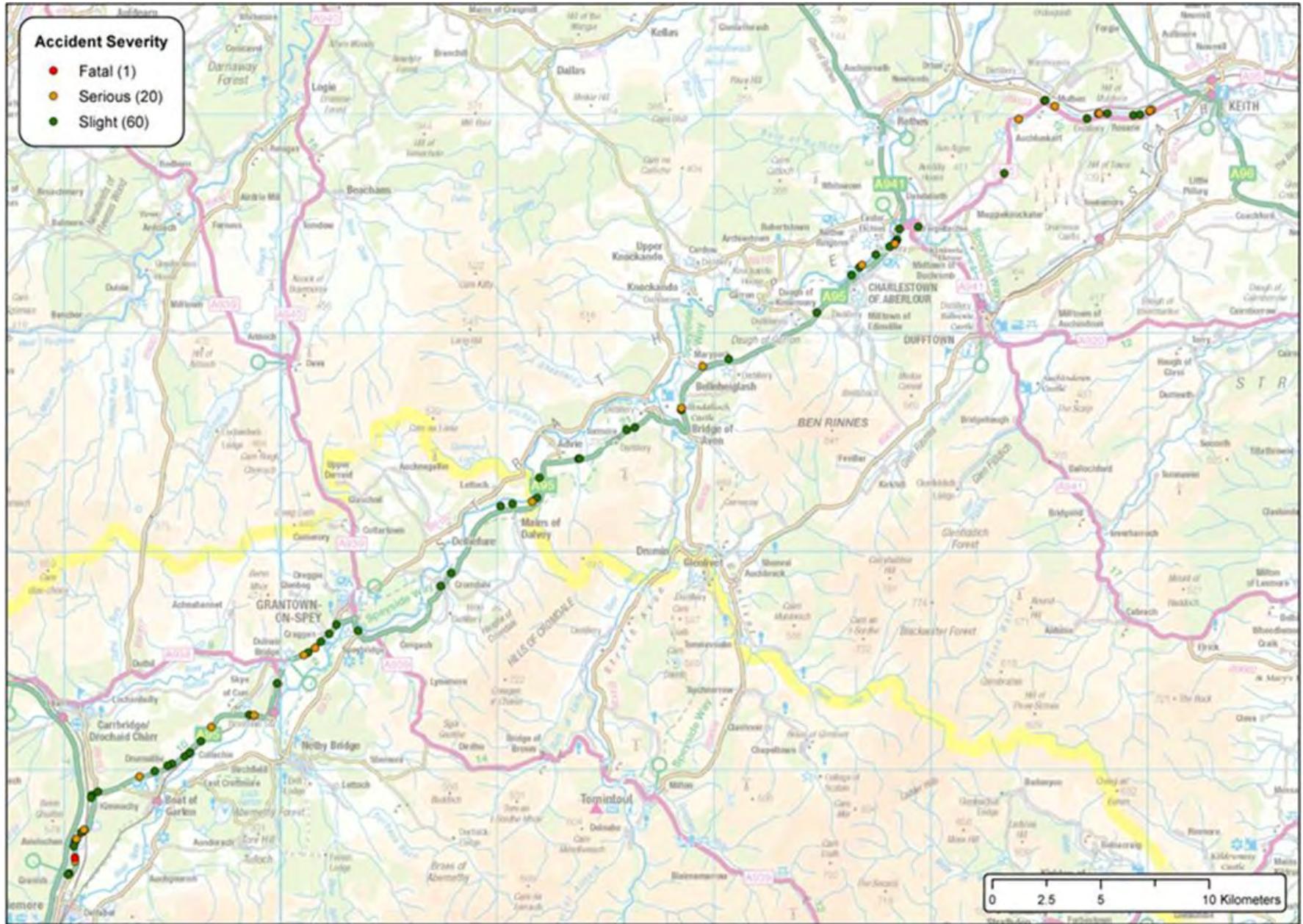
**Appendix B – Settlements on the A95**



**Appendix C – A95 Traffic Flows**



**Appendix D – Accident Locations on the A95**



**Appendix E – A95 Pinch Points**

