Elgin Transport Strategy

The Moray Council

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04 October 2016

Elgin Transport Strategy

Project No:	B2270700
Document Title:	Elgin Transport Strategy
Document No.:	1
Revision:	0
Date:	04 October 2016
Client Name:	The Moray Council
Project Manager:	Calum Robertson
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File Name:	P:\Data3\B2270700 - Elgin Transport Strategy\Reports_Notes\Reports\Elgin Transport Strategy Final Issue 041016.docx

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Document history and status

Revision	Date	Description	By	Review	Approved
01	29/09/16	Final Draft for Client Approval	CR	KG	CR
02	04/10/16	Issue following client comment	CR	KG	CR

Contents

1. Introduction

1.1 Background

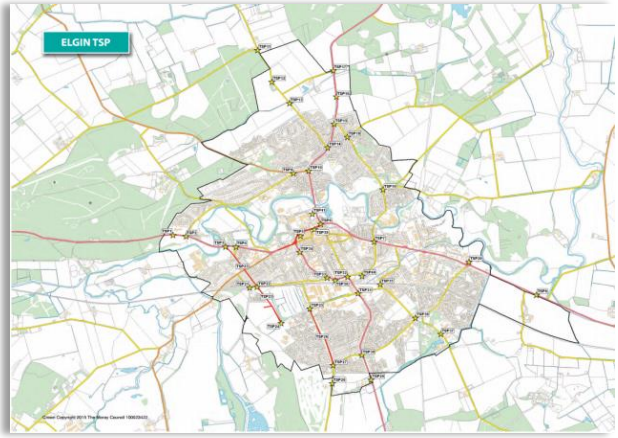
Elgin is Moray's largest town, with a current population of around 26,000[1]. It is also Moray's main employment and main transport hub, sitting in a strategic position on both the trunk road and rail networks. As such, a range of different demands are placed on Elgin's transport network that all need to be accommodated to ensure Elgin continues to thrive and grow.

Given the rural makeup of much of Moray, car ownership levels are considered relatively high (80%) compared to much of the rest of Scotland (70%[2]). Moray's rural nature also impacts on the availability of public transport for outlying areas when compared to other parts of Scotland. Whilst there is a good quality of service available for settlements on the key routes into Elgin, such as the A96, A941, A941 / A95 and the Aberdeen to Inverness Rail Line, communities away from these routes may either not be served at all or may require a number of interchanges and subsequent long journey times.

Where traffic key routes from the outlying areas of Elgin meet, there are observed to be periods of isolated congestion, mainly due to relatively high volumes of traffic entering and exiting Elgin via a relatively few number of routes. These periods of congestion are contributed to by relatively few opportunities to cross the Aberdeen – Inverness rail line and other barriers, such as the River Lossie.

Elgin is a compact settlement with not many hills. The centre is walkable within a 15 – 20 minutes journey time of much of Elgin and cyclable within around 10 minutes (using existing routes). Pedestrianisation of much of the High Street has made it a safer and more pleasant place to visit and spend time. This is supported by the provision of high quality combined pedestrian / cycle routes, used both for commuting and leisure, linking Elgin to its outlying areas. Use of the cycle / pedestrian link between Lossiemouth and Elgin has significantly increased in recent times.

With significant population growth forecast for Moray, and in particular Elgin, primarily as a result of development opportunities being promoted through the Moray Local Development Plan (2015), The Moray Council wants to be proactive in ensuring the transport network continues to function efficiently. With this in mind it has decided to conduct a review of the existing transport network and an appraisal of potential future interventions to assist in the creation of a robust and effective Transport Strategy for Elgin.



This study will investigate the expected additional pressures to be put upon the network as a result of this growth and will allow Elgin to continue to thrive as a sustainable community where people enjoy living and feel safe travelling around.

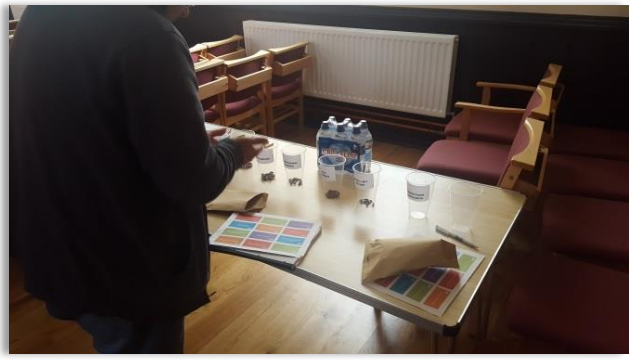
[1] HIE Elgin Profile http://www.hie.co.uk/common/handlers/download-document.ashx?id=9bf48107-4ae0-4d2e-9202-94e863947435
[2] Scottish Census (2011): http://www.scotlandscensus.gov.uk/documents/censusresults/release2a/rel2asbfigure22.pdf

1.2 Methodology

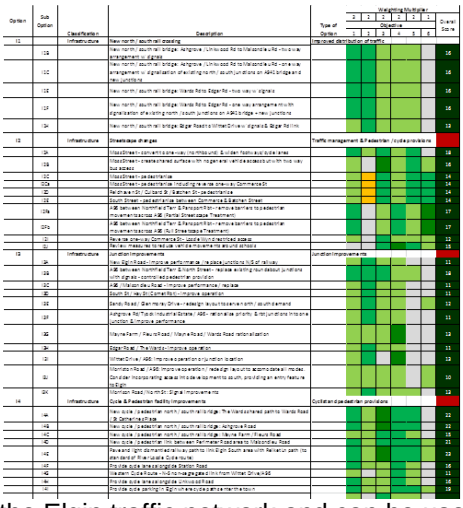
Jacobs was commissioned by The Moray Council (TMC) to assist them in creating a successful Transport Strategy for Elgin. An objectives led approach was to be followed to ensure a thorough and wide ranging study that will ensure eventual recommended actions are based on sound reasoning and assessment. To allow this, current travel behaviour in and around Elgin was analysed, future travel behaviour was predicted, a thorough analysis of existing and future anticipated problems and opportunities was undertaken, and a vision created. This vision was agreed as follows:

> *"A forward looking transport strategy that ensures Elgin is a desirable, vibrant and healthy place to live, work and visit for all"*

A range of objectives were then agreed in conjunction with groups and organisations with a vested interest in the success of this strategy (stakeholders), and TMC officers, that clearly set out specific and measurable goals to assist in delivering this vision. Any future interventions for the strategy must successfully meet the majority, if not all, of these objectives to be considered further within an Action Plan. As such a long list of options / interventions aimed at addressing identified problems, and taking advantage of opportunities, was subsequently generated and the success with which each of these meets the study objectives assessed. To assist with the robustness of this process the study objectives were weighted in order of their importance to the study. This objective weighting was applied based on the results of voting by key stakeholders. A total of 52 stakeholders voted on the objectives, helping ensure a wide-buy in to this key element of the strategy.



Following this initial appraisal process, the options that were deemed to be unsatisfactorily in addressing the weighted study objectives were sifted out of the study, with no further consideration. Conversely the options that scored highly against the objectives were retained for further investigation, development and appraisal.



This further investigation, development and appraisal of successful options was undertaken using a number of methods. Firstly, each option was mapped in terms of its geographic location and then an investigation as to how it could tie into any elements of the existing transport network and operate effectively in practice was undertaken. Cognisance was given where possible to known existing constraints, such as land levels, land availability, location of built / populated areas around each option and overall standards that might be applicable should the option be developed in detail at a later stage.

Use was made of the current Elgin Traffic Model (ETM), this model being constructed and maintained on behalf of TMC by Jacobs. This macro traffic simulation based VISUM model covers the full extents of the Elgin traffic network and can be used to assess the strategic impact of changes to land use (i.e. the impact of development), the impact of changing travel behaviour (i.e. any potential shift in travel demand from areas) and the impact of potential infrastructure schemes affecting the road network. Early use of this model was made to compare the effectiveness of several similar options, informing decisions on which were the most effective, with the least being discounted at an early stage of option development.

Whilst selected options have not been developed in significant detail at this time, potential costs for each have been derived in broad terms based on a 'tool kit' of costs for similar interventions, based on experience in Elgin and elsewhere. The implementation of measures as part of the strategy is clearly dependant on identification of suitable funding streams, as well as detailed site investigation and scheme design.

The work undertaken to date has been to assist in the implementation of an overall strategy for Elgin, and therefore by its nature is 'strategic'. Despite that a total of over 50 individual options have been considered as part of the appraisal to ensure a comprehensive approach. To assist with clarity and ease of implementation, selected options were packaged together to form an Action Plan covering the Short Term (to 2018), the Medium Term (to 2022) and the Long Term (to 2030). The packages were deliberately designed to each include a good balance of walking, cycling, public transport and vehicle based interventions, in line with current guidelines and good practice.

The options contained within each package can generally be described as follows:

- **Short Term Packages** - considered more 'quick wins' interventions, i.e. those options that are not particularly complicated, time consuming or costly to implement, but that will form a sound base upon which to build the remainder of the strategy.
- **Medium Term Packages** - options that are more difficult and costly to implement, but which will likely contribute significantly to maintaining operation of an efficient transport network.
- **Long Term Packages** – options that take full advantage of the efficient transport network created by the short and medium term packages to ensure all users are equally catered for.

Of note is the fact that the long term packages consider both a scenario where the A96 continues to bisect Elgin as a trunk road and also a scenario where a potential Elgin bypass is created as part of A96 dualling proposals[3] and thus the existing A96 route through Elgin is de-trunked. This approach was considered prudent as, should a bypass by implemented, it is likely to result in a relatively significant change to traffic operation, volume and makeup within Elgin and, as such, options with a bypass implemented may be targeted differently. However, at the time of writing there is no firm commitment in terms of route, layout or timescales around the proposals from Transport Scotland.

Each of the Short, Medium and Long term packages includes a Core and Aspirational package version. The Core package versions include options that are considered fundamental to the success of the strategy, i.e. those without which overall success is less likely, whilst the Aspirational versions include options that are assessed to be likely highly effective in meeting the objectives of this study but those that are not considered fundamental to the success of the strategy. That being said, these Aspirational options will still contribute further to the core options and ensure the strategy is as successful and robust as possible.

1.3 Consultation

A key theme throughout the appraisal process for the Transport Strategy for Elgin has been the level of consultation undertaken to support it. From the start of the process The Moray Council officers have been very clear that the views of key stakeholders and Elgin residents and visitors should be considered fully because they are highly informed users of the Elgin transport network on a day to day basis. The consultation process took two forms:

[3] Transport Scotland A96 dualling plans: http://www.transport.gov.scot/news/a96-dualling-plans-start-take-shape

- Face to face presentations, discussions and voting with key stakeholders
- Travel surveys with the general public

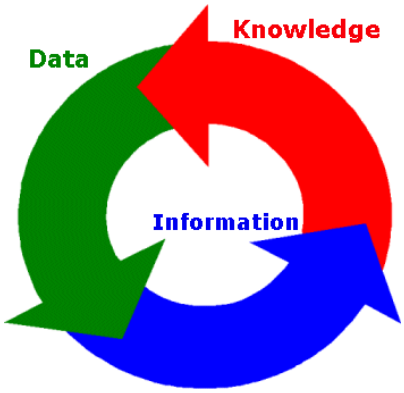
Key stakeholders consisted of representatives of a number of bodies including:

- Accessibility and disability groups;
- Local Councillors and Community Councils;
- The emergency services and the NHS Grampian;
- Transport bodies and operators;
- Developers and consultants;

Wider public engagement was open to anyone who uses the Elgin transport network and survey responses received exceed 800.

2. Elgin's Travel Trends

2.1 Introduction / Overview



To assist with a thorough understanding of how a transport network operates, it is necessary to assess existing and past data trends for transport and travel, around and to / from, the area it serves. As such this section provides a review and summary of transport data for Elgin, with a more detailed breakdown of the data included in the Appendix. The data used was derived from a number of sources including volumetric multimodal surveys, census results and public responses to a travel survey.

2.2 Existing Accessibility in Elgin

Elgin is a compact town of around 3km in diameter with a transport network that accommodates trips on foot, bicycle, public transport and car. It is known that travellers to a destination, be it for work, retail or leisure, will tolerate different journey lengths, but that journey time tolerated is usually relatively consistent across modes. Clearly the distance achievable by different modes of travel varies, with non-motorised modes such as walking or cycling generally able to cover less distance in the same period of time as motorised modes, other than in congested traffic network situations.

In order to understand the overall 'accessibility' of Elgin, by each mode of transport, an accessibility analysis was undertaken for this study. This was based on estimated journey times for each mode using existing infrastructure within and around Elgin appropriate for that mode. As such, trips on foot were assessed using suitable footpath provision, cycle trips on suitable path and road provision and vehicles via appropriate road provision (at travel speeds appropriate to the context of the road, i.e. around 60mph on rural roads and 20/30 mph within urban areas). Public transport trips were assessed on the basis of existing timetables and routes, for both bus and rail services. TRACC multimodal accessibility analysis software was used to estimate these travel times, with a single destination on Elgin High Street selected for reliable comparison. TRACC creates a dataset of all journeys / routes possible within a specified journey time; for the purposes of this study, only journeys possible up to a 40 minute journey time of the centre of Elgin were chosen. The geographic spread of these journeys possible within this time were mapped to show journey time 'bands', as shown in Figure 2.1 to Figure 2.4.

It is clear that the distance achievable within just over half an hour varies by mode, with the motorised modes typically achieving the widest spread of area; although it is interesting to note the significant coverage of area reachable within a reasonable journey time by the non-motorised modes, and also public transport.

2.2.1 Pedestrian Accessibility

Figure 2.1 represents a visualisation of pedestrian accessibility within an estimated 35 minute catchment area of Elgin town centre; it is clear that, due to its compact size and lack of hills, Elgin is clearly a very walkable town. Figure 2.1 shows that to the town centre, dense areas of both housing and employment (such as New Elgin, Bishopmill and West Elgin) are all accessible within a 35 minute walk time whilst the town centre can be traversed, and the town centre reached from Elgin Railway Station, within a 10 minute walk time.

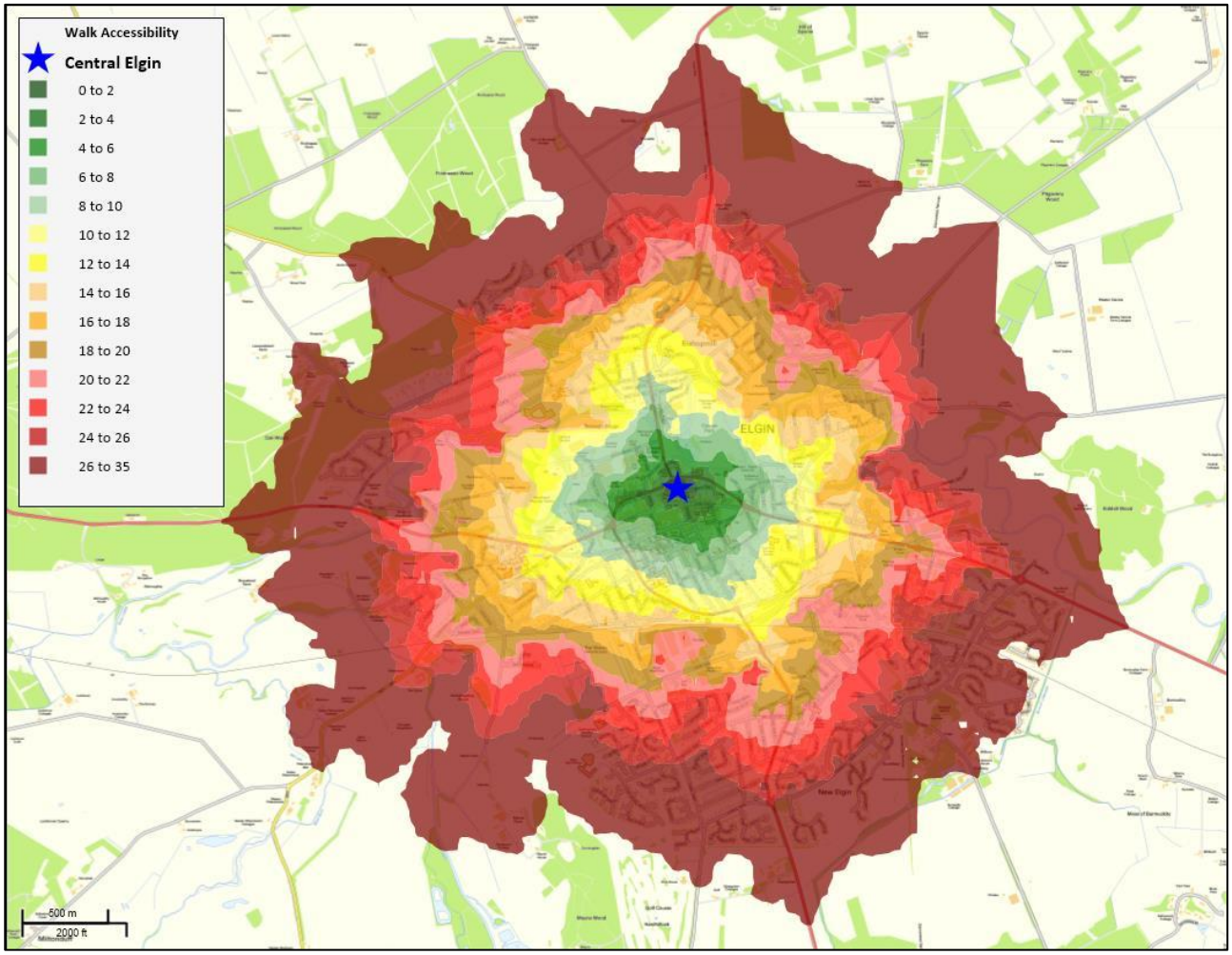


Figure 2.1 - Journey times to central Elgin by foot

2.2.2 Cycle Accessibility

Figure 2.2 visualises accessibility to the centre of Elgin by bicycle; given the increased speed of bicycle compared to on foot, a significantly increased area is accessible within the respective journey time bands. Journeys from the periphery of Elgin to the town centre can comfortably be undertaken within 15 minutes and the town can be traversed from one side to the other within 20 to 30 minutes.

Additionally, key commuter areas around Elgin, such as Lossiemouth (which has very close links with Elgin in terms of employment / place of residence) and Hopeman, are accessible within 30 to 40 minute cycle time of the High Street.

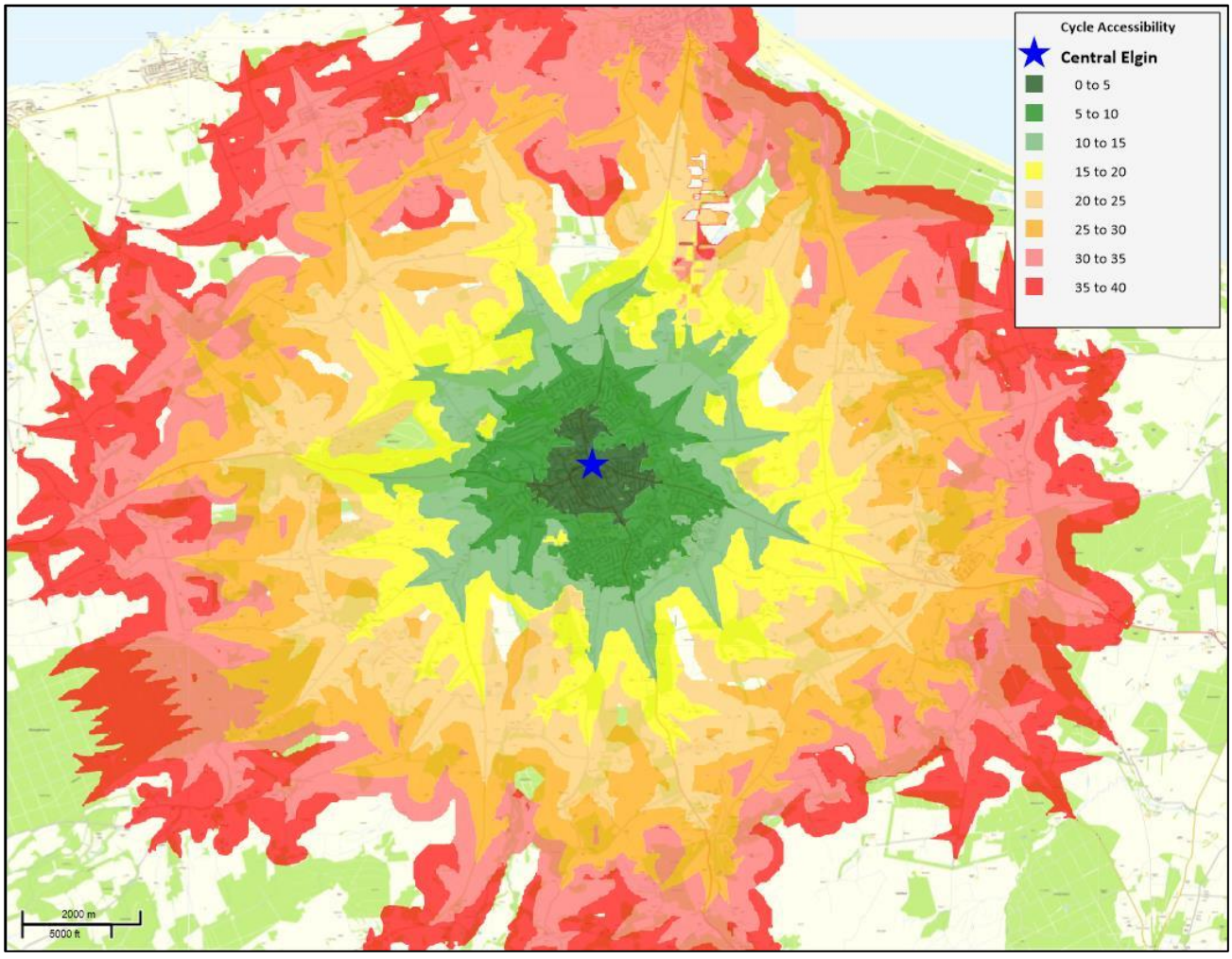


Figure 2.2 - Journey times to central Elgin by bicycle

2.2.3 Public Transport Accessibility

Figure 2.3 displays accessibility to the High Street via public transport. It can be seen that the public transport accessibility within of Elgin is relatively good, with journey times of up to 15 minutes extending to the town boundary; it is important to note that public transport journey times include a walk to the nearest bus stop and then walk from the closest bus stop to Elgin High Street.

Table 2.1 indicates the journey times to Elgin town centre from a selection of surrounding settlements within this catchment.

Table 2.1 - Public Transport accessibility within 35 minutes

Estimated Journey Time	Settlement
15 – 20 minutes	Lossiemouth
20 – 25 minutes	Hopeman
30 – 35 minutes	Burghead, Kinloss, eastern Forres

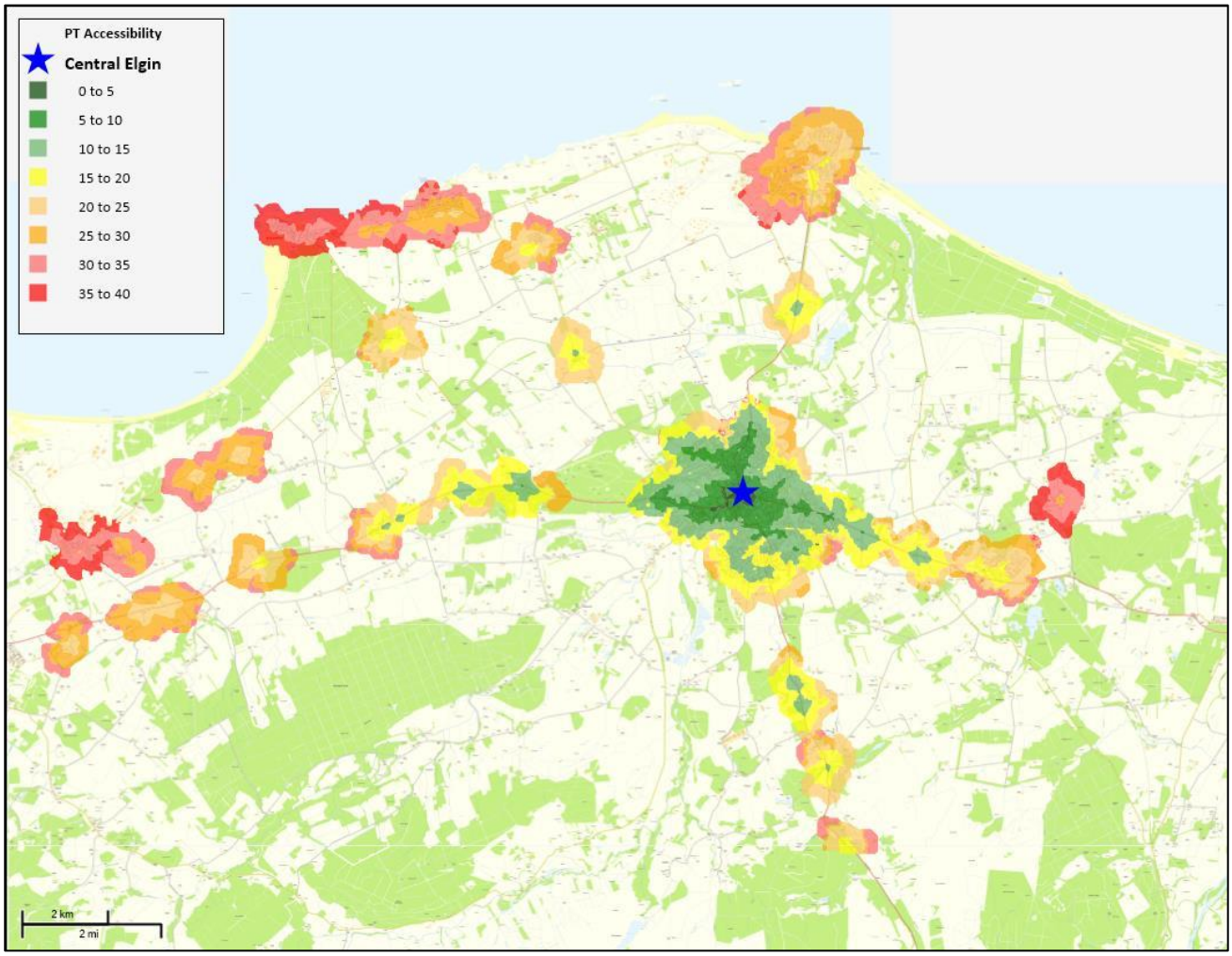


Figure 2.3 - Journey times to central Elgin by public transport

2.2.4 Vehicle Accessibility

Figure 2.4 displays accessibility to Elgin town centre within a 40 minute catchment area by car. It is clear, in comparison with other modes of travel, that car provides the greatest distance coverage of the area around Elgin, although it is noted that this analysis does not account for the potential of congestion during peak times or time taken to find a parking space close to the town centre. Table 2.2 indicates the journey times to Elgin town centre from a selection of surrounding settlements within this catchment.

Table 2.2- Vehicle accessibility within 40 minutes

Estimated Journey Time	Settlement
0 – 15 minutes	Duffus, Elgin, Fochabers, Lhanbryde, Lossiemouth, Kellas
16 – 30 minutes	Buckie, Forres, Keith, Rothes
31 – 40 minutes	Cullen, Huntly, Dufftown, Aberlour, Nairn

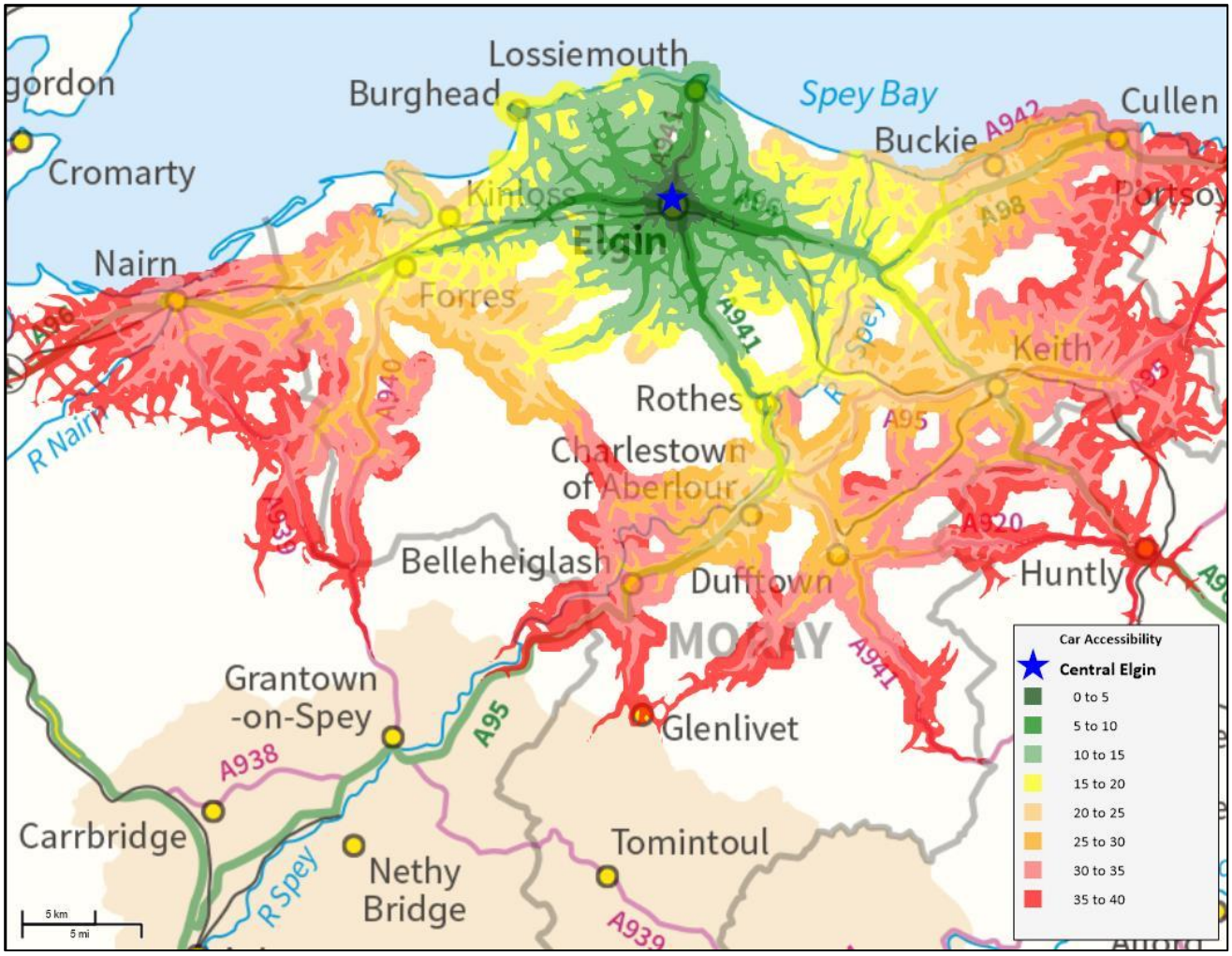


Figure 2.4 - Journey times to central Elgin by car

2.3 How People Travel

The results of the 2011 Scotland Census provide data on the overall mode share for journeys to work and study, for those who both live and work or study in Elgin. Figure 2.5 outlines the trends but in summary (figures are rounded to nearest whole number):

- **Car** is the most dominant of all transport modes, attributing to 41% of the mode share;
- **Walking** is the second most popular mode of travel, accounting for nearly 27% of journeys;
- **Car Sharing** contributes to 11% of the mode share;
- Almost 9% of Elgin's population **Work or Study from Home**;
- **Public Transport** (Bus and Train combined) accounts for almost 7% of the mode share;
- 3% of people from Elgin **Cycle** to work or study;
- **Active Travel** (walking and cycling) accounts for 30% of the total mode share for these journeys within Elgin.

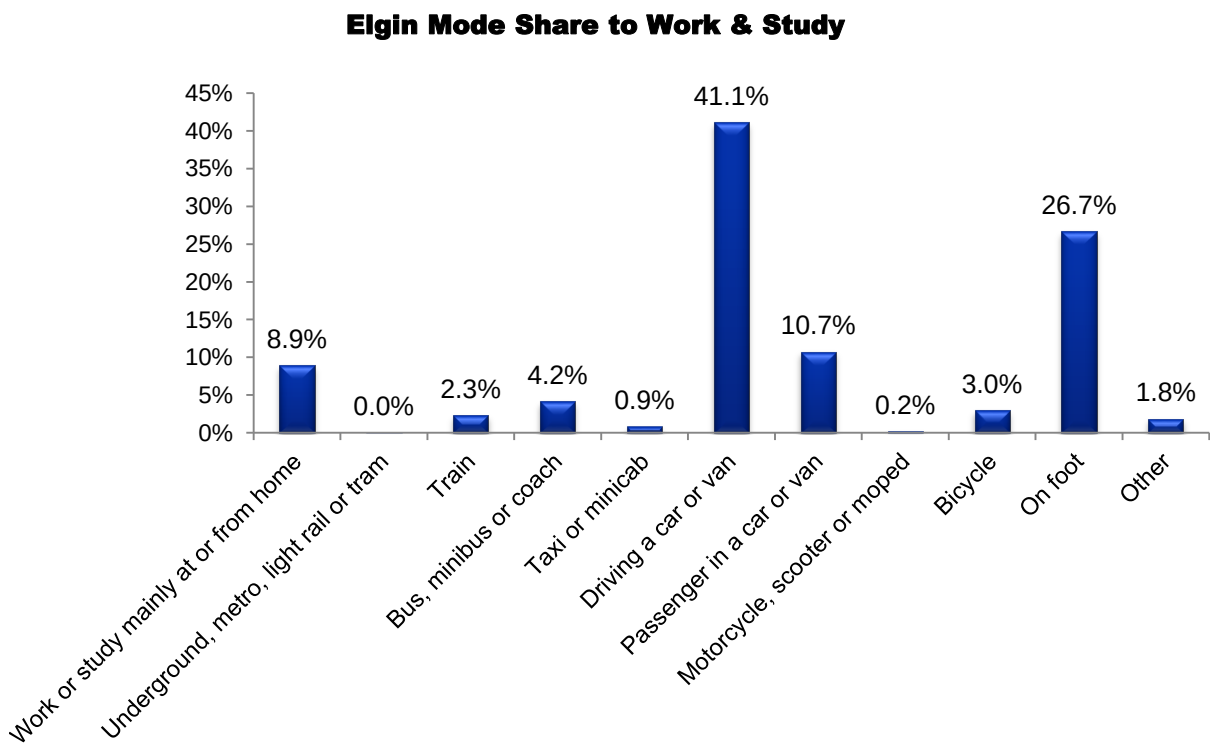


Figure 2.5 - The percentage mode share for Elgin's population going to work and study, according to the 2011 Scotland Census

2.4 Where People Are Travelling To / From

How people currently travel into, around and out of Elgin is of vital importance to this study in order to identify the demand on routes so as to target actions to achieve the highest impact and value for money. In order to do this Origin-Destination data, also obtained from the 2011 Scotland Census, was analysed as a basis for understanding where people are travelling to and from, in and around Elgin.

2.4.1 People travelling within Elgin to work

Overall, 60% of Elgin's population travel to work in Elgin as displayed in Figure 2.6, with 40% travelling elsewhere. Specifically:

1. Around 19% travel to the central-east area of Elgin which includes the north-east quadrant of the town, Ashgrove and Pinefield areas. High employment is present in this area, with retail and office developments in the town and industrial complexes further to the east along the A96.

2. Around 15% travel to the New Elgin and Bishopmill / Newfield areas. This area captures the St Giles Shopping Centre and Tesco Extra, though is largely residential.

3. Around 14% travel to the Elgin Central West area, which includes the west end of the town centre. Excluding this, it is largely residential although it accommodates a hospital and healthcare facilities, leisure businesses and Elgin Academy.

4. Around 12% travel south of the railway towards New Elgin for work and study. Located here are the Springfield Retail Park and ASDA, as well as Elgin High School and New Elgin Primary School.

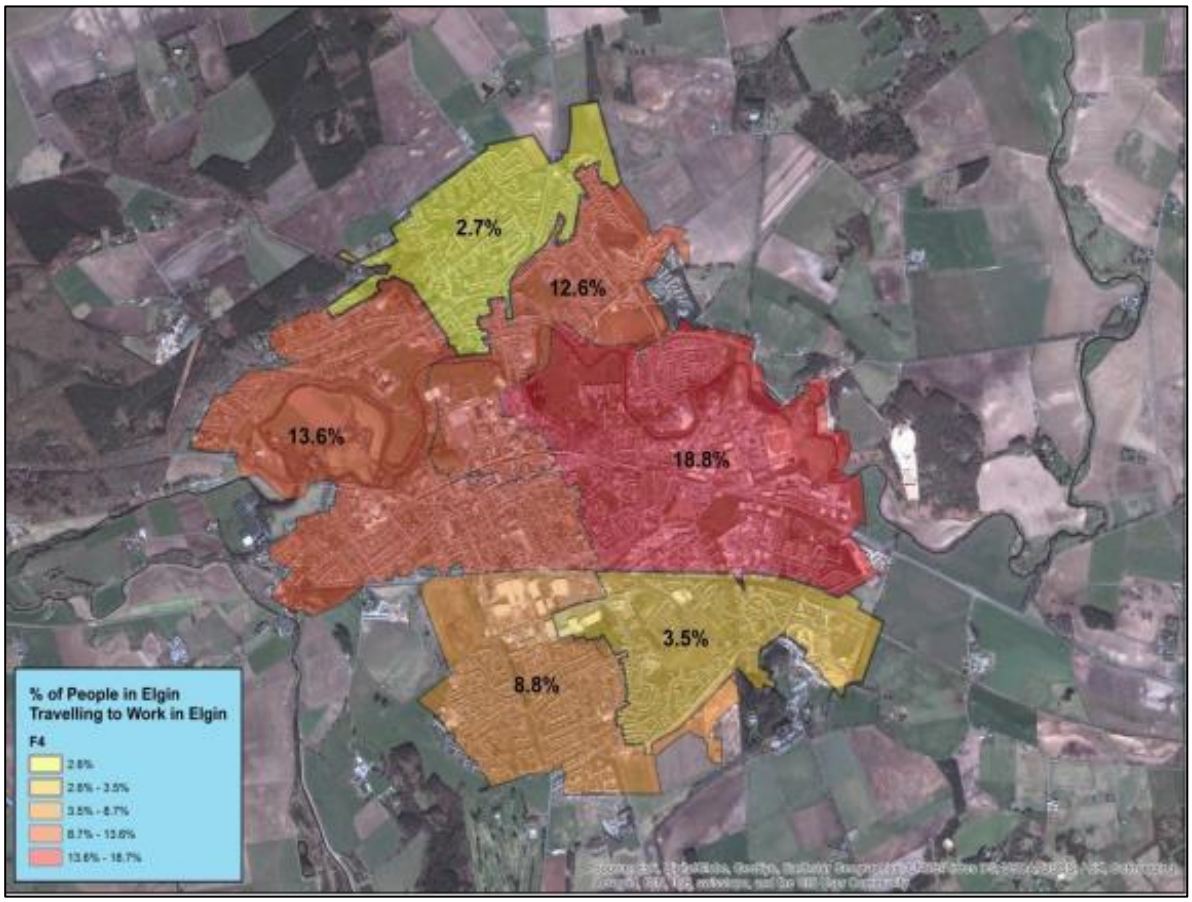


Figure 2.6 - Percentage of people from Elgin who travel to work in Elgin, including the area of their destination

When asked why they made their last journey, respondents to the 2016 Elgin Transport Survey (undertaken by TMC to support this study), stated that the majority (61%) were “commuting to/from work”. Other answers included travel for doctors and dentist appointments, shopping and leisure and doing the school run. There are therefore clearly a variety of reasons why people travel in and to Elgin reinforcing that future transport planning should consider access for a variety of journey purposes including employment, healthcare and schools related trips.

2.4.2 People travelling to Elgin to work

Figure 2.7 displays mapped census data of where people travel from in the North / North East of Scotland to Elgin for work or study.

Analysis found that most inbound journeys to Elgin originate from within The Moray Council local authority area. Lossiemouth represents the biggest contributor of movements to Elgin from within Moray at about 8%, with a further 5% of people travelling from Forres, 3% from Buckie and 1% from Keith.

There are fewer people who travel to Elgin from out with The Moray Council area, including Inverness and Aberdeen City which only account for 0.6% and 0.2% of Elgin’s working population respectively.

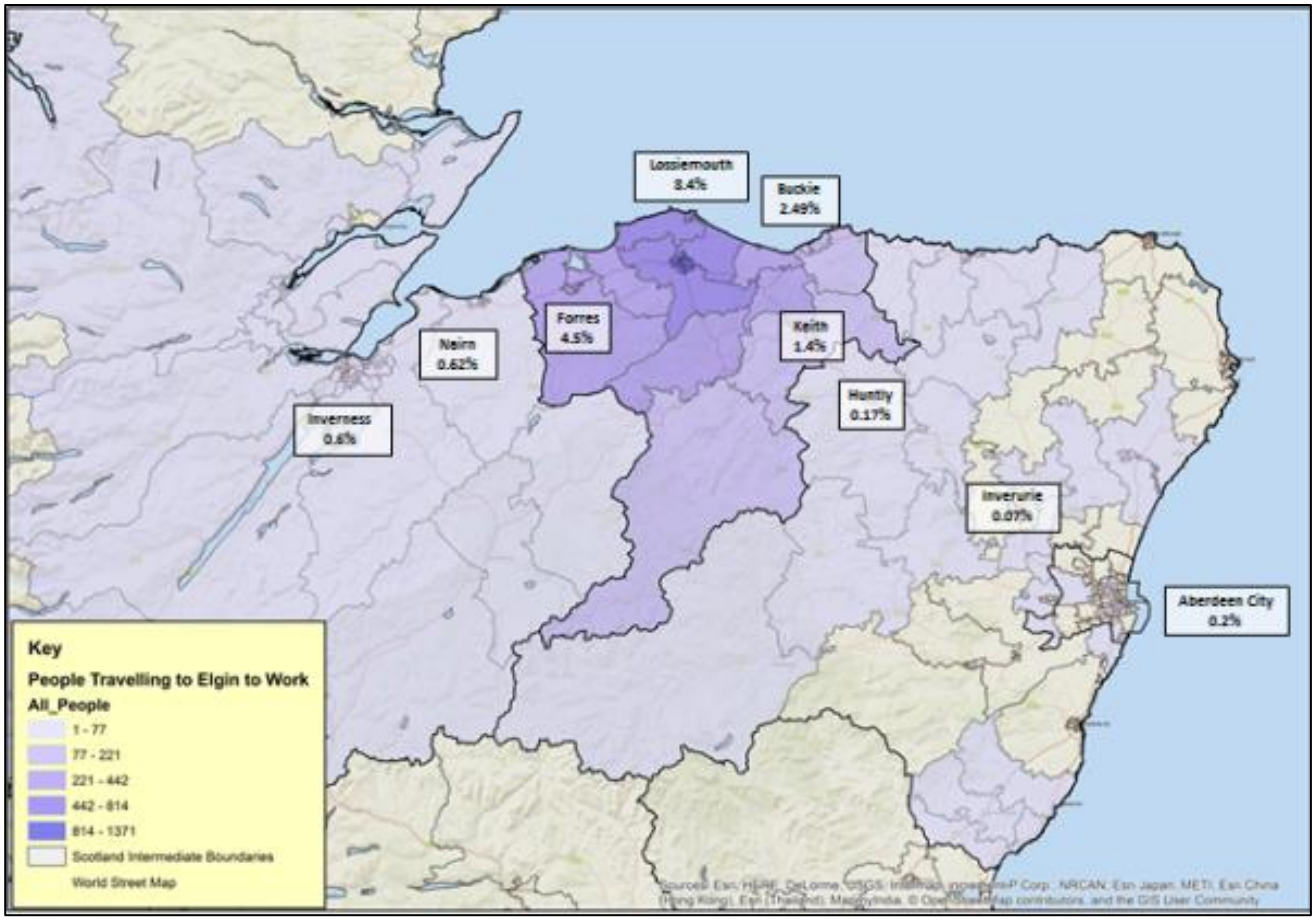


Figure 2.7 - Map displaying where people travel from to work in Elgin

2.4.3 People travelling from Elgin to work

The results of an analysis of those who live in Elgin but travel out with for work is outlined in Figure 2.8, showing journeys to the North / North East of Scotland to work.

Compared to people travelling to Elgin for work, there are far fewer people travelling out from Elgin throughout Moray, reiterating Elgin's status as a hub for employment within The Moray Council area.

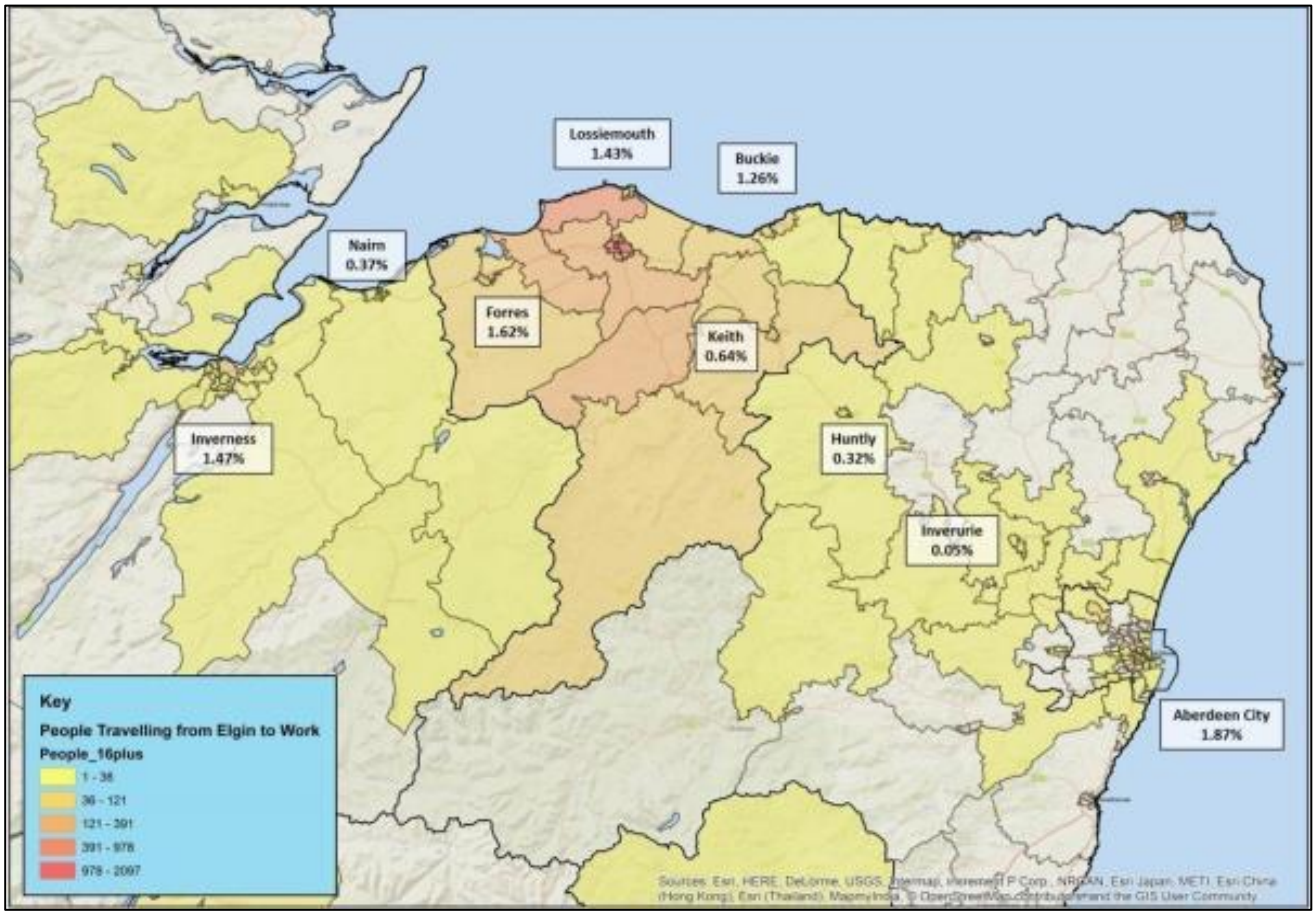


Figure 2.8 - Map displaying where people from Elgin travel to work

2.5 Travel by Car

2.5.1 Overview / Introduction

Data from the 2011 Scotland Census indicates that Elgin has a relatively high level of car ownership at 80%, compared to 70% nationally, and it is already known that 40% of people travelling to work and study in and around Elgin use cars to get there. This is perhaps unsurprising as travel by car represents the most accessible mode of transport for outlying areas to Elgin, as demonstrated with the TRACC analysis mentioned previously in Figure 2.4 – albeit this does not allow for any localised congestion.

The following analysis highlights the existing trends on Elgin's roads over a period 2010 to 2015, with data being derived from a number of sources including permanent and temporary traffic surveys.

2.5.2 General Traffic Trends

Between 2010 and 2015, average daily traffic on select road links increased by approximately 5%, effectively equating to an estimated 8,900 extra cars on the roads within Elgin over the course of a day (Figure 2.9).

2.5.3 A96 Trunk Road Through Elgin

Traffic has increased by around 2% on the A96 route between the West Road and Lhanbryde ATC traffic counters since 2010, representing roughly 1,700 extra vehicles. The highest growth across a single day occurred on the A96 West Road and East Road sections. Both these sections are located in the areas with the highest percentage of people going to work (see Figure 2.6). Traffic on the A96 within the town centre has grown marginally, with High Street West and the Town Centre only increasing by 1.4% and 1.5% respectively.

There has been a slight reduction on the A96 at Lhanbryde (-0.6%), suggesting less journeys are being made on the A96 to the East. There has also been a 7% reduction in daily traffic on Alexandra Road, possibly indicating that this route is congested and traffic may be avoiding this area to use alternative routes.

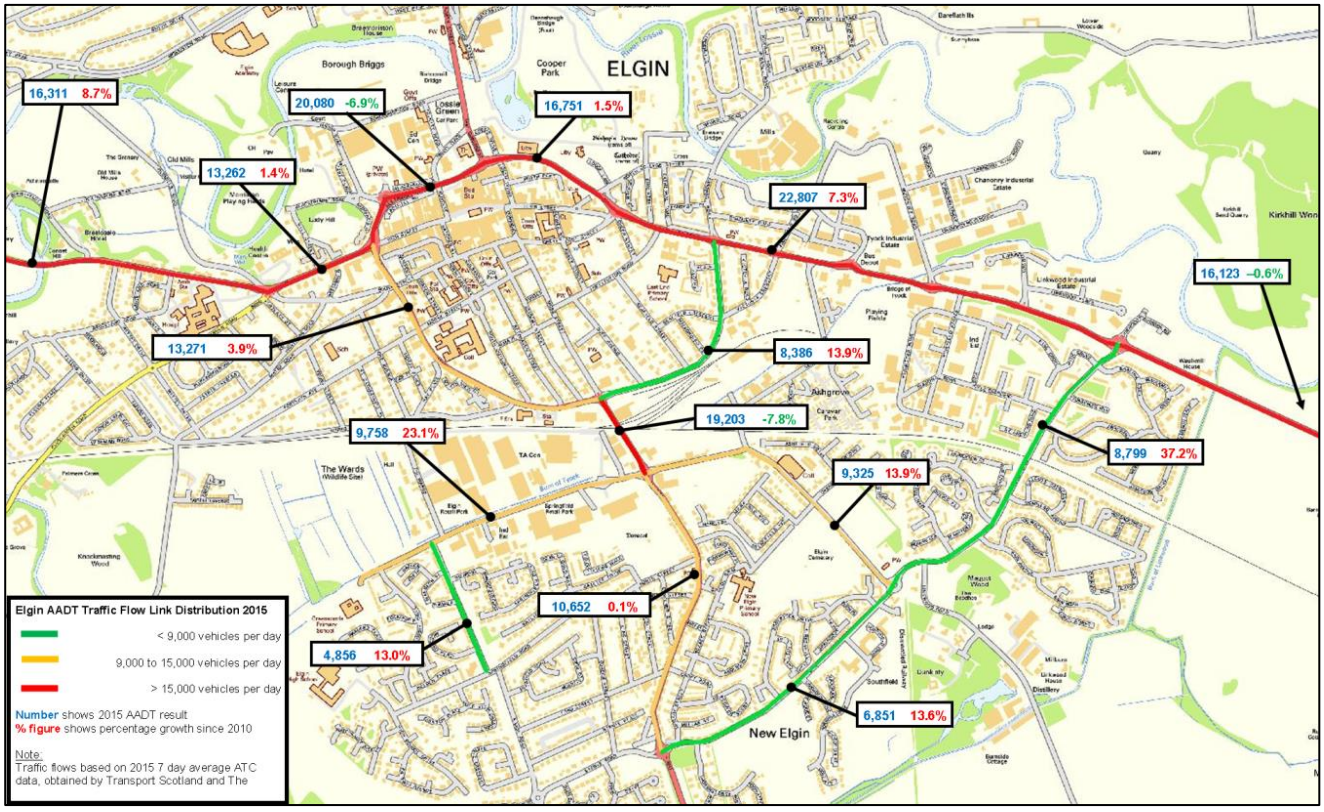


Figure 2.9 - Elgin AADT Traffic Flow Link Distribution in 2015 with percentage growth since 2010 (Traffic flow links based on 2010 and 2015 average ATC data from Transport Scotland & The Moray Council)

The proportions of vehicles passing through Elgin on the trunk road, as opposed to those travelling into Elgin, are known due to the availability of data from a recent (2014) Automated Number Plate Recognition (ANPR) survey. The results indicate that around 25% of trunk road traffic travels through Elgin, with the remaining 75% of traffic routing to and from destinations in Elgin. This is important as the majority of trunk road traffic must therefore turn off or onto the A96 from or to the local Elgin road network, potentially increasing delay at junctions.

2.5.4 Local Roads

Traffic levels on local roads (excluding the A96) have risen overall since 2010 by around 8%, representing an increase of approximately 7,200 vehicles on the road network across an average day. The largest individual growth (37%) was observed at Reiket Lane, followed by Thornhill Road (28%) and Edgar Road (23%). It is interesting to note that these roads are all located south of the railway line, with this growth probably linked to significant housing development in this area over the last 5 years.

There has been only one observed reduction in average daily traffic on the local road network, occurring at the A941 Bridge over the Railway where there has been decrease of 7.8% since 2010. Evidence suggests that part of this is due to vehicles avoiding this busy part of the network and travelling via alternative routes, as demonstrated by increases in traffic on Thornhill Road and Reiket Lane.

2.5.5 Peak Hour Traffic

Analysis has shown that the peak times on the road network in Elgin are between 08:00 and 09:00 in the morning and between 16:00 and 17:00 in the evening and that since 2012 there has been a 22% increase in traffic during the morning peak and a 25% increase during the evening peak. A breakdown of the changes is shown at Table 2.3:

Table 2.3 - Peak Hour traffic growth on local roads from 2012 to 2015

Road Link	% Growth 2012-15	
	AM	PM
Linkwood Road	19%	54%
Maisondieu Road	7%	12%
Reiket Lane	27%	17%
Thornhill Road	32%	22%
Wittet Drive	29%	20%

2.5.6 Why People Drive To / From / Within Elgin by Car

The main reasons for people using car as a mode of transport for journeys to Elgin were analysed from responses to the 2016 Elgin Transport Survey. It was found that around 78% of drivers travel by car because of convenience, with a further 66% finding it very difficult to travel only using sustainable modes. Responses repeatedly highlighted that the bus service provision is inadequate in allowing people to complete multiple tasks throughout the day (e.g. shopping and picking up schoolchildren).

Despite this, car drivers are frustrated by the delays on the A96, particularly at the junctions and roundabouts, stating a desire to see the flow of the road improved. It was also noted that there is a lack of enforcement of on-street parking provision in the town centre, often leading to regular instances of improper parking of vehicles partially blocking roads and footpaths.

2.5.7 Accident Data

In line with Government guidance, safety must be at the forefront of any transport strategy. Accident rates in Elgin were therefore considered in an attempt to identify areas of the road network that are causing any safety issues. The map at Figure 2.10 displays the location of all road accidents in Elgin from 2011 to 2015.

The severity of accidents are categorised as slight, serious and fatal. Analysis has shown that most accidents occur on the main roads and at roundabout junctions, specifically:

1. A96 – east of A96/A941 roundabout through to A96/Reiket Lane roundabout.
2. A941 (north and south), particularly between Station Road and Edgar Road/Linkwood Road roundabout.
3. Reiket Lane – from McMillan Avenue to A96 roundabout. Significant number of slight accidents, with a few severe accidents too. This continues to Thornhill Road with at least 3 slight and 2 serious accidents.
4. A96 / Pansport Road/ Maisondieu Road roundabout.

Further observations include:

5. No fatalities were recorded during this time period.
6. Some serious accidents recorded in areas of high pedestrian activity (e.g. in or close or town/retail centres).
7. Dispersed cases of slight accidents in residential areas.

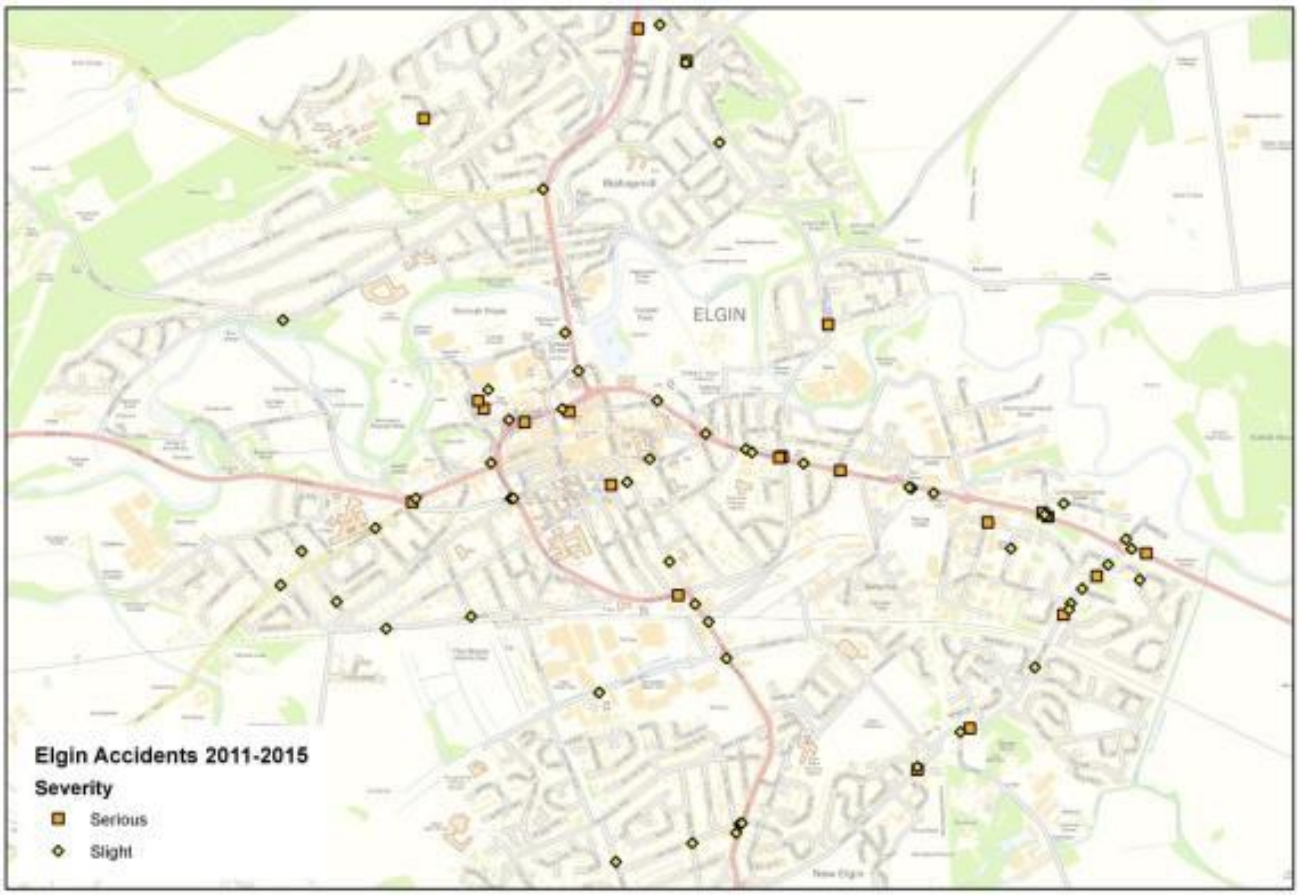


Figure 2.10 - Map displaying the locations of all road accidents in Elgin from 2011 to 2015

2.6 Public Transport

Bus mode share accounts for around 4% of journeys to and from Elgin, with train accounting for 2%. The majority of bus services are provided by commercial operators, either via regional or more localised Elgin town services, and additionally The Moray Council operates a Demand Responsive Transport Service “Dial M for Moray” providing both town and rural service provision on demand. Public transport accessibility analysis for Elgin showed estimated journey times of:

1. Up to 15 minutes to the outer perimeter of Elgin;
2. 15 to 20 minutes to Lossiemouth;
3. 20 to 25 minutes to Hopeman, and;
4. 30 – 35 minutes to Burghead.

2.6.1 Bus Services

It should be noted that, whilst public transport journey times are a key indicator of quality of service, the number of services available across an hour to travellers, or service frequency, is also important. Figure 2.11 illustrates the frequency of bus services around Elgin during the morning period of 07:30 – 08:30.

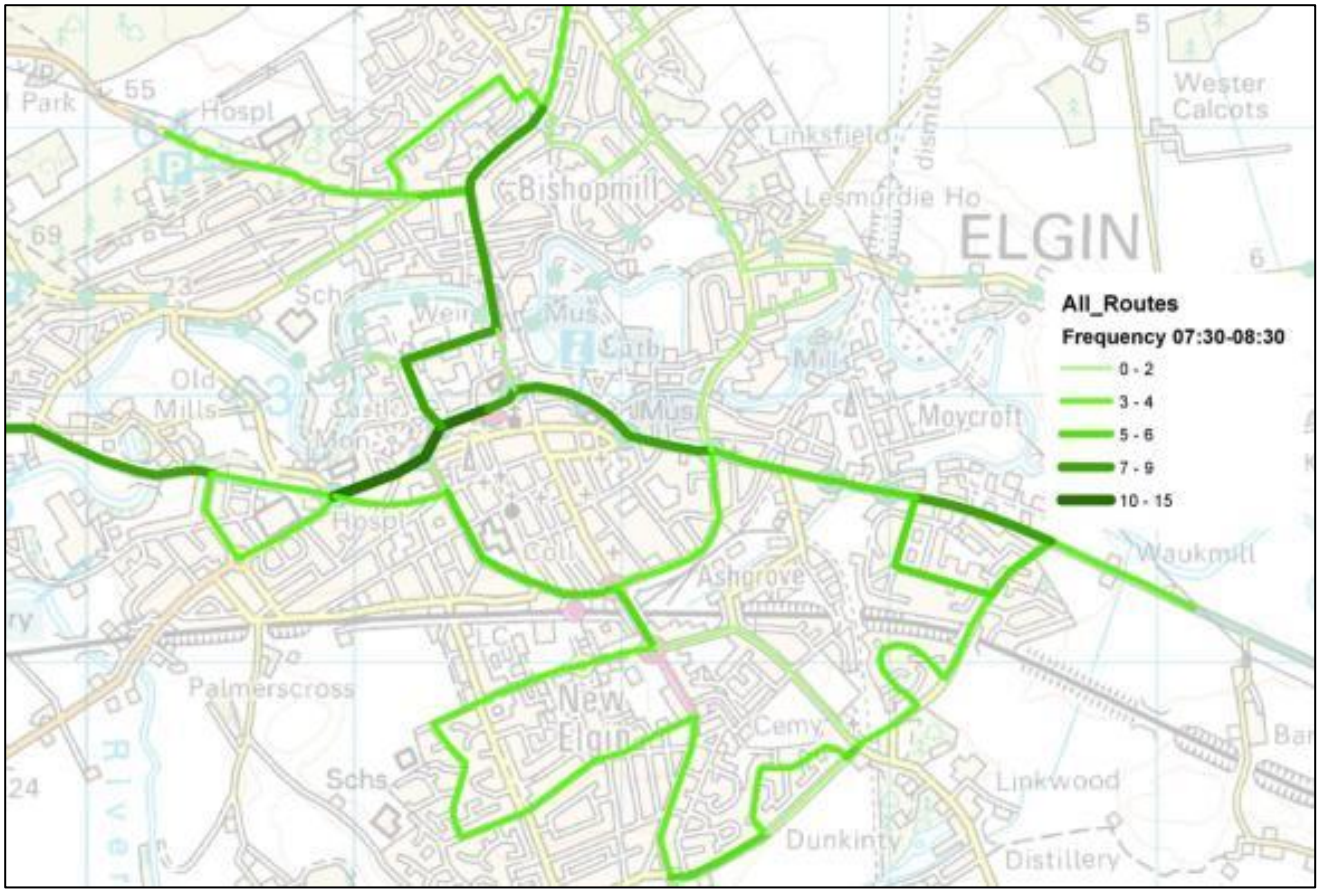


Figure 2.11 - Frequency of bus services within Elgin between 07:30 and 08:30

Figure 2.11 shows:

1. The highest bus service frequency is on the A96 just to the west of the town centre, between the Hospital and Maisondieu Road. Passengers can expect 10 to 15 buses between 07:30 – 08:30 at this location.

2. Through the town centre (A96 in general), there are between 7 to 15 services during the morning period.
3. Areas around south Elgin are served with 5 to 6 services during the morning period. Elgin Train Station also benefits from these services, with this level of frequency continuing into New Elgin accommodating Elgin High School and Greenwards Primary School.
4. Bus service frequency in the north-east Elgin, particularly through the residential area of Linksfield and Lesmurdie Roads, is low with only 0 to 2 services during the morning peak. There are however 7 to 9 services on the A941 serving the north of Elgin through Bishopmill.

2.6.2 Demand Responsive Transport

As previously identified, The Moray Council operates a Demand Responsive Transport service, called "Dial M for Moray", which has been in operation in Elgin since February 2014. The Moray Council describes this service as:

> *Dial M for Moray is our award-winning accessible door-to-door bus service for those unable to use existing forms of transport or who do not have a regular scheduled bus service*[4]

Demand for the service has grown significantly, as shown in Figure 2.12 below, with patronage more than doubling in the last two years:

- August 2014-15: 1,348 passengers
- August 2015-16: 2,851 passengers

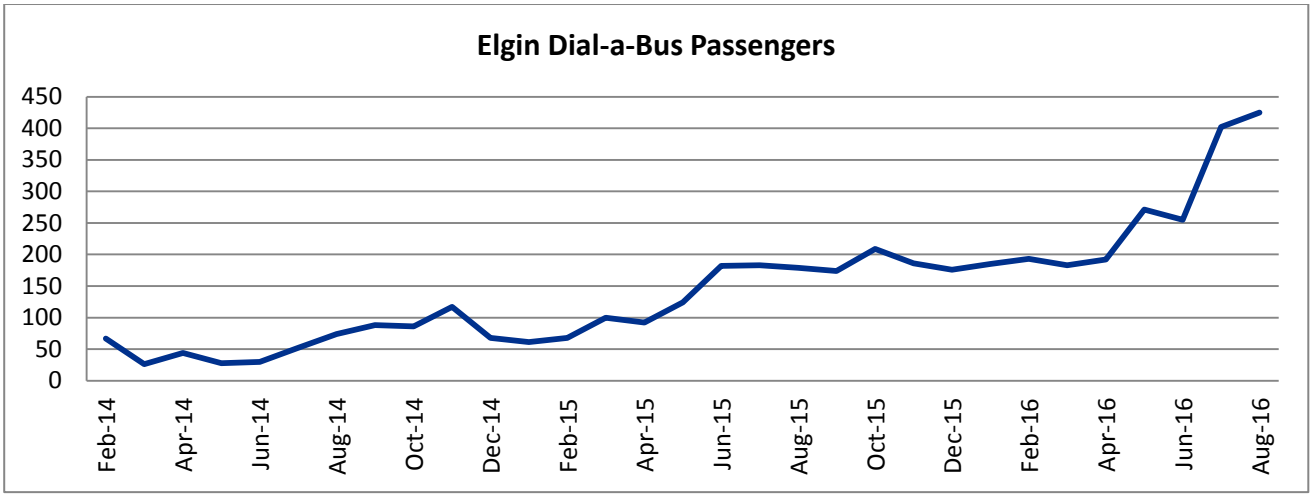


Figure 2.12 - Number of Dial M for Moray bus passengers in Elgin from February 2014 to August 2016

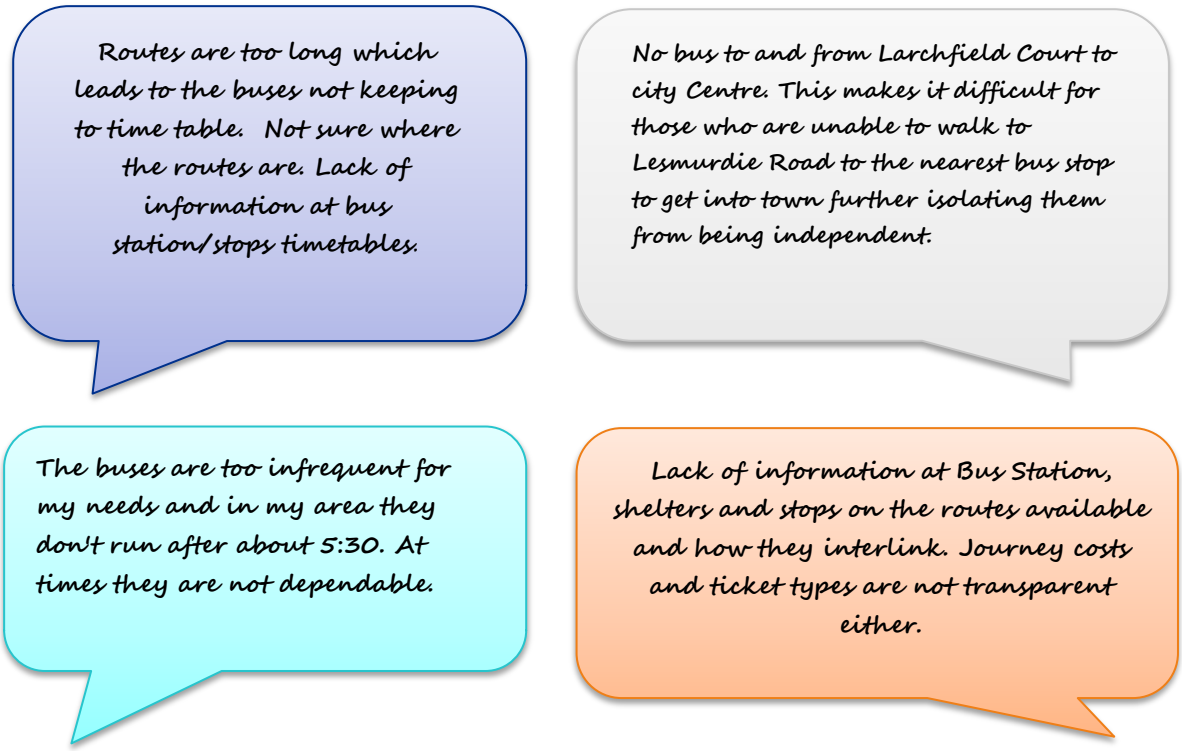
The main trends identified are:

- Patronage appears to stagnate over winter, but with strong growth during the Spring.
- Passenger numbers spike by around 30-40 in the months of October and November. This growth could possibly be attributed to older people accessing local GPs and hospitals for flu jabs.
- The service clearly experiences its highest demand during the summer months.

2.6.3 Perception of Bus Provision

Asked if the bus network adequately covered the Elgin area, 27% of respondents did not feel it was adequately covered. There was further dissatisfaction with the frequency and service quality of bus services in Elgin. Some comments include:

[4] The Moray Council website: http://www.moray.gov.uk/moray_standard/page_52932.html



2.6.4 Rail Services

As outlined previously, rail usage accounts for 2% of Elgin's mode share for journeys to work and study. This relatively low share is likely to be as a result of the low number of people who commute from Elgin to other locations, combined with the low numbers of people that commute to Elgin from settlements with a rail station, i.e. Lossiemouth and Buckie, being the main external trip generates to Elgin, do not have a rail station.

Despite this, a regular service operates through Elgin with the current rail timetable indicating that Elgin Railway Station accommodates 3 services during each of the 07:00-09:00 and the 16:00–18:00 time periods. Interestingly recent figures have shown there to be a consistent increase in annual patronage of around 5%. Figure 2.13 shows passenger numbers at Elgin station, in comparison with other stations on the Aberdeen – Inverness rail route.

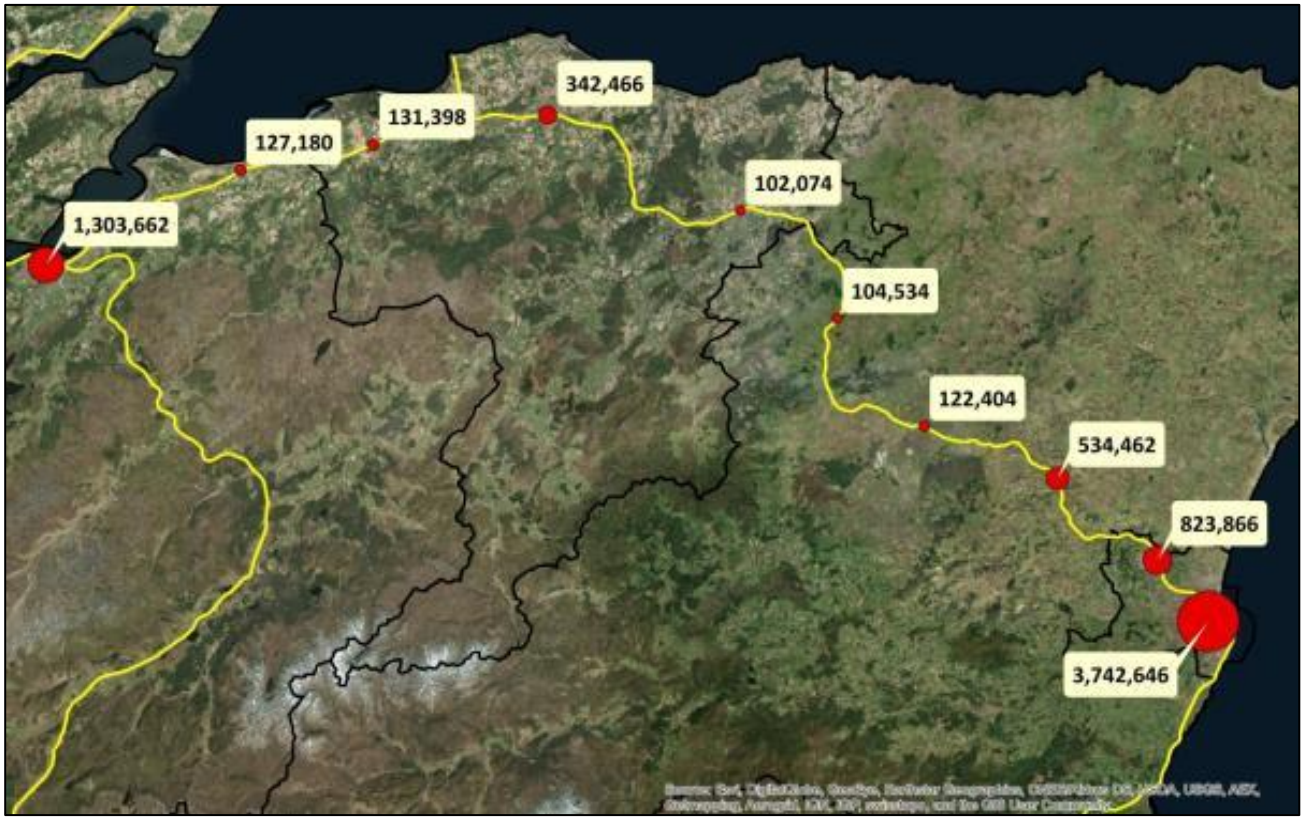


Figure 2.13 - Number of passengers at each station during 2014/15 on the Aberdeen – Inverness rail line

Overall, since 2009/10, the increase in rail patronage at Elgin Rail Station has been around 26%, or approximately 69,000 more passengers, corresponding in a peak in 2014/15 of 342,466 passengers. As such, Elgin is the most used rail station in the Moray Council area (by 210,000 passengers), and third most used station between Aberdeen and Inverness behind just Dyce and Inverurie.

For rail travel within Moray, data shows an increasing number of people are travelling by train between Elgin, Forres and Keith Rail Stations; equating to a 5% annual increase over the past 5 years. However, rail journeys to and from Moray have decreased at a rate of 3% per annum – around 540 less journeys per year.

2.7 Cycling

2.7.1 Introduction / Overview

The Moray Council and SUSTRANS, the national body for the promotion of sustainable travel, have invested heavily over recent years improving the standard and connectivity of cycle routes in / to Elgin, particularly those that link it to its outlying areas. This has aided the development of the Elgin Sustainable Transport Network (ESN) with its 6 local walking and cycle routes covering the town centre, New Elgin, Bishopmill and New Elgin West. Cycling connectivity in Elgin is therefore relatively good, with journey times from the periphery of Elgin to the town centre under around 15 minutes, as described previously in the TRACC analysis (Figure 2.2).

2.7.2 General Cycle Trends - Local

According to the 2011 Scotland Census, 3% of Elgin's population cycle to work and study, more than double the national average. Additionally, cycle count data provided by The Moray Council demonstrates an overall increase of around 18% from 2012 to 2015 at cycle count locations within Elgin, as shown in Figure 2.14. There is a particularly large increase of cyclists outside Elgin Library (70%) which, given its location, may indicate positive growth in the numbers of people commuting into Elgin by bicycle from areas to the north. Sizeable increases are also shown at Glenmoray Drive (24%) and Shaw Place (47%) which highlight a positive uptake in cycling along the recently established ESN2 and ESN3 walking and cycling routes in the south of Elgin.

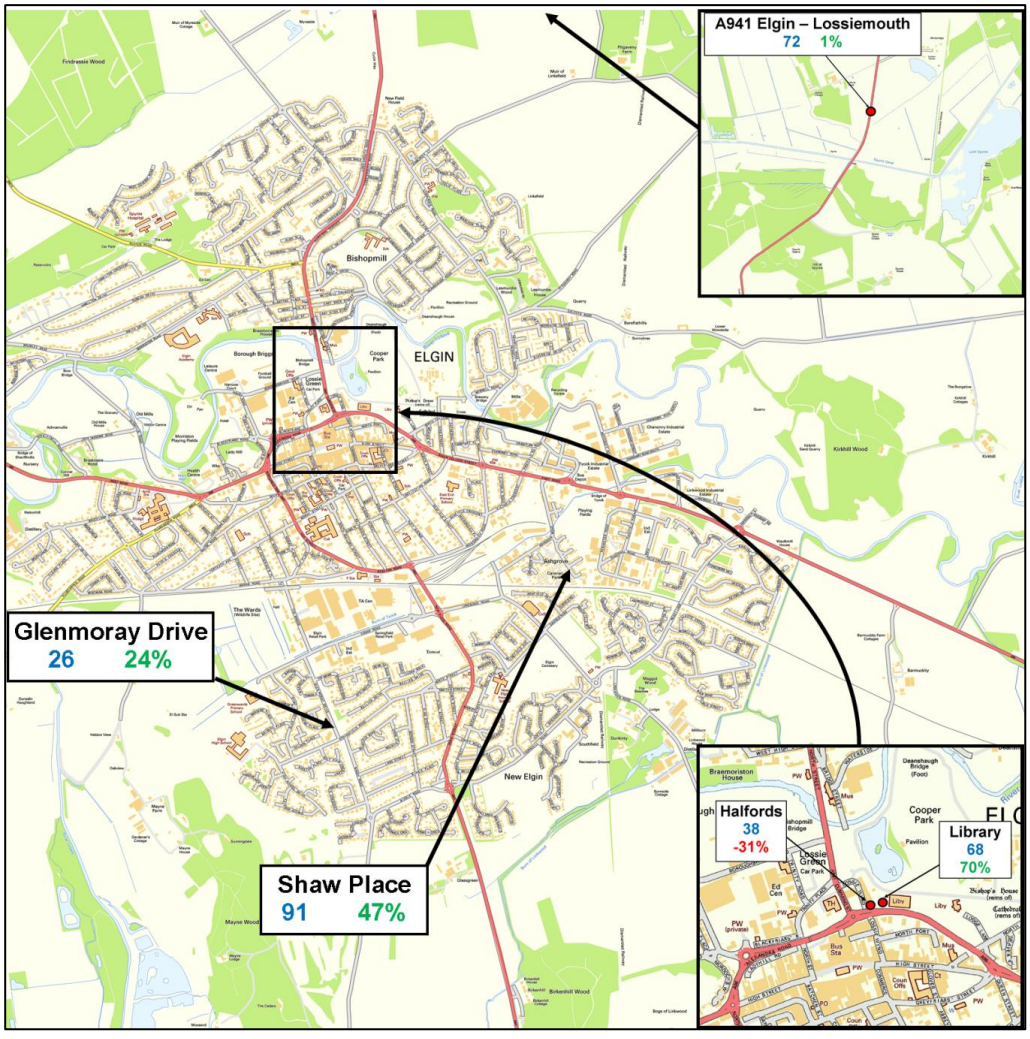


Figure 2.14 - Cycle AADT counts at ATC locations within Elgin, including the percentage growth since 2012. *Note: A941 Elgin – Lossiemouth cycle count location is situated off the map

2.7.3 General Cycle Trends – Regional / Long Distance Routes

Elgin is well located for long distance cycle routes in Moray, including several routes promoted by SUSTRANS. Overall, the average daily number of cyclists on these routes has increased by 37% since 2005, to an AADT of 240 per day. In particular, the A941 Elgin – Lossiemouth route is a feasible, short distance commuting route with an estimated journey time of 30 minutes to Elgin town centre. Cycle count data for this route, recorded approximately 5km north of the town centre, is shown at Figure 2.15. This shows that the number of cyclists on this route has grown around 4% per annum since 2005, though has stagnated slightly since 2012 with just over 70 cyclists travelling daily.

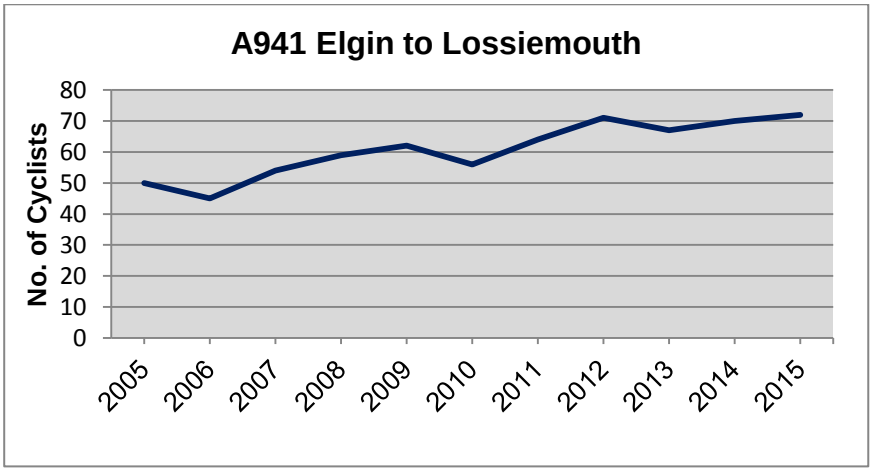


Figure 2.15 - AADT cycle count data from 2005 to 2015 for the A941 Elgin – Lossiemouth Cycle Route

2.7.4 Perception of Cycle Provision

Despite the positive growth in cycling numbers overall, cyclists responding to the 2016 Elgin Transport Survey commented that they were concerned about the cycle infrastructure and their safety, particularly in the urban area. Around 30% of cyclists do not feel there is adequate cycle network coverage, with many respondents commenting on the need for cycle infrastructure to be better maintained (e.g. road surface quality), and for more segregated lanes and off-road routes to be installed for cyclist safety. This is further highlighted with cyclists feeling the most vulnerable out of all transport modes in Elgin, scoring 1.5 out of 5 (with 5 indicating 'feeling most safe'). Cyclists find themselves using pavements to avoid the vulnerability presented by cars and HGVs on the main roads. This causes further conflict and safety concerns for pedestrians. Some comments include:

I would like to be able to cycle to work but find the roundabouts frightening and the busy traffic a problem. It would be ideal if we had a cycle path big enough to fit a bicycle all the way around Elgin.

Not enough separation from traffic, poorly maintained surfaces of cycle pathways, lack of sweeping [of roads].

2.8 Walking

2.8.1 Overview

Walking accounts for a 27% mode share for journeys to work and study in Elgin, according to the 2011 Scotland Census. This high share is likely to be due to Elgin's compact size, making it easy to access the majority of the town within a 30 minute walk, and the fact that the majority of those that work in Elgin also live in Elgin.

2.8.2 Pedestrian Counts

The Moray Council undertake town centre health checks at various locations every two years throughout the region, with Elgin town centre included in the scheme. According to the 2014 report, these health checks assess "existing town centre uses in line with Scottish Planning Policy (SPP) criteria" (TCHC 2014[5]) and include Pedestrian Footfall Surveys. Figure 2.16 displays pedestrian footfall survey data provided from previous town centre health checks carried out in Elgin.

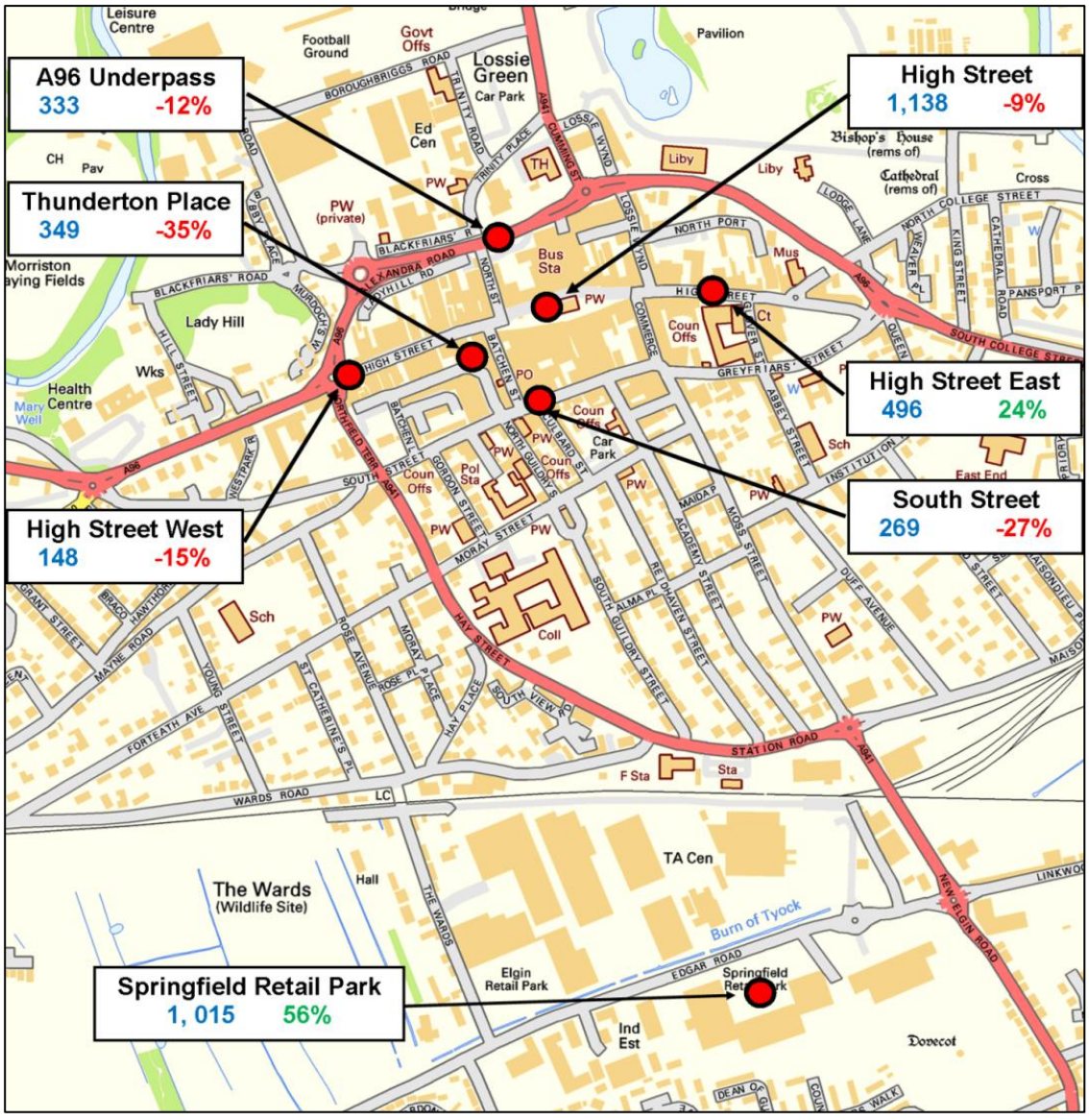


Figure 2.16 - Map displaying pedestrian footfall survey AADT data for 2016 and percentage growth in footfall in Elgin town centre and Springfield Retail Park since 2010

[5] TCHC 2014 – The Moray Council Town Centre Health Check 2014 Report.

Figure 2.16 indicates the location of all the footfall sites, with 2016 results and the percentage growth since 2010. TMC also carries out a footfall count at the Springfield Retail Park on Edgar Road, as it is "a major commercial centre and a key focus for substantial retail activity" (TCHC 2014), thus providing a useful performance comparison between the traditional town centre and modern out-of-town retail facilities.

The following trends have been identified from the pedestrian footfall data for Elgin town centre:

- **Long Term Change:** Since 2010, there has been an overall 12% reduction in the number of pedestrians counted at the survey locations with an average decrease of 4% every 2 years. This accounts for around 80 less people across the survey locations per annum.
    - Thunderton Place has seen a 35% decrease in footfall.
    - High Street (east end) has seen a 24% increase in footfall.
- **Short Term Change:** From 2014 to 2016, there has been an overall 8% reduction in walking – 248 people – at the survey locations.
    - Thunderton Place saw a decrease of 21% in footfall
    - High Street (East End) saw an increase of 18% in footfall.

The East End of the High Street is the only area in the town centre that is displaying signs of growth, with a 24% increase in footfall since 2010 and representing an average 8% growth rate every 2 years.

Edgar Road / Springfield Retail Park

As identified, TMC also undertakes Pedestrian Footfall Surveys at the Springfield Retail Park, on Edgar Road. Data from there surveys shows that, since 2010, there has been a 56% increase in pedestrian footfall in this area. Responses to the Elgin Transport Survey include comments from car drivers of poor access to the town centre, including the lack of enforcement relating to inappropriate parking and there is an indication that visitors to the town by car are potentially shopping in the retail park rather than the town centre due to ease of parking.

2.8.3 Perception of Pedestrian Provision

There were many issues raised by pedestrians, especially in regards to accessibility and safety.

76% of respondents responded that walking in Elgin is easy and direct, but acknowledged shortcomings in terms of the pedestrian infrastructure such as:

- Poor pavement quality (too bumpy; too narrow), especially for elderly people and families with prams.
- Signage and connections between pedestrian routes could also be improved.
- Too many roundabouts, along with unsafe crossing points on the A96.

Regarding safety, pedestrians scored 3.5 out of 5 in terms of how safe they feel, they scored this higher than cyclists did. However, pedestrians feel vulnerable to cars when crossing the A96; and noted:

Not enough pedestrian crossings. The roads are very busy and very dangerous when there's only a narrow footpath for me and my child to walk on in the Bishopmill area.

A number of pavements are in a poor state of repair, cars parked on pavements, pavements within the town centre are narrow and very close road/parked cars.

2.9 Data Summary

The data reviewed for this study clearly highlights that car is the dominant mode of travel used for travel to / from and within Elgin. There has been strong growth in traffic levels in and around Elgin over the last half decade, particularly on main routes south of the rail line and the A96, especially during the morning and evening peaks. This is a significant contributor to increased congestion, the number of accidents focussed around the busy traffic routes and the apparent reluctance to walk or cycle near busy traffic routes.

Despite this, walking remains the second most popular mode of transport within Elgin, likely due to the compact nature of Elgin, its lack of hills and its path network that has been developed over recent years. It is noted that there have been falls in pedestrian activity around some areas of the town centre, with subsequent increases around the retail park.

Despite an apparent view that the local bus network is thinly spread, and does not offer frequencies high enough to encourage use, bus is the third most popular mode of travel in Elgin. A review of the Elgin bus network shows central areas are well covered by frequent services but the rural nature of much of Elgin makes it difficult to provide a wide coverage commercial bus network to many areas outside Elgin. As such, TMC has recently implemented a Demand Responsive Bus Service for the Moray area and this has shown significant growth in patronage since its introduction.

Cycling, despite being only the fourth most popular mode of travel in Elgin, has seen some encouraging growth in use over recent years. This is likely due to an expansion of the Elgin path network, paving of some routes into Elgin and the fact Elgin has few his. Despite this however, there is a clear reluctance to cycle in central areas where there is fear of cycle / vehicle conflicts.

Rail, whilst the least popular mode of travel in Elgin, has shown positive growth in patronage over recent years. Elgin is the most used rail station in the Moray Council area, the third most used station between Aberdeen and Inverness, behind just Dyce and Inverurie, and offers quick access to Elgin from areas served by a station.

3. The Strategy's Policy Context

3.1 Overview

As a key part of this Strategy, the relevant national, regional and local policies were reviewed, and their influence on the Strategy considered in detail. It is essential to ensure the overall vision and direction of the Strategy is consistent with national, regional and local policy and practice; in turn facilitating efficient delivery of the key objectives of the Strategy. Figure 3.1 outlines the relevant policies which have informed this Strategy:

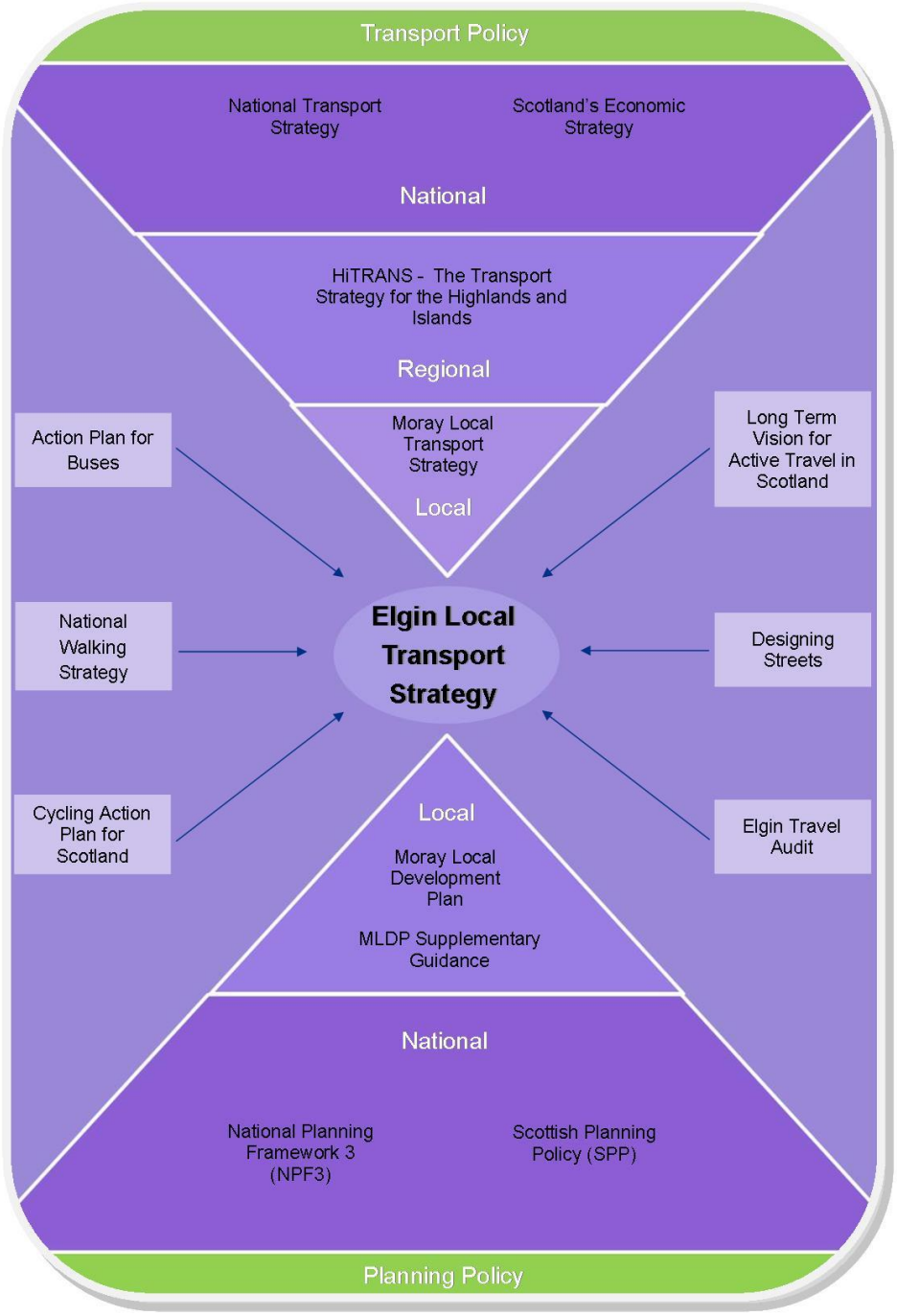


Figure 3.1 - Policy Hierarchy Relevant to Elgin Transport Strategy

3.2 National Policies

The current Scottish National Transport Strategy (NTS), which is a refresh of the 2006 NTS, considers Scotland's transport needs from a national point of view and sets out the Government's long term vision for the transport policy. The document defines three key strategic outcomes:

- *Improved journey times and connections, to tackle congestion and lack of integration and connections in transport*
- *Reduced emissions, to tackle climate change, air quality, health improvement*
- *Improved quality, accessibility and affordability, to give choice of public transport, better quality services and value for money, or alternative to car*

The NTS, along with Scottish Planning Policy (SPP), National Planning Framework (NPF) and Scotland's Economic Strategy, form the overarching national policy framework for which Local Transport Strategies are required to align.

The Scottish Government's *Designing Streets* national policy statement has been created to ensure that good street design should derive from an intelligent response to location, rather than the rigid application of standards, regardless of context. The document, which sits alongside Designing Places, sets out the Government's aspirations for high quality design and the role of the planning system in delivering this through mechanisms such as Local Development Plans.

3.3 Regional Policies

Highlands and Islands Transport Partnership (HITRANS) is the regional transport body for Moray and it has stated a Regional Transport Strategy (RTS) vision of enhancing the area's viability and delivering benefit to communities and businesses in the HITRANS region, which includes The Moray Council area. The RTS provides a framework for the transport activities of constituent councils, health boards and others and sits within a hierarchy of transport policies between the NTS and Local Transport Strategies.

The primary objective for the RTS is to improve the interconnectivity of the whole region to strategic services and destinations in order to enable the region to compete and support growth. Supporting objectives are;

- *To enable people to participate in everyday life*
- *To improve the safety and security of travel*
- *To improve people's health; and*
- *To manage impacts on our environmental assets*

HITRANS notes that a widely-dispersed population can make the delivery of public transport expensive and inefficient, leading to difficulties in providing an effective transport network. Poor transport networks detract from the attractiveness of an area to live and work in. Sparse transport networks also limit the ability of businesses to compete with their counterparts in less peripheral areas.

3.4 Local Policies

The Moray Local Development Plan (MLDP), which was adopted in June 2015, outlines a spatial strategy for directing growth in Moray for the next 10-20 years. In relation to transport, the MLDP seeks to provide improved road links while supporting the reduction of emissions and the promotion of a sustainable transportation network and sets this out through a range of transport and accessibility policies.

The Moray Local Transport Strategy (MLTS) aims to improve connections and accessibility and provide "*a safe, integrated, reliable and affordable transport system which is inclusive and supports economic development and the needs of local communities whilst safeguarding the environment."*

This second strategy (2011) has a continuing emphasis on road transport and providing necessary infrastructure, on account of Moray's peripheral and rural situation, whilst also promoting opportunities for public

transport, cycling and walking. The MLTS is supplemented by *People and Places: An Urban Design Guide for Moray* which illustrates best practice for development and re-development in Moray Council area in line with the principles set out in the Designing Streets and Designing Places policies.

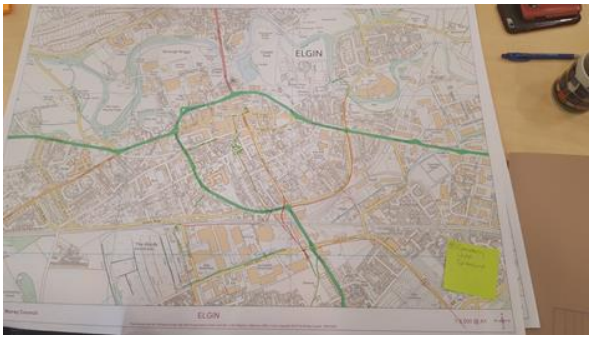
3.5 Elgin Transport Strategy

As can be seen from the preceding sections, the Elgin Transport Strategy does not exist in a vacuum but instead in a supportive context of national, regional and local policy documents. A Transport Strategy for Elgin should thoroughly consider local problems and opportunities, identified through data analysis and public / stakeholder engagement to promote its own aims and objectives but ensure these are also in line with the wider high level national, regional and local policy aims and objectives.

4. Elgin's Transport Issues and Opportunities

4.1 Overview

A fundamental component of any successful transport strategy is that it is based on a detailed understanding of the strengths and weakness of the transport network that it is improving / changing, and of the potential opportunities and threats that may exist.



The team working on this strategy for Elgin are very familiar with Elgin's transport network and how it operates. That being said, gaining an insight into the unique experiences and travel behaviour of a wide range of frequent users of a transport network is considered good practice and clearly invaluable to this study. Additional insight into the views and experiences of key bodies that own, operate, oversee or have a particular vested interest in elements of the network is also considered invaluable. A vital component of this study has therefore been the undertaking of a significant amount of consultation with various key parties, including the public and stakeholders.

This consultation has provided a significant amount of useful information on views of the key Strengths, Weaknesses, Opportunities and Threats (SWOTs) relating to Elgin's transport network and an in depth analysis of all of this information formed a strong base for discussion and agreement with TMC Officers as to the key SWOTs that should inform this study going forward.

The key themes derived from the SWOT analysis have been used in forming Specific, Measurable, Attainable, Realistic and Timely (SMART) Objectives upon which to any future actions created to address the SWOTs could be robustly assessed.

4.2 Consultation

Separate strategies for Stakeholder and wider public consultation were adopted, both being jointly undertaken by TMC and Jacobs. The Stakeholder engagement was mainly undertaken through a series of interactive workshops held in Elgin, hosted by TMC at the Council Headquarters and St Giles Church. The public consultation element was mainly undertaken through the issuing of an online travel survey, which was also supported by a series of public drop in sessions at St Giles Shopping Centre and Dr Gray's hospital.

4.2.1 Stakeholder Consultation

Stakeholder engagement was undertaken with a range of invited representative's from key organisations that formed a 'Stakeholder Reference Group'. Organisations invited as part of this group included the following:

- Abellio (Rail Operator)
- Deveron Coaches
- Elgin Business Improvement District
- Elgin Community Council
- Elgin Youth Cafe
- Freight Transport Association

- Grampian Fire & Rescue
- Heldon Community Council
- HIE Moray
- HITRANS
- Innes Community Council
- Living Streets Scotland
- Mayne Coaches
- Moray Council
- Moray Disability Forum
- Moray Outdoor Access Forum
- Network Rail
- NHS Grampian
- Police Scotland
- Robertson Homes
- Savills Smiths Gore
- Scotia Homes
- Scottish Ambulance Services
- Springfield Properties
- Stagecoach
- Sustrans
- TMC Councillor's for Elgin City South, Elgin City North, Heldon and Laich, and Fochabers and Lhanbryde Wards
- TMC Countryside Access
- TMC Development Management
- TMC Education
- TMC Equality Officer
- TMC Housing
- Transport Scotland

During the first Stakeholder engagement event, an initial review was given outlining the information gathered for on existing and predicted travel trends for Elgin, along with a discussion on the current guidance and best practice considered relevant to the strategy. This was useful to ‘set the scene’ and make sure all of the attendees gained an insight into all the information available at that point.

Following this, the aims and aspirations of the study described to the stakeholders, making it clear that the views of all attendees were considered vital to the development of an informed, workable and successful strategy.

As a reliable means of gathering the views of stakeholders, voting technology was utilised throughout the event; this technology allowing each attendee to record easily and anonymously, via their own voting pad, their own preferences to a series of questions. To aid this exercise, a number of discussion groups were formed and all asked to discuss and note down their particular views of the key Strengths, Weaknesses, Opportunities and Threats (SWOTs) for the Elgin network. Feedback was then presented on a group by group basis to the wider audience and further discussion undertaken on these points. Following this, conclusion was reached on the top 8 SWOTs identified across all groups and all attendees were then asked to consider these before ranking them, via their voting pads, in order of strongest to weakest. Votes were recorded electronically with voting software that analysed all responses to calculate a ranked order for each SWOT; each result was then displayed to the audience for further discussion, the results were as follows:

What do you think are the top four (in order of preference) strengths of transport in Elgin?

1. Good rail facilities
2. Good cycle network
3. Compact size
4. Trunk road access
5. Elgin is a transport hub
6. Increasing bus frequencies = + patronage
7. Clear N/S/E/W corridors
8. Other towns easy to get to

12

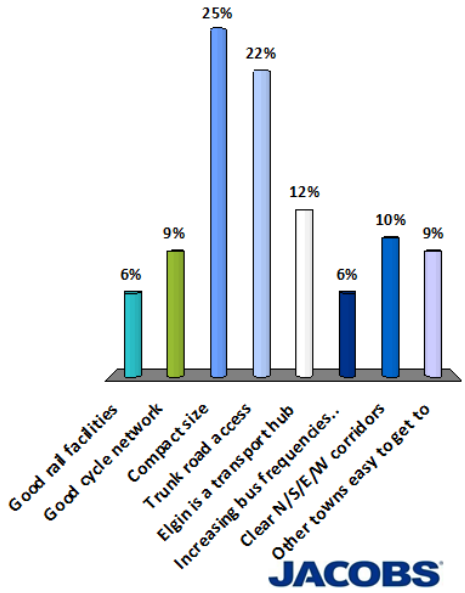


Figure 4.1 - Stakeholder Voting on Key Strengths

What do you think are the top four weaknesses of transport in Elgin?

1. A96 capacity
2. Severance by rail, road & river
3. Knowledge of bus network
4. Local road network capacity
5. Crossing points don't align
6. Lack of integration between bus / rail
7. Land-use not well integrated with network
8. Built environment constrains ability to widen paths / roads

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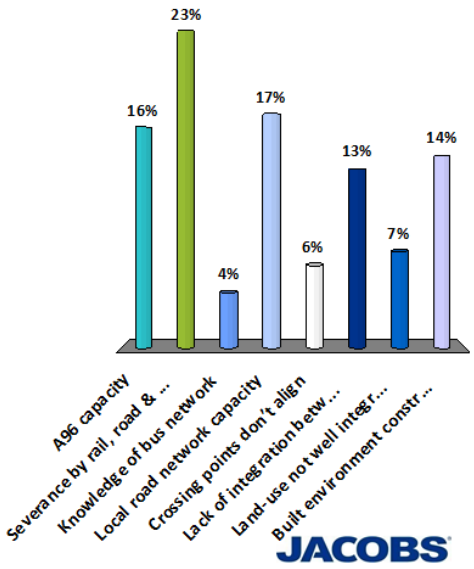

Figure 4.2 - Stakeholder Voting on Key Weaknesses

What do you think are the top four opportunities for transport in Elgin?

1. A96 bypass
2. New development = opportunity to change behaviours
3. Integration of bus / rail services
4. Rail sidings – space to do something
5. Additional rail capacity with rail improvements
6. Parking review
7. Traffic management
8. Better PT links to nearby adjacent towns

14

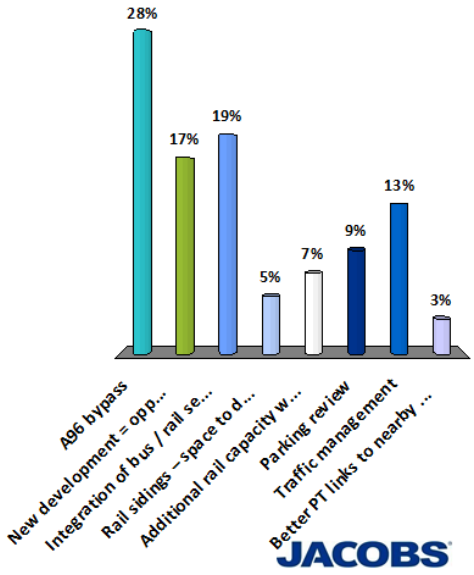

Figure 4.3 - Stakeholder Voting on Key Opportunities

What do you think are the top four threats for transport in Elgin?

1. Budgetary constraints
2. Do-nothing
3. A96 draws people away from town
4. Lack railway crossing
5. North / south expansion v east / west transport
6. Political will
7. Public misunderstanding

15

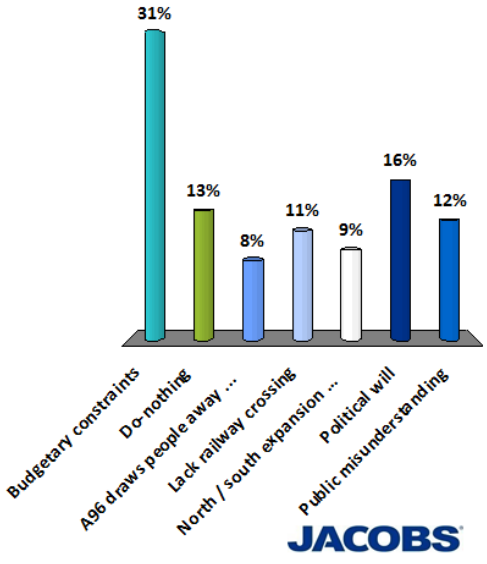

Figure 4.4 - Stakeholder Voting on Key Threats

The top two SWOTs recorded as a result of stakeholder voting were as shown in Table 4.1:

Table 4.1 - Top Two Strengths, Weaknesses, Opportunities & Threats

Rank	Strengths	Weaknesses	Opportunities	Threats
1st	Compact size	Severance by rail, road & river	An A96 bypass	Budgetary constraints
2nd	Trunk Road access	Local road network capacity	Integration of bus / rail Services	Political will

Advantage was also taken of the attendance of so many stakeholders to request feedback on a number of draft objectives, prepared for the study based on the outcomes of initial data analysis and discussions between Jacobs and TMC officers. The general consensus was that, whilst the intention of each objective was sound and agreeable, the wording was perhaps slightly difficult to understand fully, meaning they should be adjusted to include more 'plain English'. The wording of the objectives was then modified and the stakeholders again asked to vote on these and rank them from most important to least. Following the workshop, Jacobs discussed the results of this exercise with TMC and jointly agreed upon a final set of 6 objectives for the study. Stakeholders were then again asked to vote on the final objectives, this time via an online survey, to inform an objective weighting process, as will be described in more detail in following sections.

4.2.2 Public Consultation

The fact that a transport strategy was going to be prepared for Elgin was promoted by The Moray Council to the general public through a variety of means including social media, the Council's website, local press[6], engagement with local employers and through a presence at key venues such as St Giles Shopping Centre. This promotion strategy was very positively received and resulted in a wide range of responses from members of the public.


Huge response to Elgin traffic survey

3 August 2016 by Ben Hendry

More than 800 residents have responded to a survey on how to combat congestion in Moray's biggest town.

The local authority launched the questionnaire to help shape a new transport strategy for Elgin, after controversial plans to create a Western Link Road through the town were axed earlier this year.

The survey, which closed on Sunday, generated the hundreds of responses from individuals and organisations over a six-week period.

The strategy is being devised to assist with Elgin's growth, as the town expands to include more homes and businesses over the coming decades.

The main tool used to record the views of the public relating to the strategy was an online travel survey. This survey outlined a wide range of questions aimed at gathering as much detail as possible on the how and when people travel to / from Elgin, by what mode of travel and their specific experiences of the Elgin transport network. The survey allowed respondents to record their views on the strengths and weaknesses of the network and outline the sorts of measures they would like to see implemented in future, measures that would allow them to more easily undertake their journey. Example questions around the SWOTs of the Elgin transport network were as follows:

- *"What do you consider to be the three biggest transport issues within Elgin?"*
- *"Would you find it difficult to get to work and the shops if you could only travel by public transport, walking or cycling?"…"If yes, what are the reasons preventing you from doings so?"*
- *"Is the walking network easy and direct for you?"….."If not what are the shortcomings?"*
- *"How safe do you feel when (scored choice by selected mode - walking, cycling, public transport, car)?"*

[6] Press and Journal article published 03/08/16 https://www.pressandjournal.co.uk/fp/news/moray/991966/huge-response-to-elgin-traffic-survey/

As already stated, the response rate to the survey was excellent, with in excess of 800 responses from a wide range of people. Responses to the survey highlighted that the reasons for people travelling to / around Elgin varied widely, with the main themes being dropping children off at their respective schools, attending appointments, shopping, leisure and work. The information received through the survey has been invaluable in helping shape the Transport Strategy for Elgin and it will also inform an Elgin Parking Strategy and a Moray Active Travel Strategy which are also being undertaken.

The survey was complimented by a series of 'meet and greet' events held at prominent public places such as St Giles Shopping Centre and Dr Gray's Hospital. These events encouraged face to face discussions with Council officers, making use of large maps of Elgin as a means of identifying, discussing and recording individual views on the experiences using the Elgin transport network. All of this data was processed alongside the survey data and used to inform the conclusions on the main SWOTs of the Elgin network.

Some of the key SWOTs identified through public engagement were as follows:

Table 4.2 - Key SWOTs from Public Consultation

Strengths	Weaknesses	Opportunities	Threats
Easy and direct opportunities to walk	Bus network does not offer adequate coverage	Better connecting non-motorised users routes	High HGV numbers
Cycle network also caters for pedestrians and wheelchair users	Lack of pedestrian crossing opportunities	Encouraging mode shift	Distance of travel

4.3 Strengths, Weaknesses, Opportunities and Threats Summary

A thorough review of the many and varied SWOTs of the Elgin transport network, expressed by both the Stakeholders and the general public, was undertaken following the consultation phase of this study. The review recognised that feedback came from a wide range of individual respondents, each with a unique standpoint based on where each lives, why they travel and via what mode of travel together with a range of organisations with particular interests. For this reason there was a requirement to summarise responses, identify key trends and identify those top SWOTs most often identified so that this Strategy should mainly take based upon these. The top four SWOTs identified are outlined in Figure 4.5 - Top Four Study SWOTs:

Figure 4.5 - Top Four Study SWOTs

Consideration of these SWOTs contributed significantly to the formation of a vision for this strategy, the setting of final strategy objectives and the generation of options to address these and the SWOTs, as will be described in following sections.

5. A Vision for Elgin's Transport Network

5.1 Overview

The extensive consultation with the public, key stakeholders and TMC officers indicated a clear set of SWOTs that need to be addressed by a Transport Strategy for Elgin and also a real desire to ensure Elgin remains a desirable place to live, work and visit regardless of how you choose to travel to get through or around it.

Elgin is the main population centre, employment hub and retail destination within Moray, and is its administrative centre. It therefore accommodates a wide range of trips, at a variety of times of the day, from within Elgin as well as from other parts of Moray and beyond. Consultation gave a clear indication however that despite the fact that Elgin occupies a prime position on the strategic and local road networks, on the key Aberdeen – Inverness Rail Line and on medium / long distance high quality cycle networks, it is not always considered easy to move around and journeys are perceived to be delayed at certain key points. Whilst there is a clear and increasing willingness to use more sustainable forms of travel, such as bicycle, the private car clearly remains the dominant mode of travel for almost all journey purposes.

The Vision and Objectives of a Transport Strategy for Elgin clearly must seek to address these existing issues, but also consider additional factors which are likely to affect the operation of the Elgin transport network over the next two decades such as local development and planned infrastructure. As set out in the current MLDP, there is an aspiration to develop a significant number of new houses in areas on the outskirts of Elgin town centre and additionally Transport Scotland is proposing the that the A96 will be dualled along its length, potentially bypassing Elgin, and thus allowing the existing route to be de-trunked within the vicinity of the town centre. Both of these are likely to have a significant influence on travel behaviour in and around Elgin in the short to medium term, and this strategy must address both to increase the likelihood of success in delivering its Vision.

In addition, national policy and guidance requires that local authority implemented transport strategies must include significant commitment to encouraging trips on foot, by bicycle and public transport via mode shift from private car. This is in order to assist the national Government's desire to see improved air quality across Scotland's urban areas, improved public health and better use of existing infrastructure where possible.

5.2 The Vision

A review of the transport data gather for Elgin and subsequent SWOT analysis, taking cognisance of the views of stakeholders and the public, has been extremely valuable in informing discussions on what should be the vision for the Elgin Transport Strategy. These discussions concluded that the final vision for this strategy should be:

> *"A forward looking transport strategy that ensures Elgin is a desirable, vibrant and healthy place to live, work and visit for all"*

This is a bold and far reaching Vision that well designed improvements to the Elgin transport network can contribute to significantly. The degree to which the strategy fulfils this Vision, or outcomes, needs to be supported by clear Objectives however that effectively set out what needs to be done. It is against these Objectives that the success of any potential options / interventions, generated to address the SWOT themes, can be gauged. As such, it is likely that any options judged to perform well against these Objectives will contribute significantly towards the success of the strategy in fulfilling its vision. It is of fundamental importance that any objectives developed for this strategy are Specific, Measurable, Attainable, Realistic and Timely (SMART) in order to ensure that any options generated can be robustly assessed and therefore applied to the strategy reliably.

5.3 The Objectives

The Objectives for this strategy were therefore specifically generated to address the key themes outlined by the SWOT analysis, and with due consideration given to appropriate guidance. The key themes covered are access, journey time reliability, safety, increased use of sustainable modes of travel and the environment. The specific language of the Objectives was derived through consultation with stakeholders and detailed discussions with TMC officers. Whilst care was taken to ensure that final Objectives were SMART in their nature, the language used was also carefully considered so as to ensure each Objective is understandable to a wide range of potential readers of the strategy. As such the Objectives are 'jargon free', using everyday language where possible. The final agreed strategy objectives are as follows:

1. Make it easier for people to get between home, work, social activities and services;
2. Make how long it takes to get around Elgin more predictable and consistent;
3. Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport;
4. Make journeys feel and be safer;
5. Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars, and;
6. Enhance Elgin's appearance by sensitively integrating any physical changes.

5.4 Use of Objectives

In line with best practice, any potential options generated to address SWOTs should be assessed against each of the study objectives. In order to support robust assessment the degree to which each option performs against each objective was assessed using the following scoring:

Table 5.1 - Objective Scoring Criteria

Contribution towards Study Objectives	Score Awarded
Major positive	+3
Moderate positive	+ 2
Minor positive	+ 1
Neutral	0
Minor negative	- 1
Moderate negative	- 2
Major negative	- 3

As an additional layer of testing, added to increase the robustness of appraisal, weightings were applied to each objective based on stakeholder feedback received through the consultation strategy. The aforementioned stakeholder reference group was asked to vote on the final study objectives, ranking them in order from the objective that they felt was most important to the strategy through to those they felt were least important. A total of 52 responses were received to this survey and the resulting rankings and weightings applied were as follows:

Table 5.2 - Stakeholder Objective Ranking & Weighting

Objective No.	Objective Description	Share of Vote	Ranking	Weighting Applied
1	Make it easier for people to get between home, work, social activities and services;	23.1%	1st	3
2	Make how long it takes to get around Elgin more predictable and consistent;	17.5%	3rd	2
3	Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport;	16.8%	4th	2
4	Make journeys feel and be safer;	15.8%	5th	2
5	Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars, and;	18.7%	2nd	2
6	Enhance Elgin's appearance by sensitively integrating any physical changes.	8.2%	6th	1

Overall, the scoring of each objective was relatively close, meaning that whilst objective 4 was ranked 5th overall, the scoring of this was similar to those ranked 2nd, 3rd and 4th. Objective 1 was the top scoring objective whilst objective 6 was the lowest scoring objective, although it is noted that objective 6 was voted 2nd or 3rd most important objective by approximately 10% of stakeholders.

As objective 1 was clearly voted the top objective, it was considered appropriate to award it the highest weighting (3) and as objective 6 was the lowest ranking objective it was awarded the lowest weighting (1), and so it effectively received no weighting at all. Given the similar scoring to each other of objectives 2 to 5, each of these received a median weighting of 2.

The specific application of weightings to objectives, and the initial appraisal process, is explained in more detail in the following section.

6. Options for Improving Elgin's Transport Network

6.1 Overview

Following the analysis of data, consideration of the views of key stakeholders and the public, and also the development of an overarching vision and objectives for the strategy, a list of potential options was established in an attempt to address key issues and opportunities for the transport network in Elgin. This 'long list' of options was derived with reference to the strategy objectives and takes cognisance of relevant policy and guidance. It is this long list that formed the initial basis for appraisal of options against the study objectives.

An outline of the overall process followed is shown at Figure 6.1:

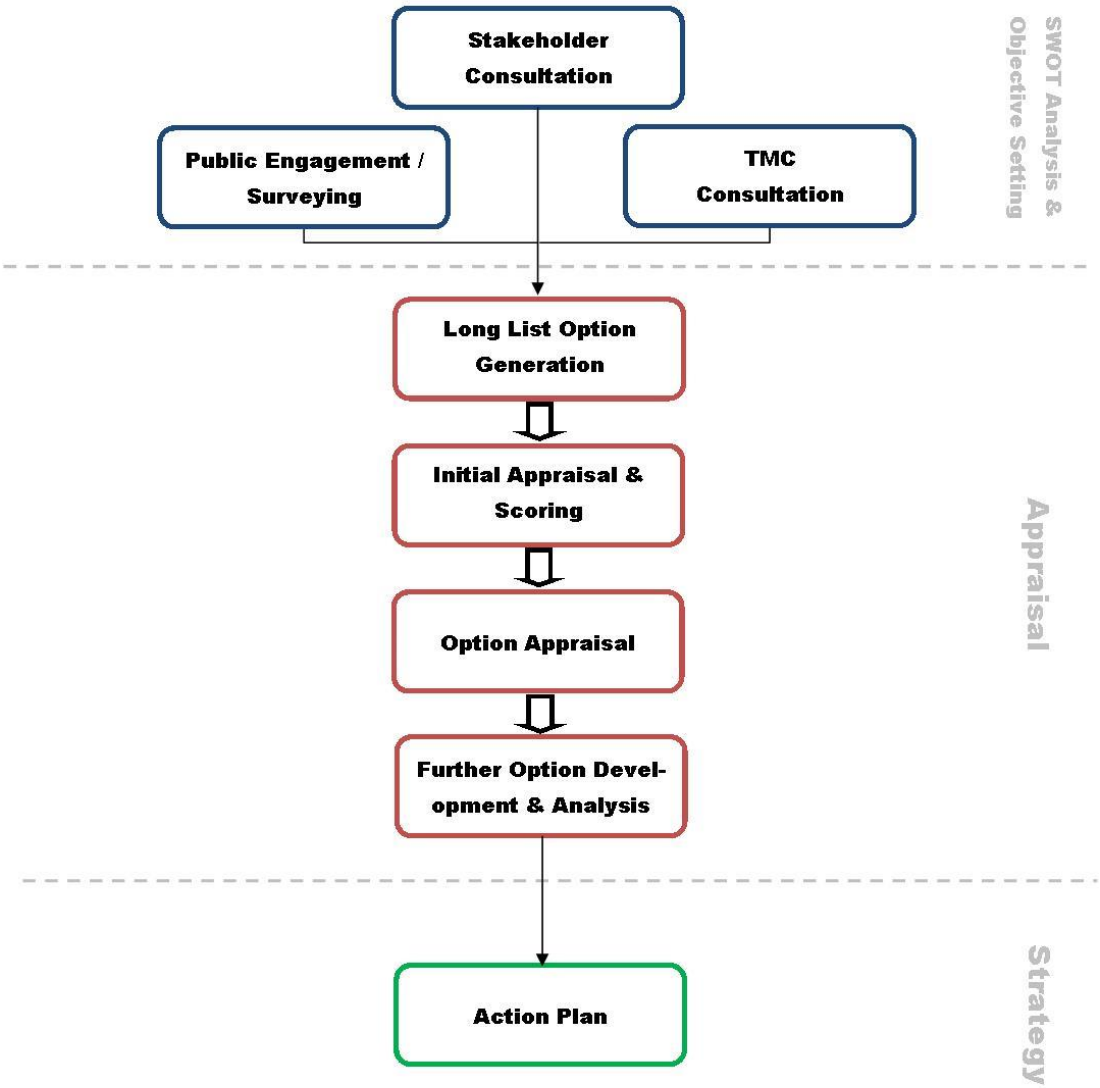

Figure 6.1 - Option Development Pathway

6.2 Initial Option Generation

An initial long list of potential schemes was prepared including options that could potentially improve Elgin's transport network in a variety of areas. The options generated were based on the results of data gathering, consultation with stakeholders through workshops, engagement with the public through a travel survey and face to face interactions, and in depth workshops undertaken with officers from TMC.

To support this process, TMC commissioned the aforementioned Elgin Transport Survey. This survey was not only designed to gather data on how, when and why people travel but also sought to uncover the public perception of the main transport issues in Elgin. The survey prompted over 800 responses and so provides a highly valuable data source on understanding the public's perception of transport in Elgin and their suggestions on where, and how, they would like to see improvements made. The most common themes centred around improvements to junctions (typically by providing signalisation), additional routes crossing the rail line, improvements to the spread and reliability of public transport services, additional safe crossing opportunities for pedestrians and improved infrastructure accommodating cycle trips.

Additionally, following discussion of SWOTs and feedback on study objectives at workshops, stakeholders recorded views on the operation of the Elgin transport network and suggestions as to where and how improvements should be made. Again the main themes centred on a need to improve rail line crossing provision, improve congested junctions, better link the Elgin path network and provide safe road crossings for pedestrians.

An experienced Jacobs team and key TMC Transportation and Development Plan officers jointly took part in a two day 'options' workshop to discuss, add to and finalise an 'long list' of options for further consideration. On the first day of this workshop, representatives from both organisations split into multiple groups and spent time considering various different option types before feeding back to the wider group on specific findings. Site visits were conducted on the second day, with the team splitting to allow one group to view key parts of the road network and discussing the options proposed to improve these, facilitated by driving to each area in a TMC bus. The other team undertook a review of the network on bike, specifically concentrating on the active travel network and discussing the specific options for improving it.

Following this review a final long list of options was agreed, having made sure that the list included options offering sufficient geographic spread across the Elgin network, and also gave due cognisance and balance to all the main forms of travel; ensuring all the mains forms of travel are accommodated is important to ensure a balanced strategy and is in line with best practice guidance. Consideration of the key movements addressed by each option is important to ensure good geographic coverage but may also assist in apportioning costs of associated infrastructure in future. The five key movements identified were as follows:

- Town Centre (TC)
- Northeast (NE)
- Southeast (SE)
- Southwest (SW)
- Northwest (NW)

Table 6.1 outlines the option long list whilst Figure 6.2 shows the geographical context of options:

Table 6.1 - Options Long List

Option Type	Options	Movement Addressed
New north / south rail crossing	I1A - New north / south rail bridge: Ashgrove / Linkwood Rd to Maisondieu Rd - two way arrangement	TC, SE, SW
	I1B - New north / south rail bridge: Ashgrove / Linkwood Rd to Maisondieu Rd - two way arrangement w' signals	TC, SE, SW
	I1C - New north / south rail bridge: Ashgrove / Linkwood Rd to Maisondieu Rd - one way arrangement w' signalisation of existing north / south junctions on A941 bridge and new junctions	TC, SE, SW
	I1D - New north / south rail bridge: Wards Rd to Edgar Rd - two way	TC, SE, SW
	I1E - New north / south rail bridge: Wards Rd to Edgar Rd - two way w' signals	TC, SE, SW
	I1F - New north / south rail bridge: Wards Rd to Edgar Rd - one way arrangement with signalisation of existing north / south junctions on A941 bridge + new junctions	TC, SE, SW
	I1G - New north / south rail bridge: Edgar Road to Wittet Drive	SE, SW
	I1H - New north / south rail bridge: Edgar Road to Wittet Drive w' signals & Edgar Rd link	SE,SW
Streetscape changes	I2A - Moss Street - convert to one-way (northbound) & widen footways/cycle lanes	TC
	I2B - Moss Street - create shared surface with no general vehicle access but with two way bus access	TC
	I2C - Moss Street - pedestrianise	TC
	I2Ca - Moss Street - pedestrianise including reverse one-way Commerce St	TC
	I2D - Reidhaven St / Culbard St / Batchen St - pedestrianise	TC
	I2E - South Street - pedestrianise between Commerce & Batchen Street	TC
	I2Fa - A96 between Northfield Terrace & Pansport Roundabout - remove barriers to pedestrian movements across A96 (Partial Streetscape Treatment)	TC
	I2Fb - A96 between Northfield Terrace & Pansport Roundabout - remove barriers to pedestrian movements across A96 (Full Streetscape Treatment)	TC
	I2G - A96 one-way loop (clockwise) - Boroughbriggs Road eastbound, A96 westbound	TC, NW
	I2Ga - A96 one-way loop (clockwise) - Trinity Road EB, A96 WB	TC,NW
	I2H - Sandy Rd/Glenmoray Drive - Redesign corridor for all uses: Street Scape	SW
	I2I - Reverse one-way Commerce St - Lossie Wynd restricted access	TC
	I2J - Review measures to reduce vehicle movements around schools	ALL
Junction Improvements	I3A - New Elgin Road - improve performance / replace junctions N/S of railway	TC, SE, SW
	I3B - A96 between Northfield Terrace & North Street - replace existing roundabout junctions with signals - controlled pedestrian provision	TC, NW
	I3C - A96 / Maisondieu Road - improve performance / replace	TC, NE, SE, SW
	I3D - South St / Hay St (Comet Roundabout) - improve operation	TC, SW
	I3E - Sandy Road / Glenmoray Drive - redesign layout to between serve north / south demand	SW
	I3F - Ashgrove Rd/Tyock Industrial Estate / A96 - rationalize priority & roundabout junctions into one junction & improve performance	NE, SE, SW
	I3G - Bilbohall Road / Fleurs Road / Mayne Road / Wards Road rationalization	SW
	I3H - Edgar Road / The Wards - improve operation	NW, SW
	I3I - Wittet Drive / A96: improve operation or investigation junction location	SW
	I3J - Morriston Road / A96: improve operation / redesign layout to accommodate all modes. Consider incorporating access into development to south, providing an entry feature to Elgin	NE, NW, SW
	I3K - Morrison Road/ North St : Signal improvements	NE, NW

Option Type	Options	Movement Addressed
Cycle & Pedestrian facility improvements	I4A - New cycle / pedestrian north / south rail bridge: The Wards shared path to Wards Road / St Catherines Place	TC, SW
	I4B - New cycle / pedestrian north / south rail bridge: Ashgrove Road	TC, SE
	I4C - New cycle / pedestrian north / south rail bridge: Bilbohall Road / Fleurs Road	SW
	I4D - New cycle / pedestrian link between Perimeter Road area to Maisondieu Road	TC, SE
	I4E - Pave and light dismantled railway path to link Elgin South area with Reiket Ln path (to standard of River Lossie Cycle route)	TC, SE
	I4F - Provide cycle lanes alongside Station Road	TC, SE, SW
	I4G - Western Cycle Route - N-S non-segregated link from Wittet Drive/A96	SW
	I4H - Provide cycle lanes alongside Linkwood Road	SE
	I4I - Provide cycle parking in Elgin where cycle paths enter the town	ALL
	I4J - Cycle Link Moycroft Road to Calcots Road - old railway line extension to Lossiemouth	NE, NW
	I4K - Active Travel Route between Pinefield and East End Primary School	TC, SE
	I4L - Active Travel Route between Laichmoray Roundabout and Pansport Bridge, utilising new signal controlled crossing on A96	TC, NE
	I4M - A941/Lesmurdie Road – improvements to pedestrian /cycle provision and crossing	NE, NW
	I4N - A96/South Street (Dr Gray's) – improvements to pedestrian /cycle provision and crossing	TC, NW, SW
	I4O - A96/Wittet Drive/Sheriffmill – improvements to pedestrian /cycle provision and crossing	TC, NE
New Road Links	I5A - Extension of Edgar Road (with segregated active travel paths) to connect with dualled A96 (south option)	SE, SW
Pedestrian Crossing Review	M1A - Edgar Road: Review and redesign / add pedestrian crossing	SW
	M1B - Station Road: Review and redesign pedestrian crossings on Station / Maisondieu Road	TC, SE, SW
	M1C - A96 in Elgin: Review / redesign / add to pedestrian crossings	ALL
	M1D - Thornhill Road: Review / redesign / add to pedestrian crossings	SE
Speed Limit Review	M2A - Town centre: Investigate revising town centre speed limit to 20mph	ALL
	M2B - Congested areas (A941 / A96): Investigate Urban Traffic Control	ALL
Bus Service Review	M3A - Elgin / Moray: Investigate use of technology to manage demand responsive bus service provision	ALL
	M3B - Bus station: redesign / improve operation	TC
	M3C - Main road network town entry points: Investigate sites for P & R provision	NE, NW, SE, SW
	M3D - Main Road entry points into Elgin: investigate sites for park and change with direct access to active travel corridors into town via key destinations.	NE, NW, SE, SW
Travel Planning	M4A - The Moray Council: Undertake robust Travel Plan for The Moray Council	TC
	M4B - Elgin: Expand TMC Travel Plan initiatives to other Elgin businesses	ALL
	M4C - Development: Specify requirement for current best practice Residential Travel Plan for all new development	ALL
	M4D - Schools: Robust Travel Planning for all Elgin schools	ALL
Car Parking Review	M5A - Town Wide investigation of on and off-street car parking provision	ALL
Travel Information	IN1A - Provision of information to support use of all modes of travel	ALL

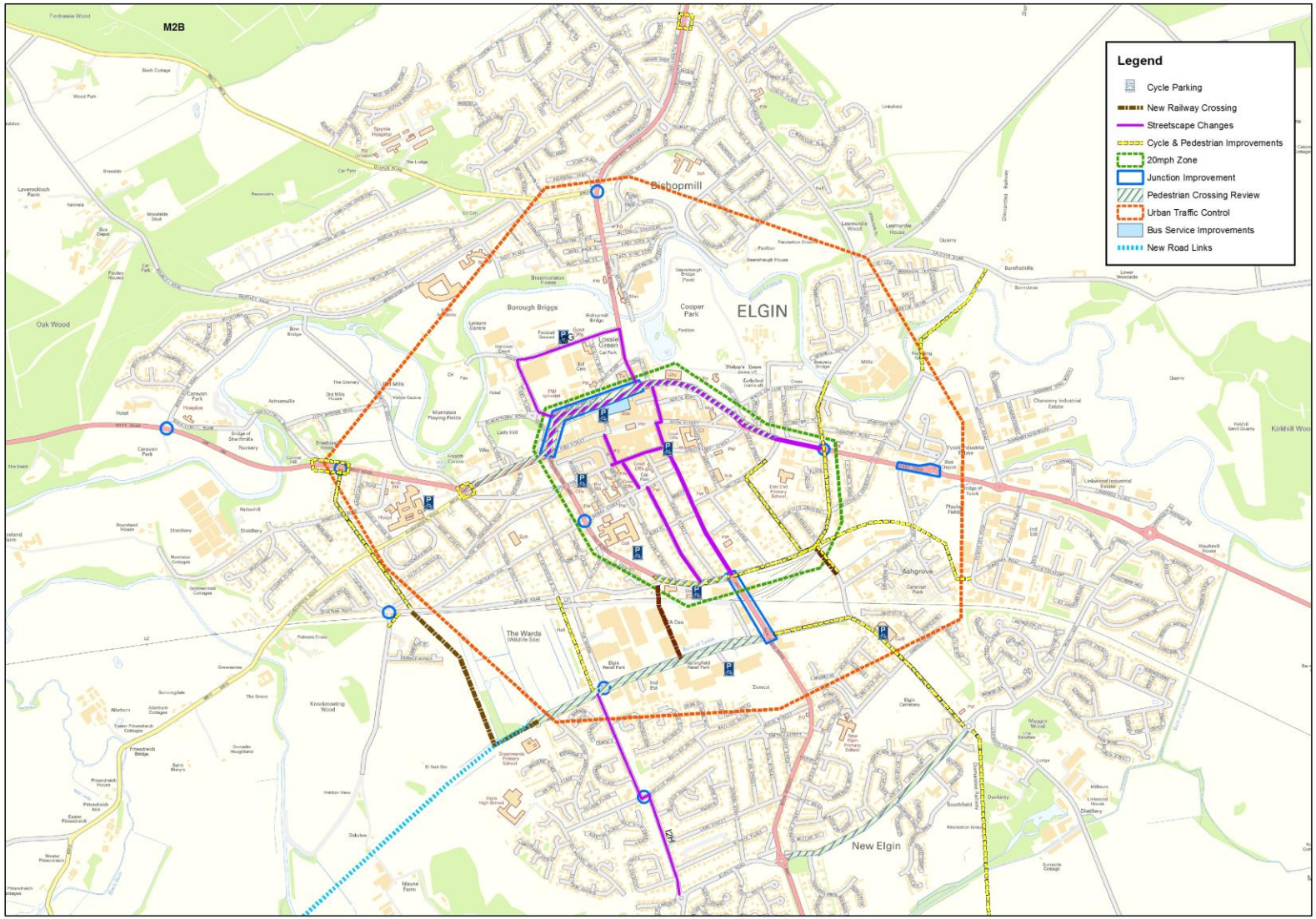

Figure 6.2 - Geographic Location and Context of Options

6.3 Initial Appraisal & Scoring

Following the long list option generation process, an initial appraisal was undertaken of each option. This initial appraisal was undertaken to assessing the success, or otherwise, to which each option addresses each of the study objectives. To record the performance of each option against each objective, a score was given between +3 and -3 dependent on how positively or how negatively that option addresses the objective, as previously touched upon (Table 6.2 outlines this scoring again for clarity). An example of how the methodology works is where an option for pedestrianising a street scores well when considered against objectives based on active travel and appearance / environment, it may correspondingly score relatively poorly against objectives based around relieving congestion over the wider network.

Table 6.2- Option Appraisal Objectives Scoring

Contribution towards Study Objectives	Score Awarded
Major positive	+3
Moderate positive	+2
Minor positive	+1
Neutral	0
Minor negative	-1
Moderate negative	-2
Major negative	-3

Weighting factors were also applied to each objective as an additional layer of assessment intended to ensure the views of key stakeholders were taken full cognisance of. As previously described, these weightings were applied on the basis of the prioritisation of objectives resulting from stakeholder voting. Higher weighting factors were applied to objectives that were considered to be the most important to the strategy, and so an option will score better if it is considered to meet either multiple objectives relatively well or strongly meet one or more objectives that are considered by stakeholders to be of higher importance. For clarity Table 6.3 outlines the weighting factors applied to each objective.

Table 6.3 - Objective Weightings

No.	Objective	Weighting Factor
1	Make it easier for people to get between home, work, social activities and services.	x3
2	Make how long it takes to get around Elgin more predictable and consistent.	x2
3	Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport	x2
4	Make journeys feel and be safer	x2
5	Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars.	x2
6	Enhance Elgin's appearance by sensitively integrating any physical changes.	x1

To ensure robust appraisal, each option was considered carefully by a team of experienced transport professionals before awarding a final score against each objective. In doing so geographic context was considered alongside judgements made as to the likely magnitude of people it would affect / benefit, based on the aforementioned multimodal data review and some initial tests using the Elgin Traffic Model. Additionally, current standards and guidance were considered to provide an initial indication as to how an option might look on the ground, and how this might alter the appearance of Elgin.

Upon awarding a score against each objective, this score was then multiplied by the relevant weighting and a final score for each objective derived and from this a total score against the objectives was calculated. Through consultation with TMC, it was agreed that only options that achieved a final total score of 10 or greater would be considered beneficial enough to proceed to the next stage of appraisal and consideration for the final strategy.

As a result, a total of 7 options were sifted out, with 57 being retained for further appraisal and development. Table 6.4 outlines how each option scored against each objective and the final scores which they were awarded. Options retained have their final score marked in green whilst those sifted out have their final score marked in red.

Table 6.4 – Initial Option Appraisal

Option Type	Option Code	Objective						Overall Score
		1	2	3	4	5	6	
New north / south rail crossing	I1A							8
	I1B							16
	I1C							16
	I1D							8
	I1E							16
	I1F							16
	I1G							5
	I1H							13
Streetscape changes	I2A							18
	I2B							16
	I2C							14
	I2Ca							14
	I2D							14
	I2E							14
	I2Fa							17
	I2Fb							17
	I2G							1
	I2Ga							0
	I2H							7
	I2I							12
	I2J							15
Junction Improvements	I3A							11
	I3B							18
	I3C							11
	I3D							11
	I3E							12
	I3F							11
	I3G							13
	I3H							11
	I3I							13
	I3J							10
	I3K							13
Cycle & Pedestrian	I4A							22
	I4B							22

Option Type	Option Code	Objective						Overall Score
		1	2	3	4	5	6	
facility improvements	I4C							15
	I4D							21
	I4E							23
	I4F							16
	I4G							11
	I4H							16
	I4I							19
	I4J							11
	I4K							21
	I4L							15
	I4M							15
	I4N							20
	I4O							15
New Road Links	I5A							10
Pedestrian Crossing Review	M1A							15
	M1B							17
	M1C							15
	M1D							13
Speed Limit Review	M2A							16
	M2B							13
Bus Service Review	M3A							12
	M3B							13
	M3C							5
	M3D							11
Travel Planning	M4A							19
	M4B							24
	M4C							17
	M4D							19
Car Parking Review	M5A							12
Travel Information	IN1A							24

6.4 Further Option Development & Analysis

Options that were progressed through from the initial appraisal stage were then investigated in more detail and developed to assess how they might be implemented. Any options that were considered to be sub-optimal, for example those where several similar variants of an option exist (e.g. several different road alignments for crossing the rail line) and further investigation identified that one option was better performing than the others, the least well performing were eliminated at an early stage.

For clarity and simplicity, remaining options were then collected together into logical packages and each package appraised against the objectives and also against additional criteria such as deliverability, feasibility and cost. This process is explained in the following sections.

7. Strategy and Action Plan

7.1 Overview

Following the sifting out of options that do not, overall, meet the objectives of the study satisfactorily, retained options were investigated and developed in more detail. Figure 7.1 shows the options that were retained and this section explains the process of option development for each option category type. Full development of the options is outlined in the appropriate appendix.

For simplicity, the categorisation of options previously used for initial appraisal was condensed down from 11 categories to 7 categories for this section. This was done by categorising similar options one single categories rather than several. The previous categorisation of options was as follows:

1. New north / south rail crossing
2. Streetscape changes
3. Junction Improvements
4. Cycle & Pedestrian facility improvements
5. New Road Links
6. Pedestrian Crossing Review
7. Speed Limit Review
8. Bus Service Review
9. Travel Planning
10. Car Parking Review
11. Travel Information

The above categories were then condensed into the following categories and these are described in more detail later in this section:

1. **Active Travel and Streetscape**
   - includes streetscape changes, cycle & pedestrian facility improvements and pedestrian crossing review
2. **Junction Improvements**
3. **New Road Links**
   - includes north / south rail crossing
4. **Parking**
5. **Public Transport**
6. **Traffic Management**
   - includes speed limit review
7. **Travel Information**
   - includes Travel Planning

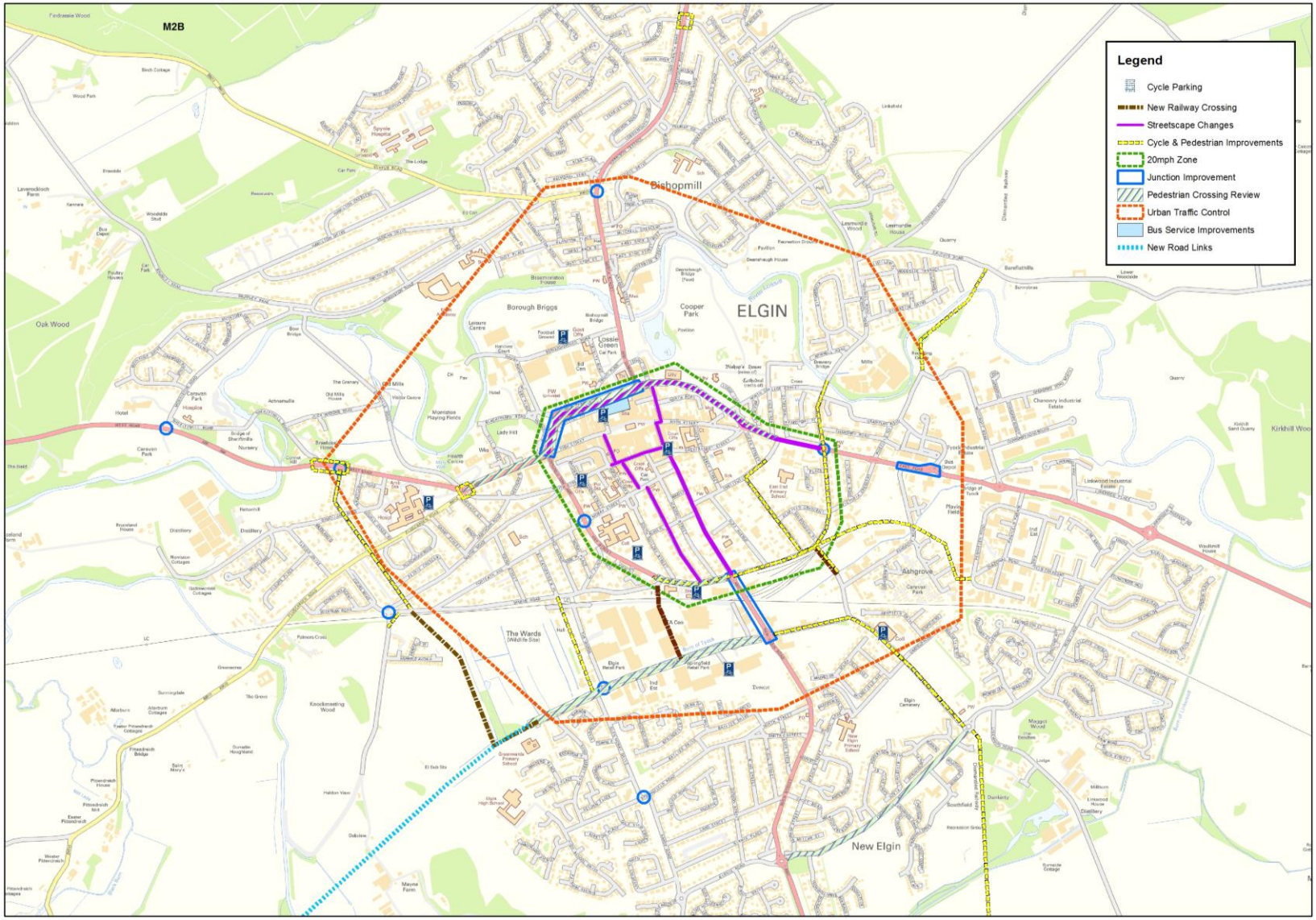

Figure 7.1 - Filtered Options

7.2 Active Travel and Streetscaping

7.2.1 Overview

Active travel options are those options that support travel and transport by non-motorised modes. These include both on-street and off-street interventions that accommodate comfortable, direct and safe travel on foot, cycle, pushchairs and mobility vehicles. Promotion of these modes as a priority is in line with the Scottish Governments transport hierarchy, which considers pedestrians and cyclists above other methods of travel in terms of priority. Elgin, being a compact town with few hills and a relatively well established off-road path network, has the potential to successfully build growth in the use of Active Travel modes through the range of measures developed for this strategy. These focus around the core town centre area and key roads, junctions and off-street links.

Whilst off-street / road infrastructure for non-motorised modes is considered highly beneficial, urban environments don't always provide the opportunity to facilitate wide spread off-street provision. As such, ensuring appropriate street design, that accommodates all users' not just vehicles, is currently high on the Scottish Government's agenda. The publication of Designing Streets[7] in 2010, in conjunction with supplementary advice documents, has provided a wide range of guidance and tools to facilitate good street design, and this approach has been positively adopted by TMC through its own guidance People and Places: An Urban Design Guide for Moray. Designing Streets approaches are also being successfully utilised to create high quality streets and places in other parts of Scotland and this guidance has informed the development of many of the urban context-specific options which have been developed for the Strategy.

Figure 7.2 illustrates the range of Active Travel and Streetscape options which have been developed for this strategy.

7.2.2 Development of Active Travel Options

Active Travel Associated Options*
I4A, I4B, I4C, I4D, I4E, I4F, I4G, I4H, I4I, I4J, I4K, I4L, I4M, I4N, I4O, M1A, M1B, M1C, M1D

**See Section 6 Table 6.1 for details on Options*

Walking

A key priority of the current Scottish Government is to significantly increase the proportion of journeys that are undertaken on foot; not only is walking an emission free mode of travel, it also contributes to a wide range of health and well-being benefits for those who partake. To meet this ambition three aims have been identified; to create a culture of walking, to develop better walking environments throughout Scotland and to ensure easy, convenient independent mobility for all. Trips on foot are considered most appropriate for journey lengths of up to 1600m, or around a 20 minute journey time.

Increasing the number of people walking in Elgin will be directly related to good street design, and this will be explored later in this section, but also new / improved pedestrian and cycle routes and improved road crossing provision.

Improved and increased pedestrian crossing opportunities should be focussed on key routes such as Thornhill Road, Edgar Road, Station Road, Maisondieu Road and the A96. New / improved off-road pedestrian and cycle route should connect with existing routes in a clear and logical fashion, ensuring ease of navigation and a connected network. Figure 7.3 outlines the development in potential routes of combined pedestrian and cycle active travel routes around Maisondieu Road.

[7] www.gov.scot/resource/doc/307126/0096540.pdf

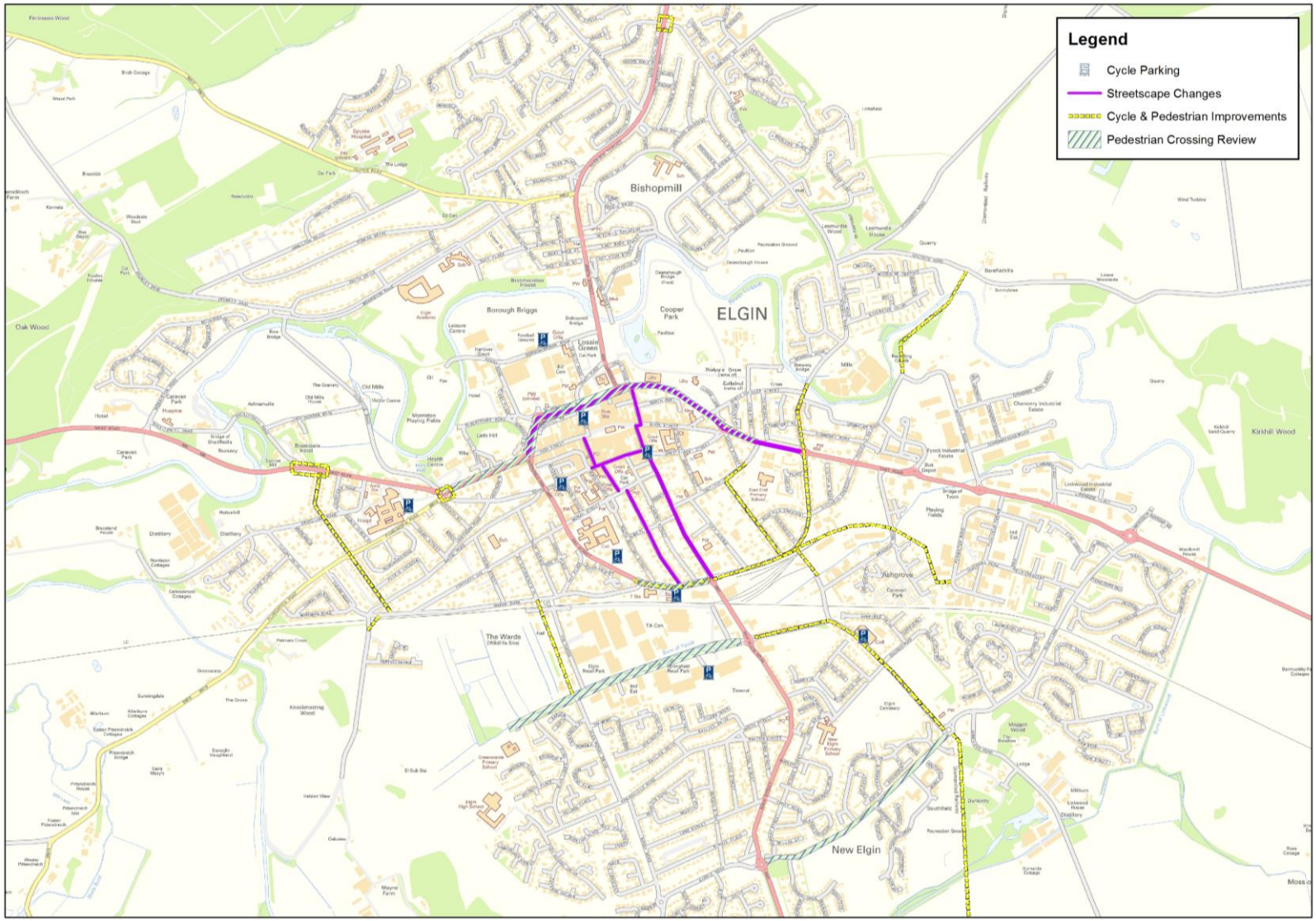

Figure 7.2 - Active Travel & Streetscape Options

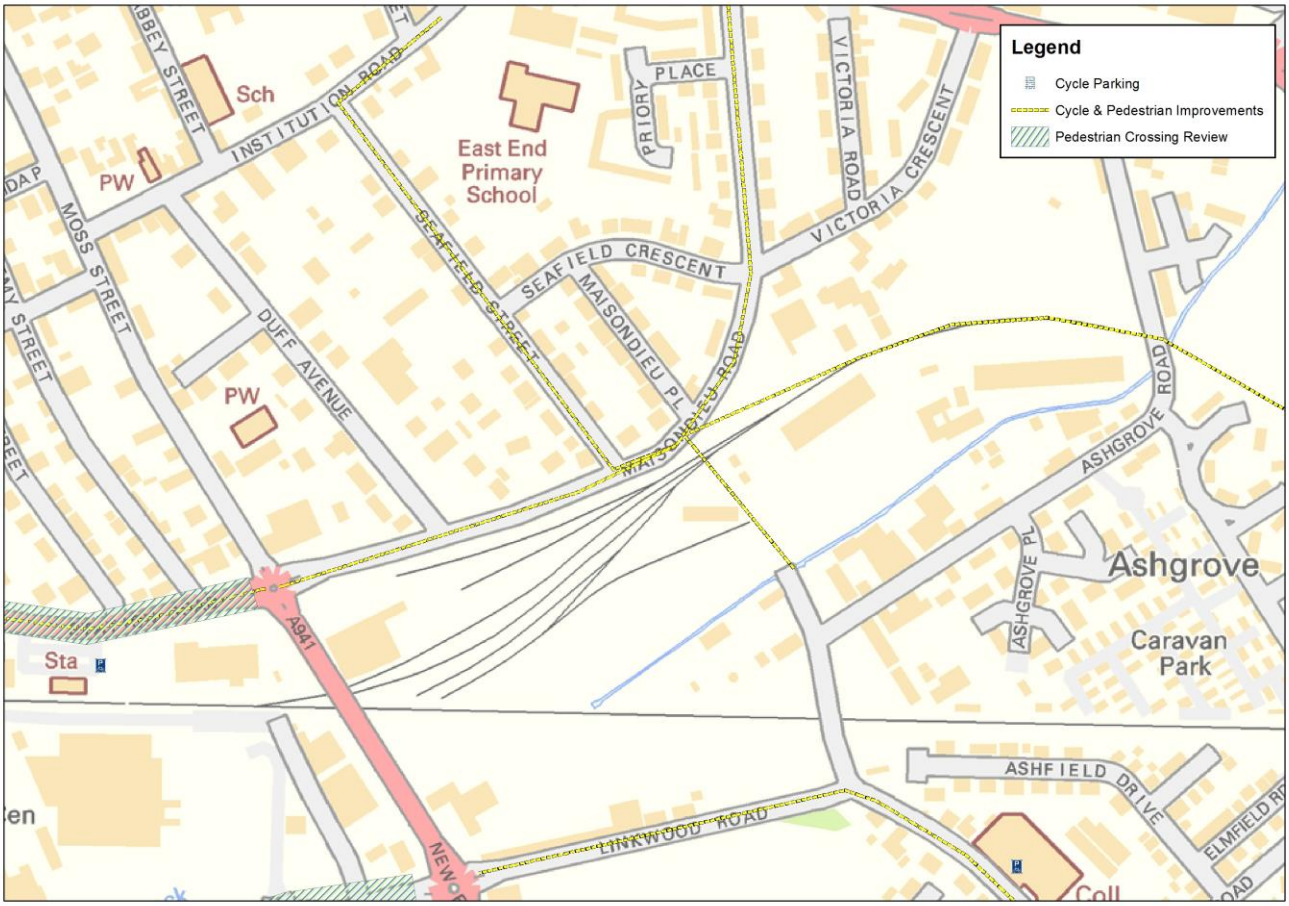

Figure 7.3 - Proposed Active Travel Infrastructure around Maisondieu Rd

Cycling

Elgin also has the potential to significantly increase the number of people cycling, specifically for short to medium length journeys; that is journeys up to a distance of approximately 10km, or around a 40 minute journey time. There are a number of existing good quality local cycle routes in and around Elgin that have been previously developed by TMC and SUSTRANS and options developed as part of this study are designed to complement this existing network.

The creation of a robust, high quality and well linked cycle network will allow bicycle users to efficiently travel in and around all areas of Elgin, in as safe and seamless manner as possible. The SWOT analysis undertaken for this study identified that the North – South cross railway movement is currently not well catered for in terms of active travel crossing provision. The development of options I4A, I4B and I4C address the need for new crossings for active travel users, benefiting both cyclists and pedestrians.

In developing each of these options in particular, consideration was given to standards regarding acceptable gradients to facilitate crossing by all users, and in how to tie any structures into the existing surrounds. This is particularly pertinent when considering option I4A (shown at Figure 7.4) where there are likely to be challenges tying the north side of the bridge into the network around Wards Road due to restrictions on available space. The development of this option also allowed for an element of futureproofing with regards to any potential future electrification of the Aberdeen – Inverness railway line.

Figure 7.4 - Visualisation of I4A Crossing

Additional options, including I4K, I4J and I4O, propose a range of on and off-carriageway cycle infrastructure developed on, alongside and off existing roads, supporting any new crossings and fully integrating them into the network.

Active travel interventions should all be tailored to the specific area they are to be implemented, taking account of a variety of factors including feasibility, cost and impact. On-street cycle lanes should generally include advanced stop lines at signalised junctions, in order to compliment high quality on-street active travel routes. Moreover, toucan crossings should be installed at signalised junctions or crossing points where appropriate in order to preserve the integrity of the cycle network.

Existing off-street pathways which are not currently paved should be considered, where appropriate, for upgrading to a mixed-use shared paved path and this will be investigated in an Active Travel Strategy for Moray.

7.2.3 Streetscape

Streetscape Associated Options*
I2A, I2B, I2C, I2Ca, I2D, I2E, I2Fa, I2Fb I2I, I2J

**Note options I2G, I2Ga & I2H were previously sifted out at initial appraisal as they scored less than 10.*

In line with guidance, this Strategy recognises the important role that well designed streets play in not only distributing traffic but also in creating successful places and communities to visit, spend time and travel around. Elgin currently has some very positive examples of alternative approaches to street design, such as the pedestrianisation and restricted access on and around the High Street. A number of other options have been developed for this strategy to compliment this that, identifying other potential streets that could be successfully streetscaped to improve their functions and to better accommodate all modes of travel around the town centre.

South Street, for example, is in a prime position to adopt an alternative street design. Currently this busy one-way street caters heavily for motorised vehicles, while in effect potentially relegating cyclists and pedestrians to a perception of being secondary users. Option I2E was developed to investigate differing treatments to improve pedestrian provision on this street, promoting this retail based area more as a pedestrian space that could reinvigorate the area, in a similar way that the pedestrianised area does for the High Street. Furthermore

continual active frontage along South Street, coupled with a widened pavement space, could allow for opportunities to create outdoor café/dining experiences. Figure 7.5 outlines how this street might look with various streetscaping treatments applied and with other options including pedestrianisation adopted. This includes I2C, I2D, I2I and I2F.

Figure 7.5 - 3 levels of Streetscaping on South St; Do nothing, Partial Pedestrianisation and Full Pedestrianisation

In ensuring good streetscaping treatment, altering the surface material and adding street furniture are amongst the key considerations when constructing an alternative space. Other considerations will include adequate drainage systems, utilities access and contextually sensitive material usage. High quality lighting is also required to ensure that pedestrians utilising the space feel that they are in a safe and comfortable environment at all times of the day and night.

Additionally, when re-appropriating space on streets various considerations must be taken into account. If partial pedestrianisation is to be implemented then the layout must be contextually specific to the area in question. Factors can include, effect on the wider road network, adherence to minimum standard lane widths and streamlined surface materials in conjunction with the surrounding area. If a full shared surface is to be implemented, this would need the appropriate signage to direct users how to utilise the area correctly. Figure 7.6 shows the various layouts a street such as Moss Street might adopt (option I2A/B).

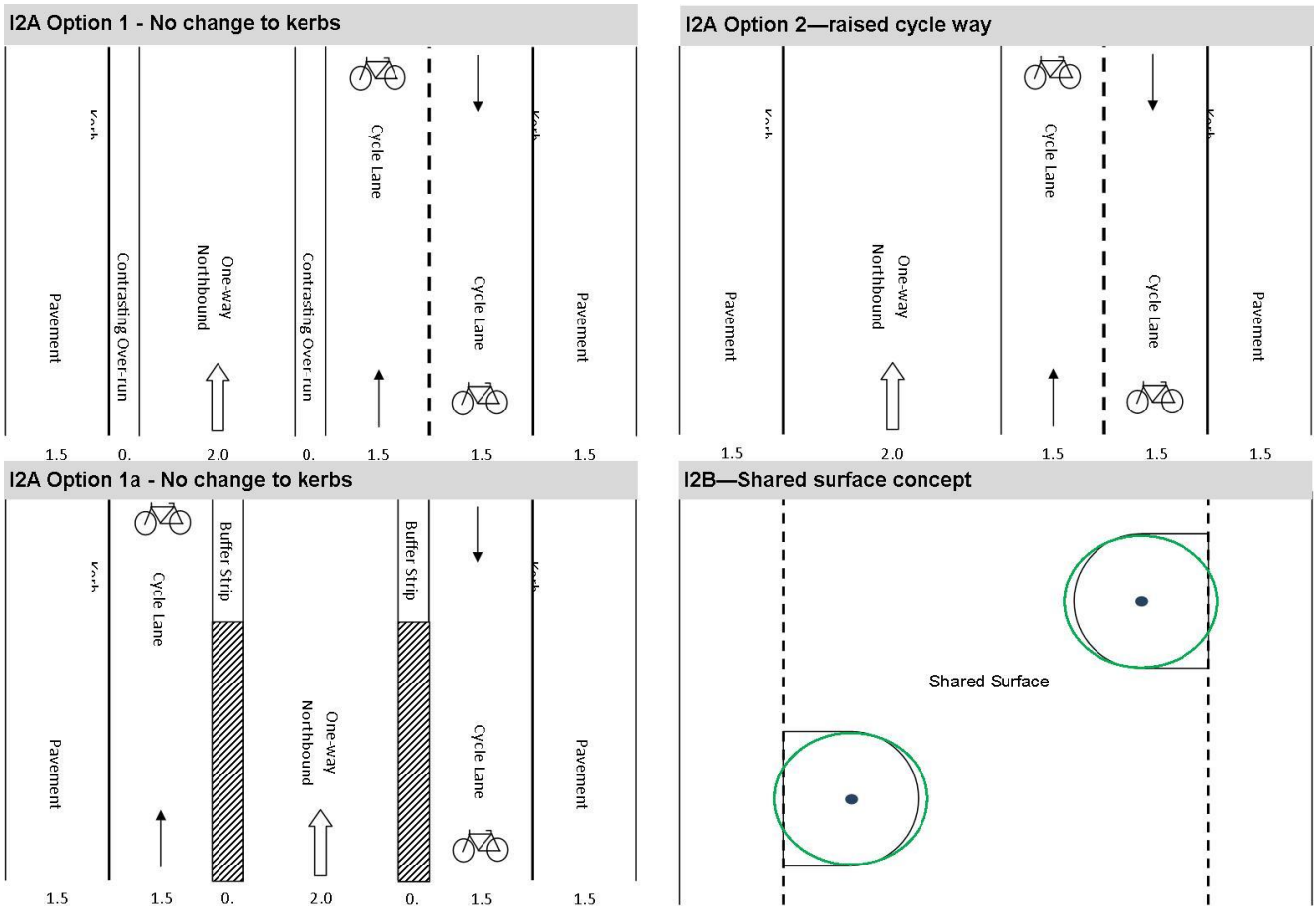

Figure 7.6 - Variety of lane allocation on partial and fully pedestrianised streets

7.3 Junction Improvements

Associated Options
I3A, I3B, I3C, I3D, I3E, I3F, I3G, I3H, I3I, I3J, I3K

While there is clear desire expressed by the public and key stakeholders to ensure that Elgin becomes less car dominated in a number of key areas where pedestrian, cycle and public transport trips are to be promoted, the requirement to optimise the road network was also expressed as a high priority. Options have therefore been developed to ensure it operates in the most efficient and least constrained way possible, whilst also considering existing and future constraints in addition to the needs of other modes, for example where pedestrians and cyclists cross roads.

Evidence and analysis suggests that Elgin currently has a number of ‘pinch points’, mainly located on the approaches to key junctions where delay and queuing is observed, particularly at peak times. Queuing can significantly impact upon journey time consistency, previously identified as a major issue and thus used as a key objective of this study. A number of options have therefore been developed in an attempt to address this and Figure 7.7 shows the location of junction improvement specific options which have been developed to offer possible improvement and optimisation; new road link options are outlined at section 7.4.

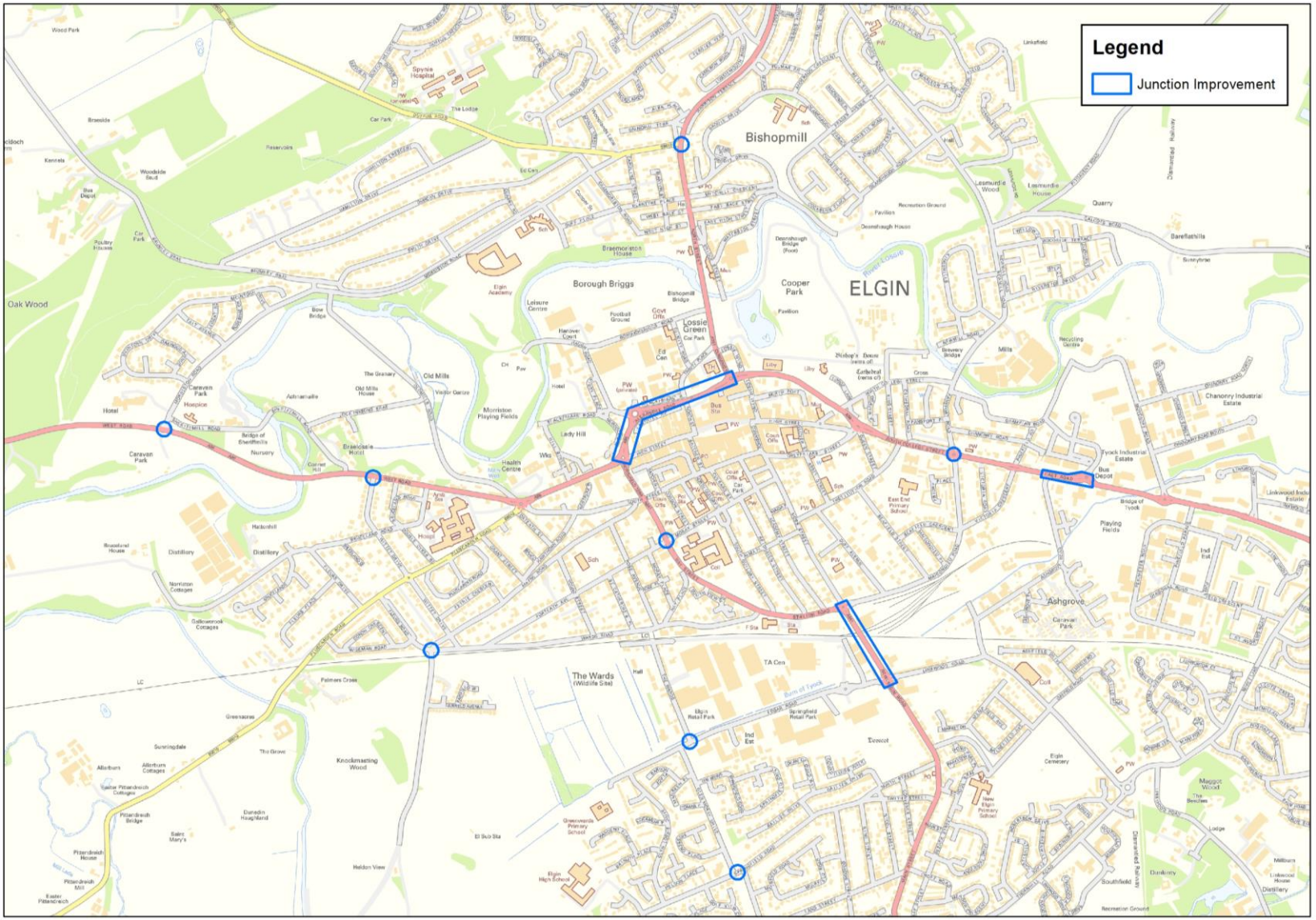

Figure 7.7 - Junction Options

For each junction location identified at Figure 7.7, likely future performance was assessed and the results used to assist in the development of a range of alternative arrangements that may address existing, and future perceived issues. Traffic modelling tools such as LINSIG played a key part in this process, providing an indication of performance and a means by select the most appropriate solutions at each location. Additionally, as the Elgin Traffic Network VISUM model covers the whole extents of the Elgin road network and therefore allows for testing of the network as a whole, this tool was also used as a means of estimating the impact of individual options as a collective package across the network.

As part of the development of junction improvement options, it was also vital to consider how any design changes might affect other modes of travel that may use the junctions (Figure 7.8); not only should junction improvements better accommodate crossing movements of vehicles than they do at present but, where possible, also better accommodate crossing movements of pedestrians and cyclists. For this reason the majority of junction improvement options were developed to include signal control because this can not only be used to allocate sufficient 'green time' to traffic movements in relation to the demand of each movement, but can also be used to allocate sufficient controlled crossing time to facilitate safe crossing of pedestrians and cyclists, where appropriate. An analysis of where existing, and future planned, active travel routes cross junctions was therefore undertaken to support this option development.

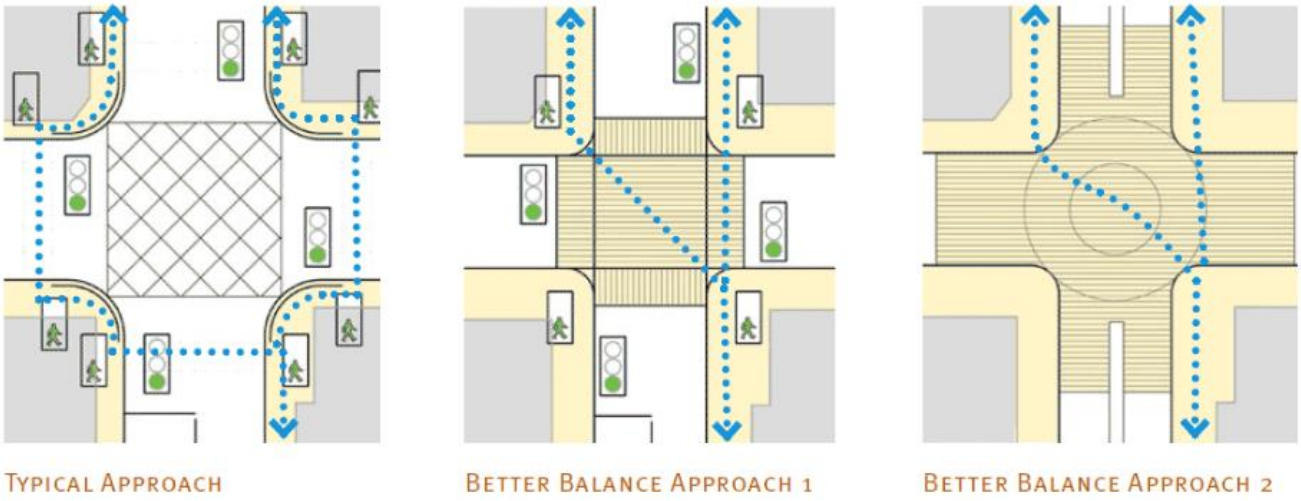

Figure 7.8 - Alternative Approaches to Signalised Junctions (taken from Scottish Government Town Centre Toolkit)

Where possible technical design work, previously undertaken by TMC to design junction improvements at key locations, was utilised in the development of options for this study and subsequently checked for suitable provision for active modes. As an example, design proposals to signalise an existing stagger priority junction between Sandy Road / Springfield Road and Glen Moray Drive, as shown at Figure 7.10 were investigated. As shown, this previous design incorporated on-road cycle lanes, with advance cycle stoplines, in line with standard good practice (Figure 7.9). However further investigation for this study highlighted the presence of existing high quality, segregated, routes alongside both Sandy Road and Glen Moray Drive negating the need for on road provision for cyclists. Option I3E was therefore developed to include toucan controlled crossing provision to link these existing paths. Visualisation techniques have been used to show the principals of technical design in a more easily understandable form.

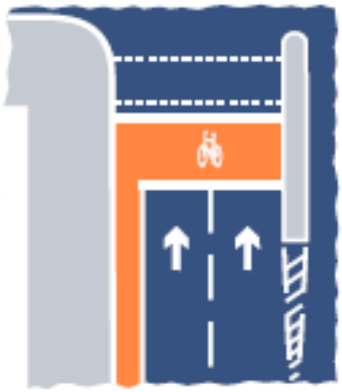

Figure 7.9 - Stoplines at a Signalised Junction

Figure 7.10 - Visualisation and Technical Drawing of Revised Junction

7.4 New Road Links

Associated Options
I1B, I1C, I1E, I1F, I1H, I5A

The aforementioned SWOT analysis demonstrated that one of the main constraints on the traffic network is the lack of bridge options across the rail line, linking north and south areas of the town. The main crossing, the A941 New Elgin Road rail bridge, is often congested during peak times and alternative crossings do not provide as convenient access to the areas which many motorists wish to get to, and so are not as well utilised. Therefore a new crossing that better serves demand and which would operate in conjunction with the existing crossings was deemed an essential aspect of the strategy. The map overleaf (Figure 7.11) illustrates the options which were developed to support the development of a new crossing as well as a potential development land access road link to the west of Edgar Road.

Three main locations were considered for this new rail crossing; Ashgrove Road to Maisondieu Road (option I1B/C), Wards Road to Edgar Road (I1E/F) and Edgar Road to Wittet Drive (I1H). Initial modelling results showed similar network operation benefits to all alignments, therefore identifying each as viable, however further investigation of the likely infrastructure requirements for each found that option I1E/F, without demolishing several operational buildings, would need to cross close in to Elgin Rail Station, resulting in a requirement to cross two sections of rail line, as opposed to I1B/C and I1H's one section of mainline. Notwithstanding the additional costs this would entail over the other options, there may be additional issues crossing so close to an operational rail station and so the deliverability and feasibility issues with option I1E/F meant it was therefore discounted from the strategy.

Only options I1B/C and I1H were therefore considered further. Both options require the crossing of one section of rail line each, however option I1H formed a component of the Western Link Road scheme previously promoted by The Moray Council which was recently the subject of a decision not to proceed with this scheme. On the basis of this decision option I1H was therefore not considered viable for further consideration within the current strategy proposals, leaving option I1B/C as the appropriate new rail crossing option for promotion at this stage.

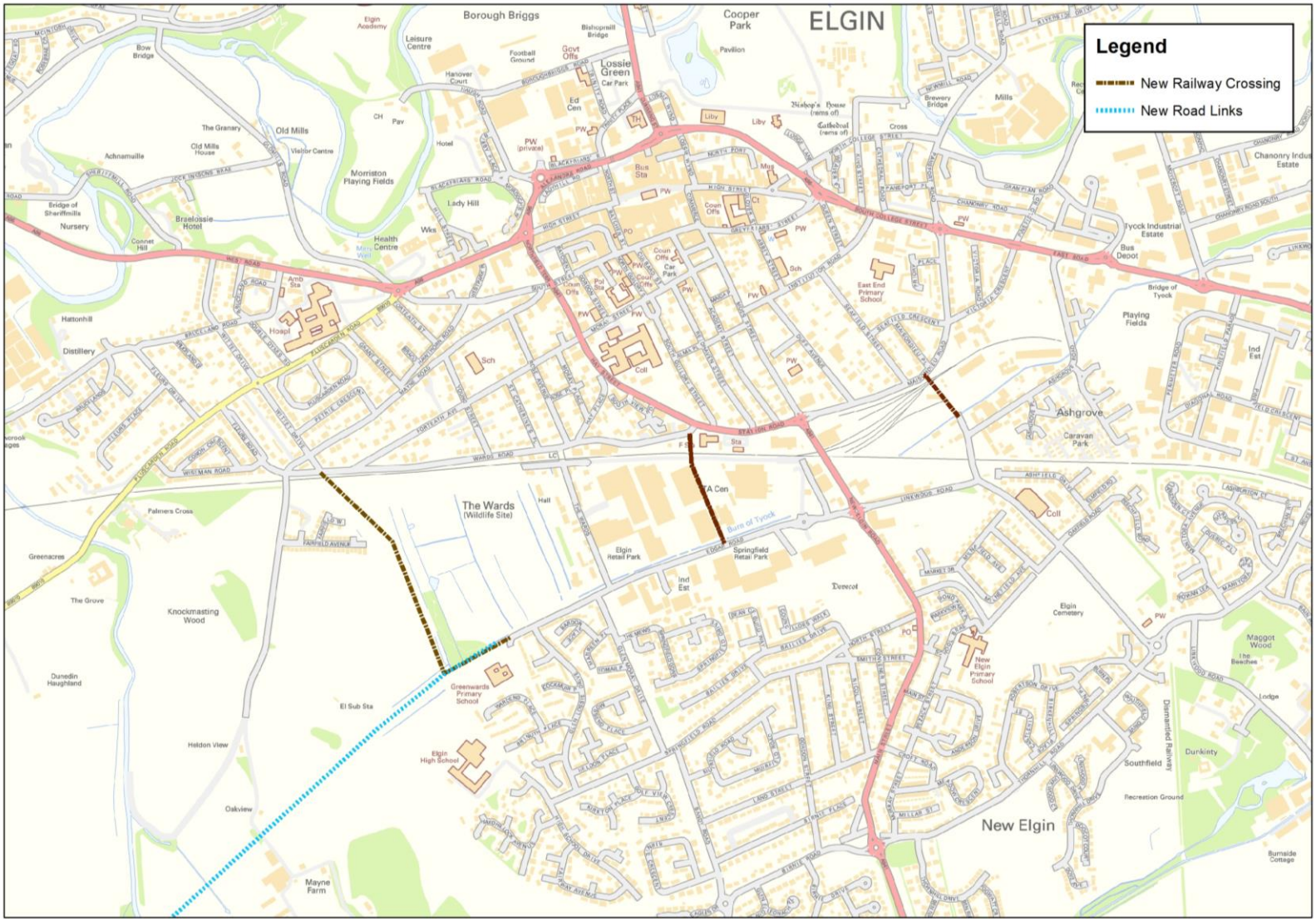

Figure 7.11 - New Road Links

As there is already an existing Rail Bridge crossing at Ashgrove Road, albeit relatively narrow, infrastructure already exists at this location that may be taken advantage of. To connect this with Maisondieu Road, however there is an additional rail line to cross, although investigation has shown this to be a seldom used section of freight storage line. This line could be crossed either via a new bridge or by severing this section of rail line and crossing it at grade. There may be potential to open up discussions with Network Rail regarding the possibility of severing and closing this apparently little used section of line and, should the function of this section of the line require to be retained, there may be the potential to relocate its function and the rail freight yard to another location outside Elgin town centre. This may allow rail / road freight interchange to be undertaken more effectively out with the constraints of a built up environment, and additionally could potentially open up this town centre area, currently given over to the rail freight yard, for development.

Various different alignments for option 1B/C were investigated to check how best it could tie into the existing road network north and south of the rail line and whether a one or a two way traffic system could be implemented; some of this option development is shown at Figure 7.12. The tying into the road network north and south of the rail line will be the subject of a detailed design exercise; however strategic modelling results indicate that a one-way traffic arrangement (I1F) is likely to offer marginally better performance in terms of traffic operation, although there may be issues with deliverability of this type of system. Both options were retained for further investigation following adoption of the strategy and the identification of appropriate funding to implement either option.

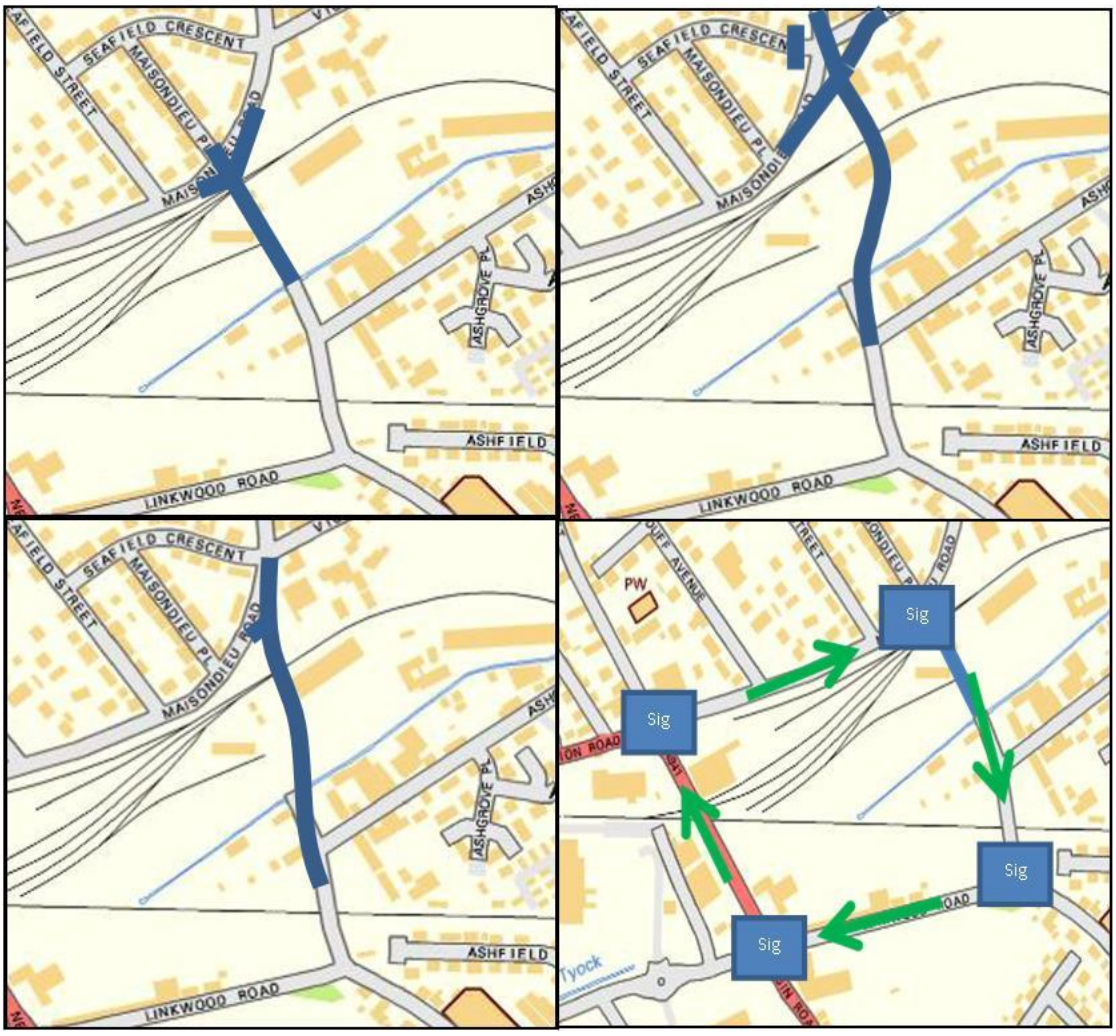

Figure 7.12 - Alternative Traffic Systems Investigated for I1B/I1C

7.5 Parking

Associated Options
M5A

Stakeholder and public engagement identified concern amongst many respondents that Elgin has a number of parking constraints. These are likely to be contributed to significantly by high levels of car ownership / usage levels and particularly the fact that many people that access Elgin do so from relatively rural environments around it, increasing the requirement to get into Elgin by car and then parking their car to undertake the remainder of their journey on foot. This can result not only in a strain on the road network but also parking issues that can result in barriers to active travel and to efficient traffic operation.

Inappropriate parking, which consultation suggested is irregularly enforced, is evident on many of the residential streets around the town centre, specifically on the area around Main Street, Moss Street and Academy Street. Instances of large vehicles parked on paths to avoid blocking the road is commonplace and this often prevents pedestrians from being able to use footway provision fully, forcing potentially unsafe use of the road as an alternative, as demonstrated by Figure 7.13.

Figure 7.13 - Pavement Parking in Elgin

Conversely there is evidence that use of off-street car parks is relatively sporadic, potentially due to the fact that these are charged and enforced, whilst on street parking is currently free across Elgin. An overview of off-street parking provision is shown at Figure 7.14 whilst on-street parking is available throughout most areas of Elgin.

Options for improving parking in Elgin have not been developed for this study as an in-depth Parking Strategy is being separately undertaken by TMC to investigate the main parking issues in Elgin and will separately seek to develop solutions to address these.

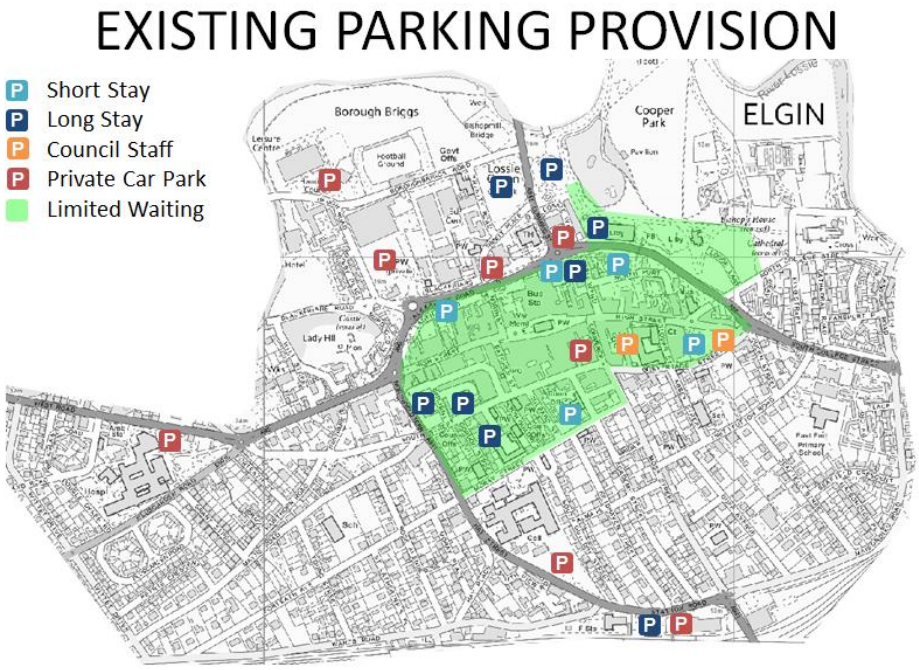

Figure 7.14 - Existing Parking Provision in Elgin

7.6 Public Transport

Associated Options
M3A, M3B, M3D

Elgin currently benefits from provision of both a bus and a railway station, both providing access and vital links to surrounding towns and cities. These stations sit approximately 1km apart, separated by several trafficked routes. As previously identified, a variety of the active travel options have been developed to improve the experience of pedestrians and cyclists when interchanging between these stations but improvements to the layout and appearance of Elgin Bus Station are also proposed (M3B).

Additional improvements are also proposed in the form of improved bus service provision (IM3A). This option to improve Demand Responsive public

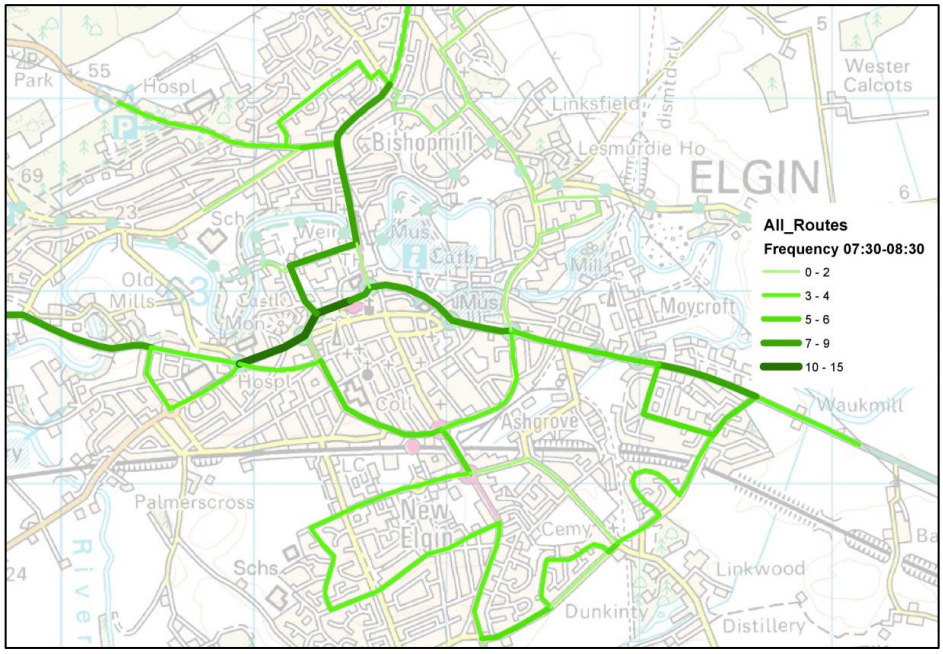

Figure 7.15 - Bus Frequency in Elgin

transport provision was identified because the SWOT analysis identified that existing services do not provide adequate coverage and, given the low population density of most of Moray outside Elgin, operators are unlikely to be able to improve commercial bus service coverage without significant additional funding.

There is a desire to see cheaper, more consistent and more reliable bus services provided in order to make public transport a more viable alternative to car when travelling in and around the Elgin area. Option M3A aims to address this issue by initially investigating use of technology to improve responsive bus service provision. TMC already operates a Demand Responsive service, which has recently been expanded, however it is considered that use of technology could assist in providing better coverage of good value, demand responsive bus services where required. The technology for this could be similar to that currently used by some taxi operators, with taxis being ordered tracked and managed through mobile phone applications and a centralised computer system.

Uber launches feature which is basically a very small bus

If you want to get a ride from one pre-arranged location along a fixed route to another pre-arranged location, but don't want to get a bus, UberHop is for you

The taxi service has launched a car-sharing service in Seattle which it claims will help cut congestion. Photograph: Andrew Matthews/PA

Minicab company Uber has launched a new service in Seattle which allows riders to save money and time by waiting for their cab in a pre-arranged location, sharing it with strangers, and being dropped off at any point along a predetermined route.

It's a bus. Uber has launched a bus. Albeit a car-sized bus.

The service, called UberHop, is the second ridesharing feature from the taxi firm. The first, UberPool, launched in London last week, and is a more traditional spin on sharing a taxi: the app automatically pairs riders with someone going in a similar direction, and lets them save money on the overall bill.

But UberPool can also make rides longer, given the car has to go out of its way to pick up and drop off the second passenger. And, Uber noticed, a lot of riders end up travelling along much the same routes. So UberHop was born, allowing riders to congregate at a pre-arranged pick up location (similar to a bus stop) on one of three routes (similar to bus routes) and then be dropped off elsewhere on those routes (similar to a bus).

The company also says in a blogpost that it hopes UberHop will help reduce congestion, like a bus does, by making it easy and affordable for people to share

Figure 7.16 - Technology for Demand Responsive Buses[8]

Development of this option can only be limited at this stage as this area of managing bus provision is currently in the early stages of development, although it is progressing as a rapid pace and so TMC should keep abreast of developments and consider how this could either be utilised to expand its 'Dial M for Moray' services, or indeed attract private operators to begin / improve operations serving Elgin.

The development of *park and change* sites will also be taken forward by option M3D and potentially demand responsive bus services could assist with the successful implementation of these sites where demand may be too low to justify dedicated services.

Finally, a key component for delivering a successful and well utilised bus service network will also be the re-design of the A96 corridor and particularly the bus station layout and its links with the A96. At present eastbound buses turn into the bus station via a turning manoeuvre at the A96 / North Street Roundabout and return to their route via another turning manoeuvre at the A96 / Alexandra Road Roundabout. With signalisation of these junctions proposed (option I3B), this manoeuvre will no longer be possible and so option M3B would provide this redesign of the existing bus station layout or other variants to allow it to function optimally with any future A96 infrastructure.

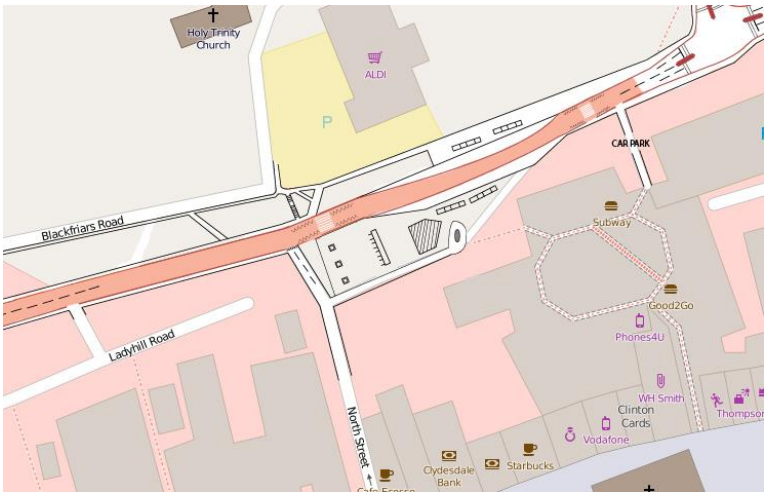

Figure 7.17 - Elgin Bus Station Redesign

As option I2Fa/b is likely to require to be phased over time, M3B will need to develop in close conjunction with this phasing and in consultation with

[8] Article from The Guardian article 09/12/15 https://www.theguardian.com/technology/2015/dec/09/uber-uberhop-bus

Transport Scotland with regards dualling of the A96 and any bypass of Elgin. Initially its evolution may involve revisions to the existing bus manoeuvring areas only but as the function of the A96 changes over time, the layout will need to evolve to also ensure it also removes existing barriers to pedestrian movement and operates effectively with A96 streetscaping.

7.7 Traffic Management

Associated Options
M2A, M2B

Option M2A will introduce a town centre speed limit of 20mph. The development of this option concluded that the most appropriate area to introduce this limit would be from the north side of the A941 rail bridge, including all routes within Station / Hay Road and Maisondieu Road, extending up to the A96. Given the A96's current status as a trunk road through Elgin, it is considered unlikely that reducing the speed limit on the A96 from 30mph to 20mph would be acceptable in the short term. However, should the A96 be de-trunked through Elgin, it is considered prudent that the 20mph area be extended to the A96, at least between the junctions with Northfield Terrace and Maisondieu Road.

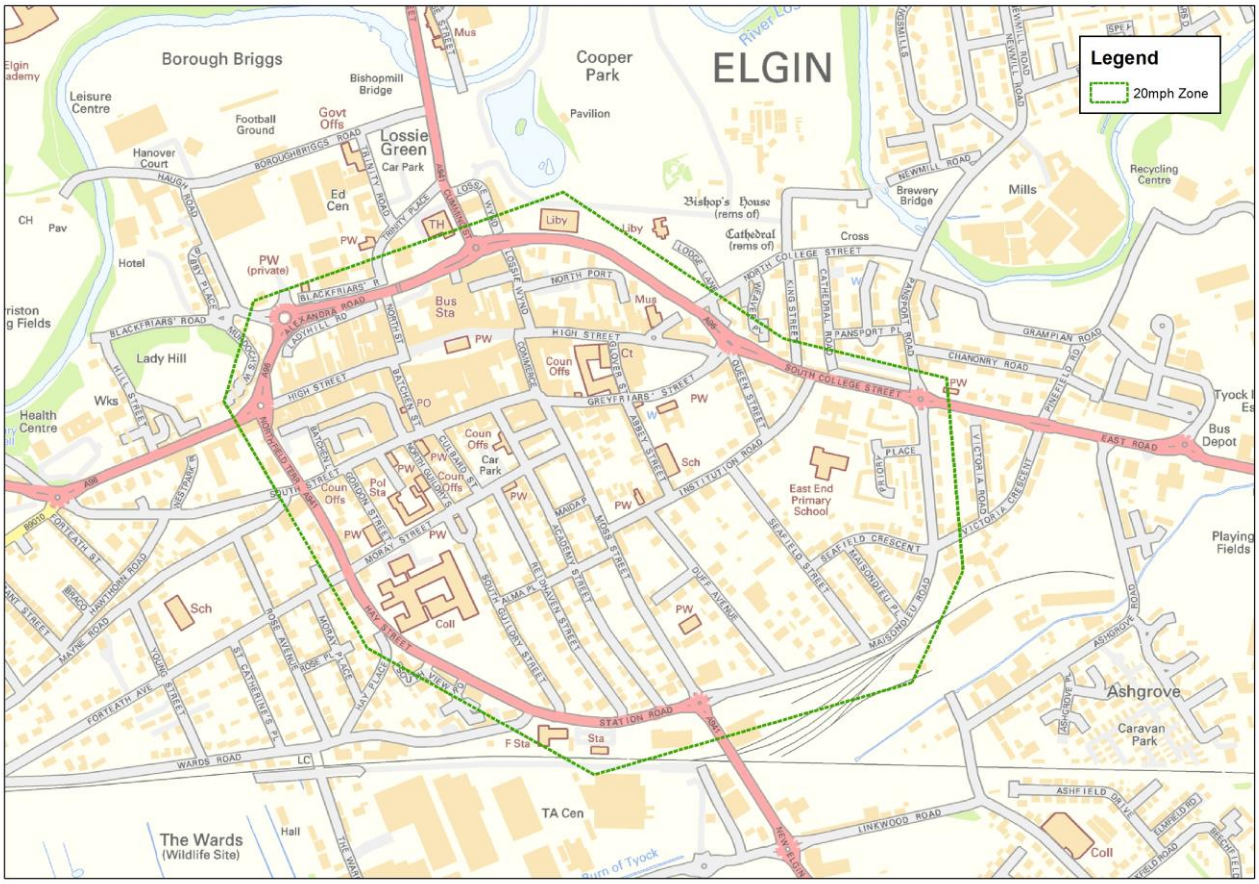

Figure 7.18 - 20mph Cordon around Elgin Town Centre

Reducing the town centre speed limit within Elgin is a key action towards reducing congestion, making travel times more consistent and improving road safety. It will complement the range of active travel measures, such

as on-street cycle lanes and semi-pedestrianised streets. This option should be implemented including appropriate speed reducing features such as road signage and lineage as key entry points, in line with Transport Scotland's 'Good Practice Guide on 20mph Speed Restrictions'.

The introduction of Urban Traffic Control (Option M2B) will complement the speed limit review alongside the introduction of signal control at key junctions through several options, both providing the overall means to effectively control the Elgin traffic network in as efficient way as possible taking cognisance of varying demands across the day.

7.8 Travel Information

Associated Options
M4A, M4B, M4C, M4D, IN1A

The effective distribution of transport and travel information is considered to be a key component of the strategy and option IN1A will play a vital role in supporting the implementation of any new and existing infrastructure and initiatives. Further to this, travel planning and the dissemination of information is important with regards to whether, why, when and how people travel and this applies to Elgin in much the same way as other towns and cities across the world, particularly in attempting to reduce the influence of the morning and evening peaks on the traffic network.

Travel Plans, as to be provided through options M4A to M4D, are a highly effective means of communicating specific travel information to a targeted audience. A Travel Plan is a tool designed to encourage people to consider their travel choices in an attempt to minimise the adverse impacts of a development on the environment. This is achieved by setting out a strategy for eliminating barriers preventing users of the site from using sustainable travel modes, improving travel choices and managing single occupancy car use. A Travel Plan is an active, dynamic document that requires to be updated on a regular basis.

All Elgin travel plan options will need to be developed further through significant engagement with the various organisations targeted. This development will need to be thorough and informed by current best practice as, if designed well, the implementation of a Travel Plan can lead to economic, environmental, social and health benefits as well as significant benefits in terms of reducing congestion and increasing safety. This is because it can lead to a decrease in the proportion of users reaching sites by private car and an increase in the proportion reaching sites by sustainable modes, including walking, cycling and public transport.

A targeted campaign to engage with the main employers and business in the town centre is essential, with the aim of promoting the benefits of active / sustainable travel and smarter working initiatives. In conjunction with the infrastructure aspects of this strategy it will be able to facilitate real change. Development of option M4C identified it as critical that residential developers, in particular as generators of a large proportion of their trips during the peak hours, design and produce a travel options leaflets / packs and associated travel planning measures for all new residential developments, with the aim of instilling positive travel behaviours from first occupation of the development. This leaflet, or pack, will need to include incentives such as sustainable travel vouchers to allow new owners to try and test a sustainable form of travel initially at little or no cost.

7.9 Strategy Action Plan

Following the development of options it was noted that, whilst several were discounted from the assessment due to other similar options proving more valuable to the strategy, in excess of 50 options still remain. Given this high number of options it was considered prudent to collect these into various packages rather than undertake further appraisal on each option in isolation. Not only does this packaging assist in the undertaking of a more straightforward appraisal, it allows for the formation of an strategy 'Action Plan', with various packages being assigned to time periods over which they should be implemented. This will assist TMC with seeking funding mechanisms for each package and an appropriate amount of time to overcome any deliverability and feasibility issues.

The Action Plan therefore prioritises the option packages into a number of categories, with a timeframe for implementation for each, subject to funding and deliverability. The options contained within each package can generally be described as follows:

- **Short Term Packages** (by 2018) - considered more 'quick wins' interventions, i.e. those options that are not particularly complicated, time consuming or costly to implement but that will form a sound base upon which to build the remainder of the strategy.
- **Medium Term Packages** (by 2022) - contain options that are more difficult and costly to implement, but which will likely contribute significantly to maintaining operation of an efficient transport network.
- **Long Term Packages** (by 2030) – contain options that take full advantage of the efficient transport network created by the short and medium term packages to ensure all users are equally catered for. The Long Term Packages include packages with and without an A96 Elgin Bypass constructed.
- **Development Specific Package** – contains options not considered required by the strategy as they essentially facilitate access to development land. They are therefore not for the Strategy to deliver but are outlined to ensure they are delivered should the land they serve be developed.

The final stage of this process was to separate the options into one of two variants; Core or Aspirational packages. The Core packages comprise options that are considered fundamental to the success of the strategy while the Aspirational packages include options that are assessed as highly effective in meeting the objectives of this study but that are not considered fundamental to the success of the strategy. Agreement was reached with TMC that options should be packaged as outlined in Table 7.1:

Table 7.1 - Option Package Assignments

Options	Short Term		Medium Term		Long Term (no BP)		Long Term (with BP)		Development Specific
	Core	Aspirational	Core	Aspirational	Core	Aspirational	Core	Aspirational	
New north / south road rail line crossing			I1B	I1C					
Improve operation of A96 Elgin junctions for all users			I3B	I3I	I3B, I3C	I3F			
Improve operation of key Elgin traffic junctions	I3D, I3G, I3H, I3K		I3A	I3E					
New north / south pedestrian / cycle rail line crossings			I4B, I4C	I4A					
A96 pedestrian / cycle improvements	M1C	I4N		I4O	I2Fa			I2Fb	
On-street pedestrian / cycle improvements	I4F, I4I		I4H, I4K, I4M	I4D, I4L		I4G			
Off-road pedestrian / cycle improvements				I4J					
Development enabling infrastructure									I3J, I5A, I4E
Elgin pedestrian crossing improvements	M1A, M1B, M1D								
Elgin town centre traffic management		M2A	M2B						
Elgin public transport improvements	M3A		M3D	M3B	M3B		M3B		
Elgin Travel Planning	M4A, M4C, M4D		M4B						
Revise function of city centre streets	I2A, I2J			I2B, I2I			I2E	I2C, I2Ca, I2D	
Provision of information to support use of all modes of travel	IN1A								
Town Wide investigation of on and off-street car parking provision		M5A							

The following tables, Table 7.2 to Table 7.6, outline appraisal of each of these option packages. It is important to note that the aspirational packages have been assumed to include all the options contained within the core packages and therefore any assessment of the core packages is assumed to stand for the aspirational package as well. Additionally, for packages with an A96 bypass included, those options assumed within the 'without bypass' packages were also assumed to be included in the 'with bypass' package.

In appraising each options package, where possible, the results of a modelling exercise using the Elgin Traffic Model to test various traffic network options were utilised to assist with quantitative appraisal, particularly in terms of journey time changes and network performance. A variety of other data sources and professional experience was also used to inform appraisal.

The costs outlined to implement each package were derived from a 'tool kit' of typical option costs set out in a report prepared specifically for this study, 'Elgin Transport Study, Option Estimates 25 August 2016'. Cost ranges are given rather than specific values because, at this stage, exact values cannot be given prior to any detailed design.

Table 7.2 - Short Term Package Appraisal Summary Table

Package – Short Term (2018)								
Content								
Short term packages includes the following specific Options: **Core** • I2A – Moss Street – convert to one-way (northbound) & widen footways/cycle lanes • I2J – Review measures to reduce vehicle movements around schools • I3D – South St / Hay St Roundabout – improve operation • I3G – Bilbohall Road / Fleurs Road / Mayne Road / Wards Road rationalisation • I3H – Edgar Road / The Wards – improve operation • I3K – Morrison Road/ North St : Signal improvements • I4F – Provide cycle lanes alongside Station Road • I4I – Provide cycle parking in Elgin where cycle paths enter the town • IN1A – Provision of information to support use of all modes of travel • M1A – Edgar Road: Review and redesign / add pedestrian crossing • M1B – Station Road: Review and redesign pedestrian crossings on Station / Maisondieu Road • M1C – A96 in Elgin: Review / redesign / add to pedestrian crossings • M1D – Thornhill Road: Review / redesign / add to pedestrian crossings • M3A – Elgin / Moray: Investigate use of technology to manage demand responsive bus service provision • M4A – The Moray Council: Undertake robust Travel Plan for The Moray Council • M4C – Development: Specify requirement for current best practice Residential Travel Plan for all new development • M4D – Schools: Robust Travel Planning for all Elgin schools **Aspirational** • I4N – A96/South Street (Dr Gray's) – improvements to pedestrian/cycle provision and crossing • M2A – Town centre: Investigate revising town centre speed limit to 20mph • M5A – Town Wide investigation of on and off-street car parking provision								
Description								
The short term packages include mainly 'quick win' options; those that are likely to be relatively straightforward to deliver, mainly at the lower end of the cost range. As such, these could be delivered without significant planning and capital expenditure whilst still being likely to deliver wide ranging benefits for all modes of travel, and set the foundations for the successful implementation of the Medium and Long term packages. The Options contained within the Core package are considered essential to the successful delivery of the Strategy whilst the Options contained within the Aspirational package are considered desirable, should funding and planning permit.								
Objectives						**Deliverability (I.e. planning, timescales, third party issues etc)**	**Feasibility (I.e. physical constraints, land availability, design standards etc)**	**Cost**
1	**2**	**3**	**4**	**5**	**6**			
Ease of Access *Make it easier for people to get between home, work, social activities and services.*	**Journey time reliability** *Make how long it takes to get around Elgin more predictable and consistent.*	**Journey time reduction for sustainable modes** *Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport*	**Safety** *Make journeys feel and be safer*	**Shift to sustainable modes** *Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars*	**Elgin Attractiveness** *Enhance Elgin's appearance by sensitively integrating any physical changes.*			
Core Package								
This package will provide moderate improvements to access for all modes of travel. Walking and cycling modes will benefit most, in particular via a number of improved road crossing opportunities. Public transport will be promoted through travel plans and improved through enhancements to demand responsive	Elgin Traffic Model runs highlight that very modest time savings can achieved by the core package options on key routes in to and around Elgin when compared with a situation where nothing is done. These mainly occur in the PM peak, particularly on the A941 Rail crossing southbound (2 second reduction) and A96 eastbound into Elgin (2 second reduction) and A96 around Alexandra Road (1	Improved crossing opportunities and more direct walk and cycle routes for key central areas mean this package will reduce walk and cycle times for many whilst improvements to demand responsive public transport will potentially reduce total public transport journey times, particularly for those living in outlying areas travelling into Elgin.	There are a number of accident recorded on / around Edgar and Station Roads and in particularly on the A96. By providing measures to reduce vehicle movements outside schools, improve on and off-road pedestrian and cycle infrastructure and provide controlled pedestrian crossing opportunities around these areas of high accident rates, this package will improve	Travel Planning measures for The Moray Council, new developments and Schools are likely to form a reliable basis for mode shift towards sustainable travel. Additionally the included options which result in more direct routes to key locations for pedestrians and cyclists are likely to result in moderate mode share improvements and robustly support the Travel Plans.	The majority of options within this package are unlikely to result in significant physical changes, although reducing the amount of traffic on Moss Street will potentially improve the appearance of this area overall.	All options included within this package are considered deliverable by 2018, although are subject to funding.	All package options are considered feasible as none are anticipated to require third party land, suffer physical constraints and are anticipated to be deliverable to current standards.	£1.5 to £3 million

services potentially opening up access to a greater catchment. Vehicular access will be improved through improvements to a number of key junctions, easing progress through the network.	second reduction). Whilst these reductions are modest, they show that measures such as a 20pmh area can be implemented without detriment to the traffic network and, overall, the combined effect of the options will assist in ensuring greater consistency in journey times around Elgin. **See appendix for a more in-depth analysis of the results of modelling.*		both actual and perceived safety for pedestrians and cyclists. Additionally introducing signal control at select junctions will potentially reduce vehicle accidents at these locations.					
Aspirational Package								
As the Core package but the reduction in speeds around the town centre is likely to smooth the operation of the traffic network and thus ease access. Additionally, improved crossing opportunities around Dr Gray's are likely to additionally improve access for pedestrians.	Model runs again highlight that very modest time savings can achieved by the aspirational package options on key routes in to and around Elgin. These occur in both the AM and PM peaks, particularly on the A96 around Alexandra Road (6 second reduction in the AM peak and 1 second reduction in the PM peak), the A941 Rail crossing northbound (2 seconds in both the AM and PM peaks) and southbound (1 second AM and 3 seconds in the PM peak), Also on the A96 eastbound into Elgin (1 second reduction in the PM peak). Again whilst these reductions are modest, the combined effect will assist in ensuring greater consistency in journey times around Elgin, likely assisted by better traffic flow operation in the area of the new 20mph zone.	Similar to the Core package but with moderate additional reductions as a result of improved A96 crossing opportunities for pedestrians in the vicinity of Dr Gray's.	There are a number of serious pedestrian / vehicle accidents observed around the town centre. However, relatively significant improvements in safety over the Core package can be derived by this package through the introduction of a 20mph speed limit for the town centre. This will improve safety for all modes of travel. Also an additional controlled crossing on the A96 will improve safety further for pedestrians.	As Core package with slight improvement with an additional controlled pedestrian crossing.	Will improve upon the Core package because the 20mph town centre speed limit will create a more pleasant environment to move around for all modes of travel.	All options included within this package are considered deliverable by 2018, however the results of the investigation of parking provision will inform the deliverability of this action in more detail. All options are subject to funding.	All package options are considered feasible as none are anticipated to require third party land, although the results of the parking provision study will inform this fully at the time it is completed. None of the options suffer physical constraints and are anticipated to be deliverable to current standards.	£150,000 - £300,000

Table 7.3 - Medium Term Package Appraisal Summary Table

Package – Medium Term (2022)								
Content								
Medium term packages includes the following specific Options: **Core** • I1B - New north / south rail bridge: Ashgrove / Linkwood Rd to Maisondieu Rd - two way arrangement w' signals • I3A - New Elgin Road - improve performance / replace junctions N/S of railway • I3B - A96 between Northfield Terrace & North Street - replace existing roundabout junctions with signals - controlled pedestrian provision • I4B - New cycle / pedestrian north / south rail bridge: Ashgrove Road • I4C - New cycle / pedestrian north / south rail bridge: Bilbohall Road / Fleurs Road • I4H - Provide cycle lanes alongside Linkwood Road • I4K - Active Travel Route between Pinefield and East End Primary School • I4M - A941/Lesmurdie Road: improvements to pedestrian/cycle provision and crossing • M2B - Congested areas (A941 / A96): Investigate Urban Traffic Control • M3D - Main Road entry points into Elgin: investigate sites for park and change with direct access to active travel corridors into town via key destinations. • M4B - Elgin: Expand TMC Travel Plan initiatives to other Elgin businesses **Aspirational** • I1C - New north / south rail bridge: Ashgrove / Linkwood Rd to Maisondieu Rd - one way arrangement w' signalisation of existing north / south junctions on A941 bridge and new junctions • I2B - Moss Street - create shared surface with no general vehicle access but with two way bus access • I2I - Reverse one-way Commerce St - Lossie Wynd restricted access • I3E - Sandy Road / Glenmoray Drive: redesign layout to serve north / south demand • I3I - Wittet Drive / A96: improve operation or junction location • I4A - New cycle / pedestrian north / south rail bridge: The Wards shared path to Wards Road / St Catherines Place • I4D - New cycle / pedestrian link between Perimeter Road area to Maisondieu Road • I4J - Cycle Link Moycroft Road to Calcots Road - old railway line extension to Lossiemouth • I4L - Active Travel Route between Laichmoray Roundabout and Pansport Bridge, utilising new signal controlled crossing on A96 • I4O - A96/Wittet Drive/Sheriffmill – improvements to pedestrian/cycle provision and crossing • M3B - Bus station: redesign / improve operation (first phase)								
Description								
The medium term packages form the backbone of a successful Transport Strategy. As such, a number of the options contained within both the core and aspirational packages will be more complicated to deliver, require a significant amount of planning and require greater capital expenditure. That being said, there are also a core of more simple measures, such as travel planning and provision of on-road cycle lanes, that will effectively support the more bold measures. The provision of new rail crossings, for both traffic and non-motorised modes, will provide significant improvements to accessibility for all modes of travel and modelling work undertaken for this Strategy has demonstrated the success of these in improving journey time reliability, particularly if a one-way system is introduced around the A941 rail bridge / Ashgrove Road / Linkwood Road.								
Objectives						**Deliverability (I.e. planning, timescales, third party issues etc)**	**Feasibility (I.e. physical constraints, land availability, design standards etc)**	**Cost**
1	**2**	**3**	**4**	**5**	**6**			
Ease of Access *Make it easier for people to get between home, work, social activities and services.*	**Journey time reliability** *Make how long it takes to get around Elgin more predictable and consistent.*	**Journey time reduction for sustainable modes** *Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport*	**Safety** *Make journeys feel and be safer*	**Shift to sustainable modes** *Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars*	**Elgin Attractiveness** *Enhance Elgin's appearance by sensitively integrating any physical changes.*			
Core Package								
This package will provide significant improvements to access for all modes of travel. Walking and cycling modes will benefit significantly through the introduction of two new crossings to the east and west of	Model runs highlight that modest time savings can achieved by the core package options, particularly on the A941 Rail crossing northbound (with AM journey times decreasing by around half, or 31 seconds and PM by 18 seconds) and southbound (4 second reduction in the AM, 17	The new crossing opportunities proposed east and west of the existing A941 rail crossing will likely have a significant impact on reducing pedestrian and cycle journey times for a range of users travelling from south of the rail line	There is clearly a cluster of accidents around the A941 / rail crossing at present. Options within this package would provide dedicated cycle and pedestrian rail crossings, dedicated active travel routes and controlled crossing points	Expanding the corporate Travel Planning initiatives, focussed initially on The Moray Council at the Short term stage, to other Elgin employers should be effective at promoting mode shift towards sustainable forms of travel.	The options to provide new road and active travel bridges across the rail line will have some impacts on the appearance of Elgin. However, all are located in built up areas where a bridge structure is unlikely to have significant detrimental impacts on the	The traffic and active mode bridges are likely to be the most difficult to deliver within this package. All will require a significant amount of planning and require discussions with Network Rail on permissions to	Again the traffic and active mode bridges are likely to present issues in terms of feasibility. All are expected to require some degree of third party land, although the potential for a land swap of the existing freight yard between Ashgrove Road	£7.5 to £10 million

the A941 (currently the only direct corridor for these modes to / from Elgin town Centre across the rail line). Public transport will benefit also, with rail gaining more direct routes for pedestrians and cyclists to / from the station and bus gaining from greater route choice to / from and around the town centre. Vehicular access will be improved significantly through the introduction of additional routes across the rail line.	seconds in the PM). Whilst other more modest time savings are achieved elsewhere, the savings around the existing constrained part of the network at the A941 rail crossing alone are likely to contribute significantly to improving the reliability of journey time to / from south of the rail line in particular.	to Elgin town centre. Provision of cycle lanes are also likely to reduce cycle journey times further by facilitating less conflict with vehicles. Bus journey times are likely to reduce as a result of easing in general congestion around the key A941 corridor and greater control of peak traffic conditions around Elgin by Urban Traffic Control.	that are likely to improve both actual and perceived safety for pedestrians and cyclists significantly. Therefore there is likely to be a reduced requirement to cross the rail line on the existing A941 crossing, reducing the potential for accidents at this location. Additionally the introduction of signal control at select junctions and central Urban Traffic Control will likely reduce vehicle accidents at these locations.	Additionally the options to provide extra rail crossings and direct routes to key locations for pedestrians and cyclists are likely to result in reliable mode shift, supporting the Elgin wide Travel Plan aspirations for mode shift.	aesthetics of the town. Options to reduce vehicle congestion, such as junction improvements, if designed in accordance with best practice, could have a positive effect on the overall appearance of Elgin and make it I mode attractive place to come to and spend time within for all users.	bridge live rail lines. Other options however, including wider Travel Planning, on-road cycle lands and Urban Traffic control, should be more easily deliverable. All options are subject to funding.	and New Elgin Road with land further outside the town centre should be investigated to ease the introduction of the new traffic bridge. The other package options are considered much more feasible as they are anticipated to either require no or limited third party land, and are unlikely to suffer physical constraints and are anticipated to be deliverable to current standards.	
Aspirational Package								
The aspirational package includes all interventions, and so benefits, of the core option package but in itself introduces a number of additional options that will result in additionally improved ease of access for all. Specifically an additional pedestrian /cycle bridge and new link between Perimeter Road area and Maisondieu Road will significantly improve access for non-active modes. A one-way arrangement between the new Ashgrove Road link and existing A941 junctions is likely to lead to a longer route and less direct access to the town centre but traffic operation in that area should improve overall.	Model runs show very similar results to the core package runs, highlighting modest time savings particularly on the A941 Rail crossing northbound and southbound). Investigation of volume over capacity for the aspirational package runs also shows easing of congestion around the existing A941 crossing and Linkwood Road, resulting mainly from the one-way traffic system proposed as part of the aspirational system likely leading to more reliable journey times, particularly from the proposed Elgin South development area.	The additional pedestrian /cycle bridge, the new link between Perimeter Road area and Maisondieu Road and improved link with the old rail line should reduce journey times for non-active modes significantly overall. The option to improve bus station operation is likely to have positive effect in reducing bus delay at that location and therefore reduce journey time for services using this station.	There are several accidents that have occurred around Sandy Road, The Wards, and Wittet Drive that the additional options within this aspirational package are likely to reduce the likelihood of in future. The additional measures to accommodate off-road (with lighting) pedestrian / cycle movements should also significantly contribute to improved safety for users of these modes. Additionally, controlled pedestrian crossing opportunities will reduce accident potential. The bus station redesign should significantly improve the quality of the station, leading to a more pleasant customer experience and greater feeling of comfort and safety.	The additional measures to provide more direct pedestrian / cycle movements should reduce travel times for users of these modes, making journey times to the town centre more competitive when compared to car – providing significant incentive to shift to the more sustainable modes. Improvements to the existing bus station should improve the quality of the public transport offering, leading to greater potential for mode shift from car to bus.	The new Wards active travel bridge option across the rail line should impact upon the appearance of Elgin. However, the area around it is built up (some industrial) and a bridge structure is not likely to be significantly detrimental to the aesthetics of the town. Additionally, options to improve the layout of the bus station are likely to have a positive impact on the appearance of the town in a key central location.	The new Wards pedestrian / cycle bridge and the one way system option between A941 and Ashgrove Road are likely to be the most challenging interventions to deliver. The bridge will require consultation with Network Rail on permissions to bridge a live rail line whilst there may be some initial public objections to introducing a one-way system at a key location. The other options are likely to be more easily deliverable however. All options are subject to funding.	There is expected to be a requirement for third party land to provide a new cycle / pedestrian link between Perimeter Road to Maisondieu Road. Additionally there are likely to be physical constraints for the new Wards pedestrian / cycle bridge (in terms of providing a suitable gradient for all users when returning the bridge to road level on the north side of the rail line at St Catherines Place. However, the other package options are considered much more feasible overall.	£5 to £7.5 million

Table 7.4 - Long Term (Without A96 Bypass) Appraisal Summary Table

Package – Long Term (2030): Without A96 Bypass								
Content								
Long term packages includes the following specific Options: **Core** • I2Fa - A96 between Northfield Terrace & Pansport Roundabout : remove barriers to pedestrian movements across A96 (Partial Streetscape Treatment) • I3B - A96 between Northfield Terrace & North Street: replace existing roundabout junctions with signals - controlled pedestrian provision • I3C - A96 / Maisondieu Road: improve performance / replace • M3B - Bus station: redesign / improve operation (second phase) **Aspirational** • I3F - Ashgrove Rd/Tyock Industrial Estate / A96: rationalise priority & roundabout junctions into one junction & improve performance • I4G - Western Cycle Route - N-S non-segregated link from Wittet Drive/A96								
Description								
The long term packages mainly build up the strong backbone of the Transport Strategy provided by the Medium packages. As such, they mainly focus on taking advantage of more controlled traffic conditions to improve the environment for non-motorised users and improving operation of the remaining key junctions that have been identified as requiring action with the Strategy. These packages assume an A96 bypass has not been implemented at this stage and, as such, must still accommodate through trunk road movements.								
Objectives						**Deliverability (I.e. planning, timescales, third party issues etc)**	**Feasibility (I.e. physical constraints, land availability, design standards etc)**	**Cost**
1	**2**	**3**	**4**	**5**	**6**			
Ease of Access *Make it easier for people to get between home, work, social activities and services.*	**Journey time reliability** *Make how long it takes to get around Elgin more predictable and consistent.*	**Journey time reduction for sustainable modes** *Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport*	**Safety** *Make journeys feel and be safer*	**Shift to sustainable modes** *Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars*	**Elgin Attractiveness** *Enhance Elgin's appearance by sensitively integrating any physical changes.*			
Core Package								
The main benefit to this objective will be delivered by option I3B, by removing some of the barriers for pedestrians between the north and south sides of the A96 in the town centre.	Model runs highlight that journey time savings can be achieved across the network as a result of core package options, particularly on the A96 (eastbound into Elgin with a reduction of 11 seconds during the AM peak) and on the A941 rail crossing (Northbound - 35 seconds in the AM peak, 24 seconds in the PM and Southbound – 11 seconds during the AM peak and 26 seconds during the PM peak). The improvements in traffic conditions on the A96 and A941, as a result of the core package over a do nothing scenario, are particularly noteworthy when considering journey time reliability as congestion is anticipated to increase significantly on these routes so, without action, journey times are likely to become highly variable.	Journey times for pedestrians and cyclists crossing the A96 are likely to be reduced through better crossing provision. Bus journey times are likely to be reduced modestly through more efficient operation of the A96 through Elgin.	Investigation of accident records highlight that the majority of accidents in Elgin occur on the A96 and around its junctions. The introduction of signal control at key A96 junctions should reduce accident potential at these locations. Additionally the measures to reduce barriers to crossing the A96, and controlled crossing points at key locations, should improve both actual and perceived safety for pedestrians and cyclists significantly.	Removing barriers to crossing the A96 is likely to result in the walking and cycling modes becoming more attractive, therefore encouraging mode shift.	The removal of barriers to crossing the A96 for non-motorised users and easing of operational issues at town centre junctions should have a positive effect on the appearance and feel of this part of Elgin if best practice guidance is followed. .	All options within this package should be deliverable as each build upon the foundations set by the medium term packages with additional time to implement them. All options are subject to funding.	All options are unlikely to require third party land, other than the trunk road controlled by Transport Scotland. All are in line with current guidance and design standards.	£1 to £2.5 million

Aspirational Package								
Whilst cyclists can already cycle along the route between A96 and Wittet Drive, the provision of a cycle specific link will improve access for cyclists in a part of Elgin now well served for cyclists. Rationalisation of the Ashgrove Rd/Tyock Industrial Estate / A96 junctions will lead to a less conflicting arrangement for vehicles, pedestrians and cyclists, thus improving access modestly in this part of the network.	The improvements in traffic conditions as a result of the aspirational package are likely to be very similar to core package and therefore the same comments stand with regards the potential success of this option package in improving journey time reliability.	Cycle journey times in west Elgin are likely to be reduced modestly as a result of the A96 and Wittet Drive cycle link contained within this package.	Several accidents were observed to have occurred previously on or around The Wards and Wittet Drive. By introducing a cycle specific link in the vicinity of this, this option package will likely reduce cycle / vehicle conflicts and therefore reduce accident potential overall. Additionally The introduction of signal control at a key A96 junction should reduce the existing number of conflicts in east Elgin and so reduce accident potential at this location.	The cycle link should reduce cycle travel times modestly and, by providing a degree of separation from traffic, could increase cycle mode share in this part of Elgin. Signal control of the Ashgrove Rd / Tyock Industrial Estate / A96 junctions will improve pedestrian crossing provision in this part of Elgin, potentially encouraging people to walk where they previously did not because of issues crossing existing junctions.	The options within this package, with appropriate design, will likely have no detrimental impact on appearance	Options are likely to be deliverable as each build upon the foundations set by the medium term packages with additional time to implement them. All options are subject to funding.	Each option is unlikely to require third party land, other than the trunk road controlled by Transport Scotland. Each are in line with current guidance and design standards.	£500k to £1 million

Table 7.5 - Long Term Package (With A96 Bypass) Appraisal Summary Table

Package – Long Term (2030): With A96 Bypass								
Content								
Long term, with A96 Elgin bypass, packages includes the following specific Options: **Core** • I2E - South Street - pedestrianise between Commerce & Batchen Street • M3B - Bus station: redesign / improve operation (finalise) **Aspirational** • I2C - Moss Street: pedestrianise • I2Ca - Moss Street: pedestrianise including reverse one-way Commerce St • I2D - Reidhaven St / Culbard St / Batchen St - pedestrianise • I2Fb - A96 between Northfield Terrace & Pansport Roundabout - remove barriers to pedestrian movements across A96 (Full Streetscape Treatment)								
Description								
These packages assume an A96 bypass has been implemented and, as such, there will be a reasonably significant reduction in trunk road traffic through Elgin. As such, the options within these packages take advantage of less congested traffic conditions to give road space over to non-motorised users whilst still maintaining access to the majority of the town for vehicles, as required.								
Objectives						**Deliverability (I.e. planning, timescales, third party issues etc)**	**Feasibility (I.e. physical constraints, land availability, design standards etc)**	**Cost**
1	**2**	**3**	**4**	**5**	**6**			
Ease of Access *Make it easier for people to get between home, work, social activities and services.*	**Journey time reliability** *Make how long it takes to get around Elgin more predictable and consistent.*	**Journey time reduction for sustainable modes** *Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport*	**Safety** *Make journeys feel and be safer*	**Shift to sustainable modes** *Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars*	**Elgin Attractiveness** *Enhance Elgin's appearance by sensitively integrating any physical changes.*			
Core Package								
This option will improve access to South Street and other streets within the town centre for pedestrians by giving existing road space over to pedestrians.	Model runs highlight that journey time savings can be achieved across the network as a result of core package options, particularly on the A96 (eastbound into Elgin with a reduction of 11 seconds during the AM peak) and on the A941 rail crossing (Northbound - 35 seconds in the AM peak, 24 seconds in the PM and Southbound – 11 seconds during the AM peak and 26 seconds during the PM peak). The improvements in traffic conditions on the A96 and A941, as a result of the core package over a do nothing scenario, are particularly noteworthy when considering journey time reliability as congestion is anticipated to increase significantly on these routes so, without action, journey times are likely to become highly variable.	Journey times for pedestrians and cyclists crossing the A96 are likely to be reduced through better crossing provision. Bus journey times are likely to be reduced modestly through more efficient operation of the A96 through Elgin.	Investigation of accident records highlight that the majority of accidents in Elgin occur on the A96 and around its junctions. The introduction of signal control at key A96 junctions should reduce accident potential at these locations. Additionally the measures to reduce barriers to crossing the A96, and controlled crossing points at key locations, should improve both actual and perceived safety for pedestrians and cyclists significantly.	Removing barriers to crossing the A96 is likely to result in the walking and cycling modes becoming more attractive, therefore encouraging mode shift.	The removal of barriers to crossing the A96 for non-motorised users and easing of operational issues at town centre junctions should have a positive effect on the appearance and feel of this part of Elgin if best practice guidance is followed. .	All options within this package should be deliverable as each build upon the foundations set by the medium term packages with additional time to implement them. All options are subject to funding.	All options are unlikely to require third party land, other than the trunk road controlled by Transport Scotland. All are in line with current guidance and design standards.	£300k to £600k

Aspirational								
This option package builds upon the core package and therefore offers significantly improved pedestrian access around the town centre, the bus station and between the centre / bus station and the rail station. Access for vehicles to parking around properties in this part of Elgin is likely to be less direct but still maintained.	The improvements in traffic conditions as a result of the aspirational package are likely to be very similar to core package and therefore the same comments stand with regards the potential success of this option package in improving journey time reliability.	Cycle journey times in west Elgin are likely to be reduced modestly as a result of the A96 and Wittet Drive cycle link contained within this package.	Several accidents were observed to have occurred previously on or around The Wards and Wittet Drive. By introducing a cycle specific link in the vicinity of this, this option package will likely reduce cycle / vehicle conflicts and therefore reduce accident potential overall. Additionally The introduction of signal control at a key A96 junction should reduce the existing number of conflicts in east Elgin and so reduce accident potential at this location.	The cycle link should reduce cycle travel times modestly and, by providing a degree of separation from traffic, could increase cycle mode share in this part of Elgin. Signal control of the Ashgrove Rd / Tyock Industrial Estate / A96 junctions will improve pedestrian crossing provision in this part of Elgin, potentially encouraging people to walk where they previously did not because of issues crossing existing junctions.	The options within this package, with appropriate design, will likely have no detrimental impact on appearance	Options are likely to be deliverable as each build upon the foundations set by the medium term packages with additional time to implement them. All options are subject to funding.	Each option is unlikely to require third party land, other than the trunk road controlled by Transport Scotland. Each are in line with current guidance and design standards.	£2.5 to £5 million

Table 7.6 - Specific Development Enabling Package Appraisal Summary Table

Package – Specific Development Enabling Options								
Content								
The development enabling package includes the following specific Options: • I3J - Morriston Road / A96: improve operation / redesign layout to accommodate all modes. Consider incorporating access into development to south, providing an entry feature to Elgin • I4E - Pave and light dismantled railway path to link Elgin South area with Reiket Ln path (to standard of River Lossie Cycle route) • I5A - Extension of Edgar Road (with segregated active travel paths) to connect with dualled A96 (south option)								
Description								
Whilst the options contained within this package were considered to score sufficiently in early appraisal to warrant inclusion within the overall Strategy, alone each does not sufficiently contribute to the Elgin transport network as a whole to warrant inclusion within any of the Core or Aspirational packages. The reason for this is that they are considered development enabling options, i.e. options that would only be required if areas that they access are developed, but in isolation would be relatively ineffective. As such, they have been titled 'Specific Development Enabling Options' and are included to ensure they are delivered through, for example, planning obligations should the areas they access be developed.								
Objectives						**Deliverability (I.e. planning, timescales, third party issues etc)**	**Feasibility (I.e. physical constraints, land availability, design standards etc)**	**Cost**
1	**2**	**3**	**4**	**5**	**6**			
Ease of Access *Make it easier for people to get between home, work, social activities and services.*	**Journey time reliability** *Make how long it takes to get around Elgin more predictable and consistent.*	**Journey time reduction for sustainable modes** *Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport*	**Safety** *Make journeys feel and be safer*	**Shift to sustainable modes** *Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars*	**Elgin Attractiveness** *Enhance Elgin's appearance by sensitively integrating any physical changes.*			
These options all improve access to areas with currently limited access to the Elgin transport network. As such each successfully meet this objective, but are only worthwhile if the areas they access are developed.	More runs of the development enabling options were not completed for this strategy. However, should they be implemented careful consideration must be given to how they affect operation of the traffic network to ensure they do not impact upon journey time reliability.	Each option will include allowance for improving access to sustainable modes and, as there is limited existing infrastructure in the areas they serve at present, they will reduce future journey times compared to the position if the options weren't implemented. Option I4E is likely to have a significant impact on reducing walk and cycle journey times into Elgin when compared to using the existing network.	By providing infrastructure built to current safety standards, each option within the package would have a positive effect on safety for future users of the areas they serve. However, should the areas not be developed, they would have negligible impact on safety.	As each option will include allowance for accommodating sustainable modes of travel and, therefore, should the areas they serve be developed, they would positively promote a shift to sustainable modes. Option I4E is likely to have a significant impact on reducing walk and cycle journey times into Elgin when compared to using the existing network.	Given the isolated nature of each option, they will likely have minimal affect overall on Elgin's attractiveness. It is likely that an extension of Edgar Road to a potential south A96 bypass would need to be the subject of an Environmental Assessment.	Each option within this package would be the subject of future planning conditions as the various areas they serve are developed out. Each is considered deliverable but this will depend on the various circumstances at the time that they are developed in detail (unknown at this stage). .	All of these options will be reliant on third party land and, as such, the feasibility of each will be dependent on the specific circumstances at the time each is developed up.	£7.5 to £10 million

8. Monitoring and Evaluation

8.1 Overview

Following finalisation, adoption and implementation of the strategy, a key action will be to assess the success to which it meets its vision and objectives through a process of Monitoring and Evaluation. This process should be informed by a continual program of data gathering across the life of the strategy (monitoring), used to assess progress against a series of outcomes that are measured through key performance indicators (evaluation).

8.2 Outcomes and Performance Indicators

The outcomes of any strategy should be directly linked to its objectives and should be measurable, i.e. what quality of change should be expected to be seen if an objective is successfully being met. The study objectives are noted below alongside the expected outcome:

Table 8.1 - Objectives and Outcomes

Study Objectives	Expected Outcome
Make it easier for people to get between home, work, social activities and services	Improved accessibility to transport for all
Make how long it takes to get around Elgin more predictable and consistent	Improved journey time reliability for all modes
Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport	Reduced journey times for active travel and public transport
Make journeys feel and be safer	Improved safety on Elgin's transport network
Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars	Increased modal share for public transport and active travel
Enhance Elgin's appearance by sensitively integrating any physical changes	Increased degree to which streets meet Designing Streets / Places six key qualities

It is recommended that base (existing) data is gathered for the following performance indicators with regular monitoring undertaken as a means of evaluating the success of the strategy:

Improved accessibility to transport for all:

- Cost of public transport
- Cost of car parking
- Public transport timetable coverage
- Average public transport journey times from / to key destinations
- Average car journey times from / to key destinations
- % of public transport fleet that is accessible
- Public views on the convenience of public transport and convenience of walking and cycling

Improved journey time reliability for all modes:

- Journey time variability by public transport
- Journey time variability by car
- Journey time variability by cycling
- Journey time variability by walking

Reduced journey times for active travel and public transport:

- Average journey times by walking from / to key destinations
- Average journey times by cycling from / to key destinations
- Average journey times by public transport from / to key destinations

Improved safety on Elgin's transport network:

- Road traffic casualty statistics: fatalities/ seriously injured, child fatalities or seriously injured and slight casualties
- Casualties / miles travels
- CCTV coverage of Elgin's transport network
- Public views on fear of crime on Elgin's transport network.

Increased modal share for public transport and active travel:

- Numbers of workers / students or visitors citing their usual method of travel to Elgin as public transport and / or active travel
- Public transport patronage levels
- Volumes of bicycles using cycle network
- Volumes of pedestrians on main routes into Elgin town Centre

Increased degree to which streets meet Designing Streets / Places six key qualities:

- Results of street audits
- Public views on the attractiveness of Elgin

A set of targets should be set at the implementation of the strategy as a reliable means of evaluating progress. These targets should be based upon existing trends and observations and, whilst they should be ambitious given the ambitious nature of the strategy, they should also be realistic and achievable.

It is recommended that monitoring intervals should be regular. 1 year, 3 year and 5 year monitoring intervals are recommended in line with established best practice guidance in Scotland.

9. Summary and Conclusions

9.1 Summary

As the main population centre and economic hub of Moray, Elgin generates a relatively large number of trips, particularly during the morning and evening peaks. Whilst Elgin enjoys a relatively high share of trips on foot or by bicycle, these trips are primarily undertaken only by those who travel from areas close to the town centre. Being a particularly rural part of Scotland, with a relatively sparse public transport network, Moray has a high car ownership level and this currently translates into a high proportion of trips attracted to Elgin from the surrounding areas being undertaken by private car. This leads to instances of congestion and unreliable journey times around the main routes into and out of Elgin, parking issues and a general feeling that use of the more active modes of travel is unattractive around these routes.

With the recent publication of the Moray Local Development Plan (2015), which amongst other elements includes housing allocations of several thousand new homes in and around Elgin, there are expected to be a significant number of additional trips on the Elgin transport network in future years.

The Moray Council wishes to be proactive in ensuring that existing and future trips can be accommodated on the local transport network in an as efficient way as possible. As such they commissioned the undertaking of a study to prepare a Transport Strategy for Elgin to cover both the short-term and the medium / long term (to 2030). This study investigates current operation of the network, and previous trends, and consulted widely in an attempt to gather as many views as possible from those people that use the network on a frequent basis.

A range of options were generated with an aim of improving the transport network for all users, regardless of the means of travel chosen. These options also took cognisance of the likely future travel demands anticipated to be placed upon the network. These options were appraised using a range of strategy objectives with only those options judged to satisfactorily address these objectives retained for refinement. Development of the retained options then investigated how they might be implemented and how they might work ‘on the ground’. Successful options were assembled into logical packages to form an Action Plan for the strategy. A final appraisal was then undertaken to check the robustness of each package.

9.2 Methodology and Findings

For trips to Elgin, it was found that car was the main mode of travel, followed by walking. The majority of Elgin’s workforce comes from within Elgin whilst the next highest proportion of the workforce comes from within the Moray Council area, particularly Lossiemouth, Forres and Buckie. The remainder, in significantly lower numbers, come from further afield, with the majority of these from Aberdeen or Inverness.

The busiest traffic routes into and through Elgin are the A941 and A96 trunk road; the majority (around three quarters) of A96 traffic is to / from Elgin, whilst around a quarter passes through Elgin to other destinations. In general, traffic volumes have increased year on year since 2010 across the Elgin traffic network, particularly during the peak periods which are 08:00 to 09:00 and also 16:00 to 17:00. Traffic congestion has increased on the approaches to several key junctions, mainly located on the A941 and A96, particularly during the peak periods. There is evidence to suggest some motorists are rerouting away from these congested (but direct) routes into and out of Elgin. However the limited number of rail crossing points constrains the choice of routes for motorists.

There has been growth in passenger numbers on TMC operated Demand Responsive bus services over recent years with an expansion in coverage of this service to accommodate this growth but most public transport journeys to / from Elgin are facilitated by either private bus operators or rail. Whilst rail passenger numbers using Elgin station have risen year on year since 2010, it is understood that there has been little to no grown in passenger numbers on privately operated bus services (although only anecdotal evidence was available to this study for private operations). A number of comments were recorded (from a travel survey for this study) as to the reasons for this which includes buses often not running to timetable, buses being too infrequent and a lack of information at bus stops and Elgin bus station.

There has been some isolated growth in pedestrian numbers around the town centre, particularly on parts of the High Street and Springfield Retail Parks, however around most other areas surveyed there have been declines in pedestrian activity. There were a number of comments recorded suggesting reasons for this including the fact that there are not enough pedestrian crossings, that roads are very busy and dangerous to cross, that pavements are in a poor state of repair and that cars are parking on pavements.

There has been more positive growth in the numbers of cyclists around Elgin, particularly on the main routes into and out of Elgin, such as alongside the A941 to Lossiemouth. This is likely to be as a result of a program to improve off-road cycle provision implemented by TMC and SUSTRANS. A number of comments were recorded highlighting deficiencies, stating that the surfaces of some cycle paths are poorly maintained, that there is a lack of on-route cycle specific facilities and that the high number of roundabouts in Elgin intimidates some cyclists.

A vision and objectives were prepared for this study in consultation with a range of key stakeholders and TMC officers. These were developed from a detailed assessment of the transport related Strengths, Weaknesses, Opportunities and Threats (SWOT analysis) of the Elgin transport network. The study vision and objectives are as follows:

Table 9.1 - Strategy Vision and Objectives

Vision
A forward looking transport strategy that ensures Elgin is a desirable, vibrant and healthy place to live, work and visit for all
Objectives
Make it easier for people to get between home, work, social activities and services
Make how long it takes to get around Elgin more predictable and consistent
Reduce the time it takes to get around Elgin by bicycle, on foot or by public transport
Make journeys feel and be safer
Get more people using public transport, bicycle and walking for all or some of their journey, rather than using cars
Enhance Elgin's appearance by sensitively integrating any physical changes

A large number of options were generated to address this vision and the objectives. These options provided extensive coverage of the Elgin transport network under a number of different categories including; cycle and pedestrian improvements, travel planning, bus service reviews, new road links, junction improvements and streetscape changes. All options were appraised based on their success at addressing the study objectives; those that were assessed to not satisfactorily address the objectives overall were sifted out whilst those that did were retained for further investigation, development and appraisal.

Any options that were considered to offer a similar function as another, such as various new rail crossings, were further assessed against each other and a decision made to retain only those considered most beneficial or deliverable / feasible. Decisions were also reached based on assessment operational performance (informed by traffic modelling) and potential costs.

Given the number of options appraised, and the strategic nature of this study, selected options were collected together in a variety of time specific packages. These packages effectively form an Action Plan covering the

short term (to 2018), the medium term (to 2022) and the long term (2030). Each package includes a sub-package of either Core or Aspirational options; Core options are those that are considered fundamental to the success of the strategy, i.e. those without which overall success is less likely, whilst Aspirational options include those that are assessed as effective in meeting the objectives of this study, but that are not considered fundamental to the success of the strategy. The success with which each option package collectively addresses the study objectives was assessed, along with potential costs, their feasibility and deliverability.

An additional variant was introduced for the long term packages that included the potential for a bypass to be implemented as part of the A96 dualling programme. This would be expected to lead to a reduction in traffic volumes through the town centre, with the majority of remaining traffic going to or coming from Elgin. These package variants therefore allowed for the potential to introduce additional 'streetscaping', taking advantage of easing traffic conditions to award more priority to the more active modes of travel and quality of environment.

An outline strategy for monitoring and evaluating was prepared, identifying key measurable performance indicators, to gauge the success of the strategy.

9.3 Conclusions

Overall, all suggested option packages are considered successful in addressing the strategy objectives. Each package is balanced, feasible and deliverable over its specific time period, subject to funding, and each includes a range of interventions sought by the public and stakeholders.

Quantitative data derived from modelling shows that each package offers a varying degree of improvement to traffic network conditions, when compared with a do-nothing scenario predicted at the same time. Whilst specific vehicle journey time savings / changes may be only modest in some areas, journey times are likely to be more consistent and controlled overall, leading to a more efficient transport network for cars, buses and active modes of travel.

Safety should also be improved through improved traffic network conditions, as well as the number of additional or improved active traffic routes and crossings. Improvements in road safety and active travel provision have significant potential to increase the proportions of trips within and to / from Elgin by non-vehicular modes.

The study has concluded in a bold but practical and costed strategy for delivering the clear vision of Elgin as a desirable, vibrant and healthy place to live, work and visit for all. Development proposals for planned Elgin over the duration of this strategy are significant and TMC requires careful attention to the design of new development to ensure they connect to the existing and future planned active travel and public transport networks. This is because a significant uptake of active travel and public transport could lead to a reduction in the impact of these new developments on the transport network of Elgin, when compared with traditional development design which focuses on high car ownership and usage, and thus will be a vital component in the success of this strategy.

Appendix A. Data Review

Travel Mode Share

The 2011 Scotland Census provided mode share information for Elgin was obtained from Table QS701SC – Method of travel to work or study (All people aged 4 and over who are studying or aged 16 to 74 in employment in the week before the census). Data was also obtained from the same location for The Moray Council region and Scotland as a whole for a direct comparison, as can be seen in Table A1. Elgin's mode shares are in line with both Moray and Scotland's mode share, however is notably more 'active travel' with a substantially larger uptake of walking and cycling to work and study but lower uptake of working or study from home or bus.

Table A 1 - Mode share to work and study for Elgin, Moray and Scotland areas according to the 2011 Scotland Census

Location	Work or study mainly at or from home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi or minicab	Driving a car or van	Passenger in a car or van	Motorcycle, scooter or moped	Bicycle	On foot	Other
Elgin	8.9%	0.0%	2.3%	4.2%	0.9%	41.1%	10.7%	0.2%	3.0%	26.7%	1.8%
Moray	12.1%	0.0%	1.9%	7.8%	0.9%	42.8%	9.4%	0.3%	2.3%	19.8%	2.6%
Scotland	11.3%	0.3%	3.5%	13.4%	0.7%	40.9%	9.0%	0.2%	1.3%	18.5%	0.9%

Where people are travelling to/from

The maps and data in this section were produced from Origin-Destination data from Table WU03BSC_IZ2011_Scotland, derived from the 2011 Scotland Census. This table includes data for "Location of usual residence and place of work by method of transport". Origin-Destination locations are specified as 'Intermediate Zones', of which there are 6 representing Elgin and were used for the analysis:

- S02002084 Elgin Cathedral to Ashgrove and Pinefield
- S02002085 New Elgin East
- S02002086 New Elgin West
- S02002087 Elgin Central West
- S02002088 Elgin Bishopmill East and Ladyhill
- S02002089 Elgin Bishopmill West and Newfield

Analysis of the Origin-Destination data allowed investigation of the percentage of people living in Elgin travelling to each of the 6 intermediate zones in Elgin for work. This was used to produce a map in ArcGIS to represent the flows. Results are shown in Table A2:

Table A 2 - Percentage of people from Elgin who travel to work within Elgin, including the Intermediate Zone area of their destination

Residence	Workplace (Intermediate Zone)	People aged >16	% of People >16
Elgin	S02002084	2,097	18.8%
	S02002085	391	3.5%
	S02002086	978	8.8%
	S02002087	1,521	13.6%
	S02002088	1,410	12.6%
	S02002089	296	2.7%
	Total	6,693	59.9%

Further analysis using the same method with the Intermediate Zone Origin-Destination data was carried out to calculate the percentage of people travelling to and from Elgin to work. This data was also created into display maps using ArcGIS of the North/North East to visually convey these movements.

Table A 3 - The number and percentage of people travelling to and from Elgin to work, according to the 2011 census

Location	People travelling from Elgin	%	People travelling to Elgin	%
Aberdeen City	209	1.87%	28	0.20%
Banff	9	0.08%	18	0.13%
Buckie	141	1.26%	342	2.49%
Ellon	0	0.00%	4	0.03%
Forres	181	1.62%	622	4.53%
Fraserburgh	5	0.04%	0	0.00%
Huntly	36	0.32%	24	0.17%
Inverness	164	1.47%	78	0.57%
Inverurie	6	0.05%	9	0.07%
Keith	72	0.64%	197	1.43%
Lossiemouth	160	1.43%	1,155	8.41%
Macduff	1	0.01%	10	0.07%
Nairn	41	0.37%	85	0.62%
Peterhead	1	0.01%	0	0.00%

Traffic Data

Traffic data was gathered from Automatic Traffic Count data, collected by TMC for the local road network and Transport Scotland for the A96 trunk road data. The traffic counts were analysed and have been represented as Annual Average Daily Traffic (AADT) figures, as can be seen in Table A 4. The results show that, since 2010, there was an overall observed increase of 8,892 vehicles (4.6%) at the ATC locations, with A96 trunk road traffic increasing by 1.6% and local road traffic increasing by 8.2%.

Table A 4 - AADT link flow data from 2010 and 2015, including the percentage growth since 2010.

Location		2010 AADT	2015 AADT	% Change
A96	A96 Elgin Town Centre	16,505	16,751	1.5%
	A96 Elgin to Lhanbryde	16,214	16,123	-0.6%
	A96 Elgin East Road	21,257	22,807	7.3%
	A96 Alexandra Road	21,563	20,080	-6.9%
	A96 High Street West	13,083	13,262	1.4%
	A96 West Road	15,006	16,311	8.7%
	Total	**103,628**	**105,335**	**1.6%**
Local Roads	Linkwood Road	8,189	9,325	13.9%
	Maisondue Road	7,987	8,386	5.0%
	Reiket Lane	6,414	8,799	37.2%
	Thornhill Road	5,343	6,851	28.2%
	Wittet Drive	3,468	3,941	13.6%
	A941 Hay Street	12,776	13,271	3.9%
	A941 Main Street	10,638	10,652	0.1%
	A941 Bridge over Railway	20,819	19,203	-7.8%
	Edgar Road	7,925	9,758	23.1%
	Glenmoray Drive	4,298	4,856	13.0%
	Total	**87,857**	**95,042**	**8.2%**
	Grand Total	**191,485**	**200,377**	**4.6%**

The peak hours of 08:00-09:00 and 16:00-17:00 were calculated using the hourly ATC data provided by TMC, as can be seen in Table A 5 and Table A 6. Traffic has increased significantly on the local roads during the peak hour – by 22% in the morning peak and 25% in the evening peak.

Table A 5 - AM peak hour traffic on local roads from 2012 to 2015

Road	2012	2013	2014	2015	% Change '12-'15
Linkwood Road	602	639	602	714	18.60%
Maisondue Road	563	568	556	605	7.46%
Reiket Lane	516	541	588	655	26.94%
Thornhill Road	487	569	626	644	32.24%
Wittet Drive	279	283	337	361	29.39%
Total	**2,447**	**2,600**	**2,709**	**2,979**	**21.7%**

Table A 6 - PM Peak hour traffic on local roads from 2012 to 2015

Road	2012	2013	2014	2015	% Change '12-'15
Linkwood Road	602	862	805	925	53.65%
Maisondue Road	713	719	757	798	11.92%
Reiket Lane	763	803	797	896	17.43%
Thornhill Road	581	690	689	711	22.38%
Wittet Drive	349	350	391	418	19.77%
Total	**3,008**	**3,424**	**3,439**	**3,748**	**24.6%**

Public Transport

Demand Responsive Transport

Demand Responsive Transport patronage data was supplied by TMC, with figures provided up to May 2016. As can be seen in Table A 7, passenger numbers have risen significantly since the opening of the service in February 2014. It can be seen the number of passengers are at their highest during the summer months, and curiously, with spikes in the months of October and November.

Table A 7 - Elgin Dial-a-Bus Passenger numbers

Month	2014	2015	2016
Jan	n/a	61	185
Feb	67	68	193
Mar	26	100	183
Apr	44	92	192
May	28	124	271
Jun	30	182	255
Jul	52	183	402
Aug	74	179	425
Sep	88	174	n/a
Oct	86	209	n/a
Nov	117	186	n/a
Dec	68	176	n/a

Rail

Railway passenger data was obtained from the Office of Rail and Road (ORR) which publishes yearly statistics on Estimates of Station Usage. The data analysed was obtained from the Estimates of Station Usage for 2014-15 report published on 15th December 2015. Station estimates are calculated by combining the total number of passenger entries and exits to and from a station over the course of a year. As can be seen in Table A 8, Elgin has the highest amount of passengers of all the Moray railway stations.

Table A 8 - Estimate passenger usage at Moray's three railway stations - Elgin, Forres and Keith - from 2009/10 to 2014/15

Station	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2009/10-2014/15 Growth	2009/10 -2014/15 Averages	2004/05 - 2014/15 Growth	2004/05-2014/15 Averages
Elgin	272,928	297,546	306,964	322,324	334,537	342,466	69,538	312,794	116,950	267,609
% Change		9.0%	3.2%	5.0%	3.8%	2.4%	25.5%	4.6%	51.9%	6.1%
Forres	103,250	111,222	113,976	118,288	124,111	131,398	28,148	117,041	36,455	102,347
% Change		7.7%	2.5%	3.8%	4.9%	5.9%	27.3%	4.8%	38.4%	5.5%
Keith	77,030	89,690	94,336	95,002	97,033	102,074	25,044	92,528	35,543	79,325
% Change		16.4%	5.2%	0.7%	2.1%	5.2%	32.5%	4.9%	53.4%	6.9%

Cycling

Local Cycle Counts

Cycle count data was provided by TMC and has been analysed in Annual Average Daily Traffic format. The locations are situated throughout Elgin as displayed in Figure 2.14 in Section 2, with the results featured in Table A 9. Also considered was the Elgin – Lossiemouth route, which has an ATC counter located 5km north of Elgin town centre on the A941. The results are displayed in Table A 10.

Table A 9 - Cycle AADT counts in Elgin for 2012 and 2015, including the percentage growth between the two years' data

ATC Location	2012 AADT	2015 AADT	% Change
Glenmoray Drive	21	26	24%
Library Bikes	40	68	70%
Shaw Place	62	91	47%
Halfords	55	38	-31%
Elgin - Lossiemouth	71	72	1%
Total	**249**	**295**	**18%**

Table A 10 - Cycle AADT counts for the Elgin - Lossiemouth cycle route from 2005 to 2015, including annual percentage growth

Year	AADT	% Growth
2005	50	
2006	45	-10.00%
2007	54	20.00%
2008	59	9.26%
2009	62	5.08%
2010	56	-9.68%
2011	64	14.29%
2012	71	10.94%
2013	67	-5.63%
2014	70	4.48%
2015	72	2.86%
Growth since 2012		**1.41%**
Growth since 2005		**44.0%**

Moray Routes

Longer distance routes within Moray also had data provided for by TMC and was analysed to understand the trends in cycling across the region of Moray. The ATC count locations are as follows, and a table of indicative results are found in A11. It can be seen that there is fluctuating annual growth meaning every year there is a decrease there is a more substantial increase the following year. The uptake of cycling in the region is a positive result for Moray, showing there is a growing demand for cycle routes in and around the area.

Table A 11 - Cycle AADT counts for regional Moray cycle routes from 2005 to 2015, including the annual percentage growth

Year	AADT	% Growth
2005	174	
2006	188	8.05%
2007	179	-4.79%
2008	180	0.56%
2009	191	6.11%
2010	185	-3.14%
2011	208	12.43%
2012	226	8.65%
2013	218	-3.54%
2014	252	15.60%
2015	239	-5.16%
Growth since 2012		**5.8%**
Growth since 2005		**37.4%**

Cycle count locations:

- B9011 Forres – Kinloss Cycleway (South of Kinloss)
- B9011 Kinloss to Findhorn Cycleway
- A941 Elgin to Lossiemouth Cycleway
- SUSTRANS Cullen Viaduct
- SUSTRANS Garmouth Railway Bridge

Pedestrian Data

2016 pedestrian footfall data was provided by TMC and also obtained from the bi-annual Town Centre Health Checks Reports from 2010 to 2016, also conducted by TMC. Pedestrian footfall counts are conducted by TMC staff in the month of September, with the exception of the 2016 count which was undertaken in June.

Town Centre Pedestrian Footfall

Table A 12 outlines the total pedestrian footfall accounted for during the hours the surveys are conducted. The busiest time recorded is during the 12:00-13.55 period (with the data collection carried out over 55 minutes within this period), with overall pedestrian footfall down 12% since 2010.

Table A 12 - Overall bi-annual hourly pedestrian footfall counts in Elgin town centre from 2010 to 2016

Year / Time	10.00-10.55	11.00-11.55	12.00-13.55	14.00-14.55	15.00-15.55	16.00-16.55	Total
2010	478	595	589	520	480	450	3,112
2012	319	535	695	545	427	371	2,892
2014	453	614	637	446	432	399	2,981
2016	409	483	577	497	420	347	2,733
% Change '10-'12	-33.3%	-10.1%	18.0%	4.8%	-11.0%	-17.6%	-7.1%
% Change '12-'14	42.0%	14.8%	-8.3%	-18.2%	1.2%	7.5%	3.1%
% Change '14-'16	-9.7%	-21.3%	-9.4%	11.4%	-2.8%	-13.0%	-8.3%
% Change '10-'16	**-14.4%**	**-18.8%**	**-2.0%**	**-4.4%**	**-12.5%**	**-22.9%**	**-12.2%**

Table A13 displays the annual pedestrian counts at each location surveyed within Elgin town centre. As noted, the east end of the High Street (which is pedestrianised) has seen the only increase (24%) since 2010. It is also expected that the High Street (opp. Claire's Accessories) has the highest footfall count given its location at the pedestrianised centre of town section.

Table A 13 - Bi-annual pedestrian footfall counts by location in Elgin town centre from 2010 to 2016

Location	2010	2012	2014	2016	% Ch. 14-16	% Ch. 10-16
A96 Underpass	377	399	413	333	-19%	-12%
West end of High Street (opp. Ultimate Hair Salon)	175	144	157	148	-6%	-15%
Thunderton Place (opp. Cluny Estate Agents)	535	436	439	349	-21%	-35%
High Street (opp. Claire's Accessories)	1,254	1,132	1,239	1,138	-8%	-9%
South Street (opp. Gordon MacPhail)	370	374	312	269	-14%	-27%
East end of High Street (opp. Cancer Research)	401	409	421	496	18%	24%
Total	**3,112**	**2,894**	**2,981**	**2,733**	**-8%**	**-12%**

Edgar Road Pedestrian Footfall

TMC also conducts pedestrian footfall surveys at the Springfield Retail Park, located on Edgar Road. As shown in Table A 14, pedestrian footfall at Edgar Road is increasing significantly, in comparison with the Elgin town centre counts which has demonstrated reductions in pedestrian footfall in recent years.

Table A 14 - Edgar Road pedestrian footfall count results from 2010 to 2016, including hourly results

Year	11:15-12:15	12:15-13:15	13:15-14:15	Total
2010	262	162	225	649
2012	105	135	210	450
2014	139	234	312	685
2016	303	313	399	1,015
Total	809	844	1,146	2,799
% Ch. 2010-12	-60%	-17%	-7%	-31%
% Ch. 2012-14	32%	73%	49%	52%
% Ch. 2014-16	118%	34%	28%	48%
% Ch. 2010-16	15.6%	93.2%	77.3%	56.4%

Appendix B. Option Development

Overview

The following outlines the development of each selected option. Option development is essential to check the relative effectiveness of similar options to each other to decide on a single optimal option to be retained for the strategy, and also to check how each option might be formed ‘on the ground’, any external factors that may need to be considered, such as existing infrastructure that may need to be changes / linked to, and outline existing good practice and guidance to take cognisance of where appropriate.

The option development undertaken at this stage should act as a sound basis for undertaking detailed design should an option be selected for funding and then constructed / implemented at a later stage.

Where possible mapping has been used to identify the geographical context of an option and visualisation techniques have also been used for some options to show an outline of how they might look from ground level.

Appendix C. Modelling Summary Note

The following outlines details of the traffic modelling exercise undertaken to support of option development for this study.

Overview

Each option package was modelled using the Elgin VISUM traffic model as a basis for estimating the overall effectiveness of each package. The Elgin Traffic Model (ETM) is owned by The Moray Council and operated on their behalf by Jacobs.

The ETM is a macrosimualtion model, the extents of which cover the whole of the Elgin road network. This model can be used produce a variety of information on the strategic operation of the network for various scenarios, for comparison purposes, although it should be noted that the macro nature of the model means that it is not considered appropriate for use in demonstrating detailed operational review of small pieces of infrastructure, for example for individual junction performance review. The ETM does, however, provide the facility to review performance of the collective traffic system to check for changes in network performance, highlighting areas of constraint and areas of improvement as a result of interventions. As such, it is useful when investigating the effect of various different infrastructure interventions across a network overall, such as are proposed for this strategy. It takes account of how any changes in infrastructure, modelling the potential of vehicles diverting / rerouting from other constrained routes to other routes, this is not possible when using isolated modelling techniques.

For the purposes of this study, various model outputs were derived for the various strategy scenarios, including link volume over capacity estimates and vehicle journey time estimates for road links / routes. The following visualisations and tables outline summaries of this data for each of the Short, Medium and Long, Core and Aspiration, and with and without A96 bypass packages. Various observations are noted across the figures but a more detailed summary is as follows:

Short Term (2018)

Figure C 1 and Figure C 5 show the main areas of constraint in the short term (to 2018) when no improvement measures are implemented, as a comparison of link volume over capacity. These scenarios include background traffic growth as well as traffic growth as a result of local development assumed to be completed in line with the Local Development Plan. The areas of constraint are shown to be mainly on the A941 Rail Bridge, Edgar Road and the A941 (around East and West High Street) in the AM peak and A941 Rail Bridge, Edgar Road and the A941 (around East and West High Street), A96 around Dr Gray's Hospital and A96 between Maisondieu Road and Reiket Lane in the PM peak.

Figure C 2 to Figure C 8 shows link volume over capacity and comparison demonstrates modest improvement in road network performance in the PM peak, with short term package options implemented. This is positive as the short term packages include mostly 'quick win' improvements to pedestrian / cycle infrastructure, with the only traffic based interventions the conversion of Moss Street to one-way operation (northbound), modest reduction in some traffic travel demand as a result of travel planning initiatives and a 20mph town centre speed limit (aspirational package only). This shows that, during the AM peak, the interventions do not have a negative effect but that, during the PM peak period, they have of moderate positive effect, mainly on the A941 Rail Bridge (with both core and aspirational packages) and Edgar Road (the aspirational package only).

As with link volume over capacity, investigation of change in average journey times (Table C 1) shows very little change on key routes as a result of package options. There are instances of the very modest reductions in journey times on some routes 1 or 2 seconds), although it should be noted these are per vehicle and so, when considered against the fact that there are several thousand vehicles on these routes during the peaks, the combined benefit to all of these vehicles is more significant.

Whilst reductions in vehicle journey times in Elgin is not an objective of the strategy, the modest reductions on key routes, alongside modest improvements in link volume over capacity, are key indicators of improved vehicle journey time reliability - which is a strategy objective.

Medium Term (2022)

Figure C 9 and Figure C 13 show that, in the medium term (to 2022), doing nothing will result in a significant worsening of traffic conditions during both peaks. During the AM peak this applies particularly around the A941 Rail Bridge and Edgar Road, and on the outer entry to Elgin from the east on the A96 (around Reiket Lane), whilst in the PM peak there is anticipated to be moderate worsening of traffic conditions on the A941 Rail Bridge, the outer entry to Elgin from the east on the A96, the A96 around Wittet Drive, Reiket Lane near Linkwood Road and the A941 north of North Street.

Improvements as part of the core package of options (Figure C 10 to Figure C 16), particularly the new rail crossing, show significant improvement to network conditions overall, with all areas of the network returned to capacity in the AM peak and all but the A941(around East and West High Street) returned to capacity in the PM peak. Additionally, comparison of network performance to the short term shows that the packages improve the network to 2018 do-nothing conditions, despite the additional growth in traffic estimated during that those four years.

Investigation of changes to journey times on key routes (Table C 2) show that, overall, both the core and aspirational packages reduce journey times on these routes, particularly around the A941 Rail Bridge and A96 eastbound. Whilst there are isolated examples of slight journey time increases as a result of packages, the total change across routes is a time saving greater in magnitude than the journey time savings as a result of the short term packages. As with the link volume over capacity, comparison of network performance to the short term shows that the packages improve journey times to around those at 2018 do-nothing conditions, despite the additional growth in traffic estimated during that those four years. Additionally, whilst the overall time savings are not significant, these are per vehicle so, when applied across the several thousand vehicles on these routes in the peaks, the collective saving will be much more substantial.

The reduction in journey times on key routes, alongside significant improvements in link volume over capacity, as a result of medium term packages, indicates a high likelihood of significantly improved vehicle journey time reliability in Elgin. The addition of a new rail crossing will also improve network resilience during roadworks and road closures.

Long Term (2030)

Figure C 17 and Figure C 21 show that, in the long term (to 2030) with no infrastructure improvements, there is anticipated to be further significant worsening of traffic conditions, in the AM peak particularly on the A96 east of Maisondieu Road, around the A941 Rail Bridge and Station Road, on the A941approach to the Edgar Road roundabout, the A941 north of North Street and on Linkwood Road between Reiket Lane and the Edgar Road roundabout. In the PM peak on the A96 east of Maisondieu Road, Pansport Road, A941 / North Street and A96 between North Street and Alexandra Road and on the A96 to the west of Wittet Drive and additionally along the majority of Reiket Lane and Linkwood Road, around the A941 Rail Bridge and on the A941approach to the Edgar Road roundabout.

Figure C 18 to Figure C 24 demonstrate that both the core and aspirational packages contribute to significant improvements to traffic network performance, particularly around the Edgar Road roundabout (on all approaches) and the A96 east of the town centre, in both the AM and PM peak periods. In the PM peak the A941 Rail Bridge and Edgar Road links especially are returned to capacity.

Investigation of changes to journey times (Table C 3) shows that, by 2030 without an A96 bypass in place, the package options will offer significant reductions time on the key routes. The most significant reductions occur on the A96 into Elgin from both the east and west and on the A941 Rail Bridge both north and south. The combined improvement across all routes is over a minute per vehicle.

The significant reduction in journey times on key routes, alongside significant improvements in link volume over capacity, as a result of long term packages, indicates a high likelihood of significantly improved vehicle journey time reliability in Elgin in the long term with package options in place, which supports the strategy objective to improve journey time reliability.

Long Term (2030) – With A96 Bypass

Figure C 25 and Figure C 29 show that in the long term (to 2030), with an A96 Bypass to the south of Elgin completed (note the actual alignment of any A96 Bypass is not known at this time), traffic conditions in Elgin are likely to improve across the network, particularly on main routes into Elgin such as the A96 and A941. However, significant issues are predicted to remain in both the AM and PM peak periods around key areas of constraint such as the A941 Rail Bridge. A southern alignment bypass will likely result in an increased number of vehicle trips from outside Elgin entering and existing from / to the south. Whilst this will improve conditions of the existing A96 alignment through Elgin, it will likely exasperate existing issues on the A941 rail crossing, with conditions around this area are anticipated to be worse than they will be at 2018.

Figure C 26 to Figure C 32 demonstrate the contribution that the packages of options are likely to make in the long term with a southern alignment A96 in place, particularly at elevating the issues continuing issues around the A941 rail crossing area. There is also anticipated to be improvement on the A96 east of the town centre.

Investigation of changes to journey times (also Table C 3) shows that, with the bypass in place, the journey time savings as a result of package options are likely to be of similar magnitude as without the bypass in place, reducing journey times particularly around the A941 rail crossing and A96 eastbound into Elgin.

It is therefore demonstrated that the package options are likely to be highly successful in the long term in improving journey time reliability compared to a situation where they are not implemented.

Summary

The model results show that, overall, without action there is likely to be a significant deterioration in network performance across much of Elgin as a result of traffic growth, leading to increased congestion and journey times. This will be the case whether or whether not an A96 bypass is constructed. Its construction will likely easy congestion on the existing alignment of the A96 through Elgin, however it will put additional pressure on the limited number of existing rail crossing options.

The options included within each package are shown to successfully target the key areas of existing and future performance issues, such as around the A941 New Elgin Road, Edgar Road and the A96. The new rail crossing option in particular will not only improve operation in a highly constrained part of the network, it will provide additional network resilience by providing a further rail crossing option to motorists.

Figure C 1 - 2018 Do-Nothing, AM Peak (Link Based Volume over Capacity)

Figure C 2 - 2018 Short Term Core Package, AM Peak (Link Based Volume over Capacity)

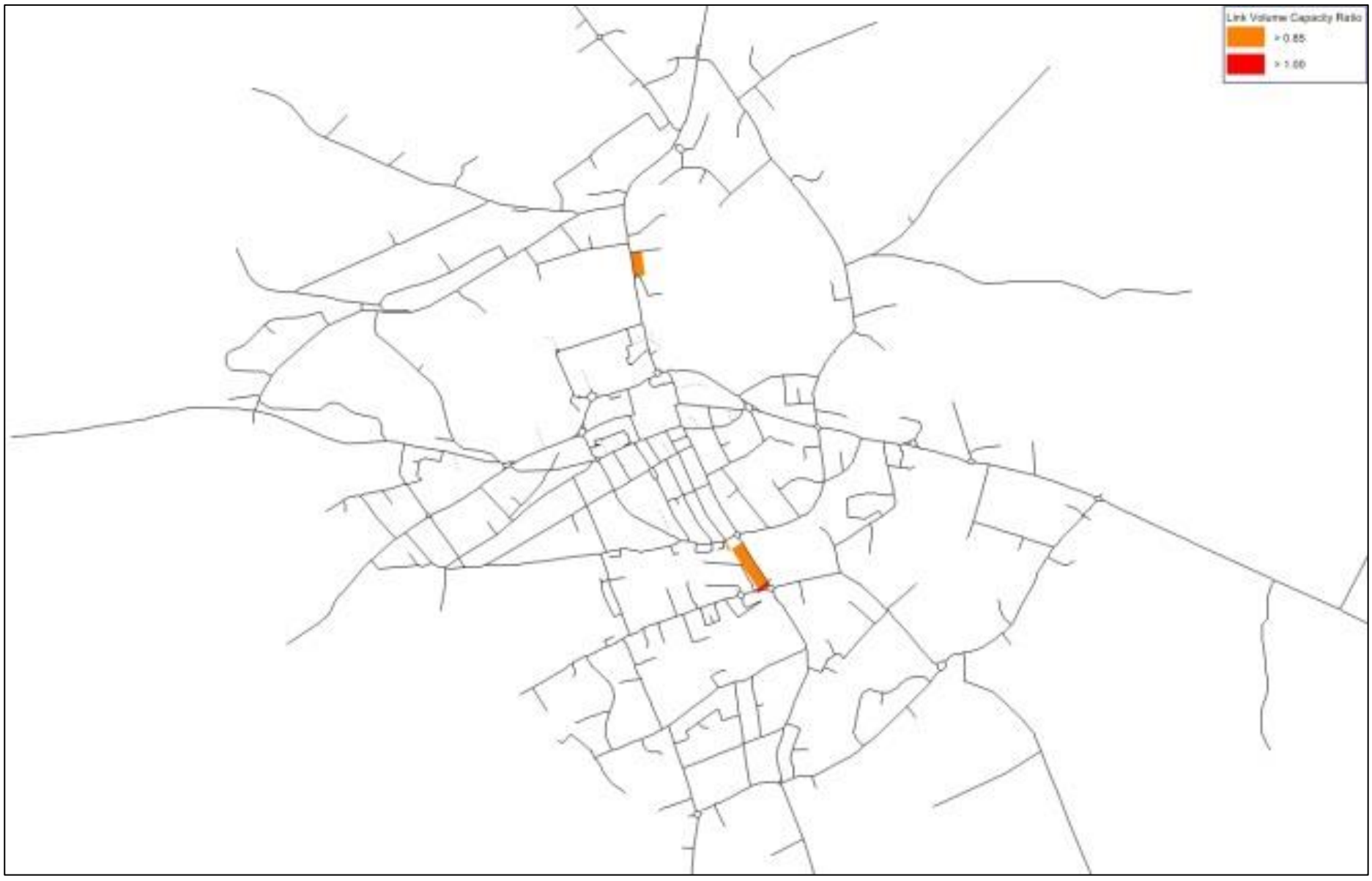

Figure C 3 - 2018 Do-Nothing, AM Peak (Link Based Volume over Capacity)

Figure C 4 - 2018 Short Term Aspirational Package, AM Peak (Link Based Volume over Capacity)

Figure C 5 - 2018 Do-Nothing, PM Peak (Link Based Volume over Capacity)

Figure C 6 - 2018 Short Term Core Package, PM Peak (Link Based Volume over Capacity)

Figure C 7 - 2018 Do-Nothing, PM Peak (Link Based Volume over Capacity)

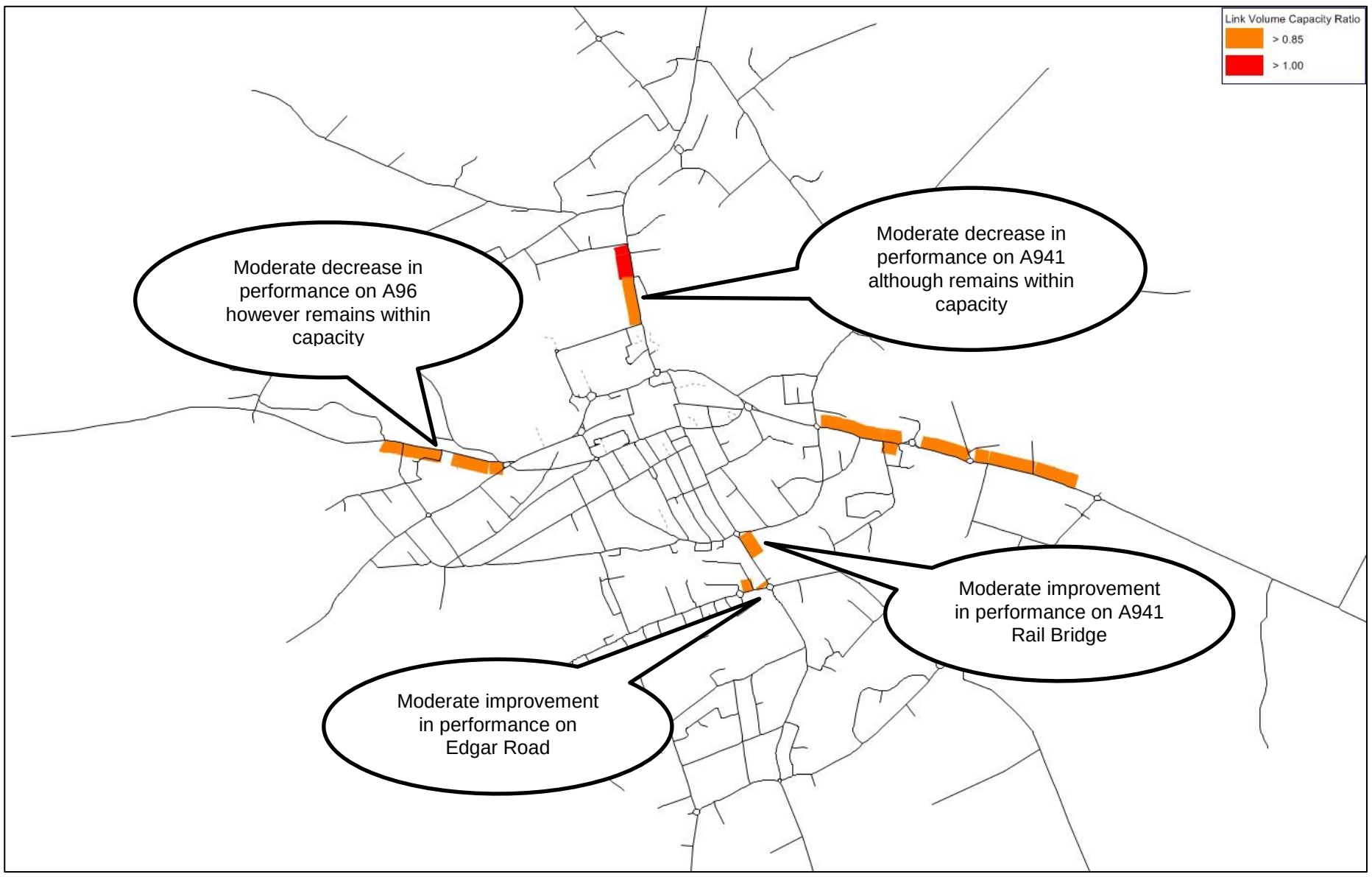

Figure C 8 - 2018 Short Term Aspirational Package, PM Peak (Link Based Volume over Capacity)

Table C 1 – 2018 Short Term Packages, Modelled Journey Times

Link / Route	Do Nothing		Core Package		Aspirational Package	
	AM	PM	AM	PM	AM	PM
A96 (EB) (outskirts to outer town centre)	2 mins 36 secs	2 mins 11secs	2 mins 36 secs	2 mins 9secs	2 mins 36 secs	2 mins 10secs
A96 (WB) (outskirts to outer town centre)	2min 34s	1min 53s	2min 33s	1min 53s	2min 35s	1min 54s
New Elgin Rd Bridge (NB)	56 secs	46 secs	56 secs	46 secs	54 secs	44 secs
New Elgin Rd Bridge (SB)	28 secs	47 secs	28 secs	45 secs	27 secs	44 secs
Edgar Road (EB)	1 min 8s	1 min 44s	1 min 8s	1 min 44s	1 min 6s	1 min 48s
Edgar Road WB	1min 5s	1min 26s	1min 5s	1min 26s	1min 4s	1min 27s

Figure C 9 - 2022 Do-Nothing, AM Peak (Link Based Volume over Capacity)

Figure C 10 2022 Medium Term Core Package, AM Peak (Link Based Volume over Capacity)

Figure C 11 - 2022 Do-Nothing, AM Peak (Link Based Volume over Capacity)

Figure C 12 - 2022 Medium Term Aspirational Package, AM Peak (Link Based Volume over Capacity)

Figure C 13 2022 Do-Nothing, PM Peak (Link Based Volume over Capacity)

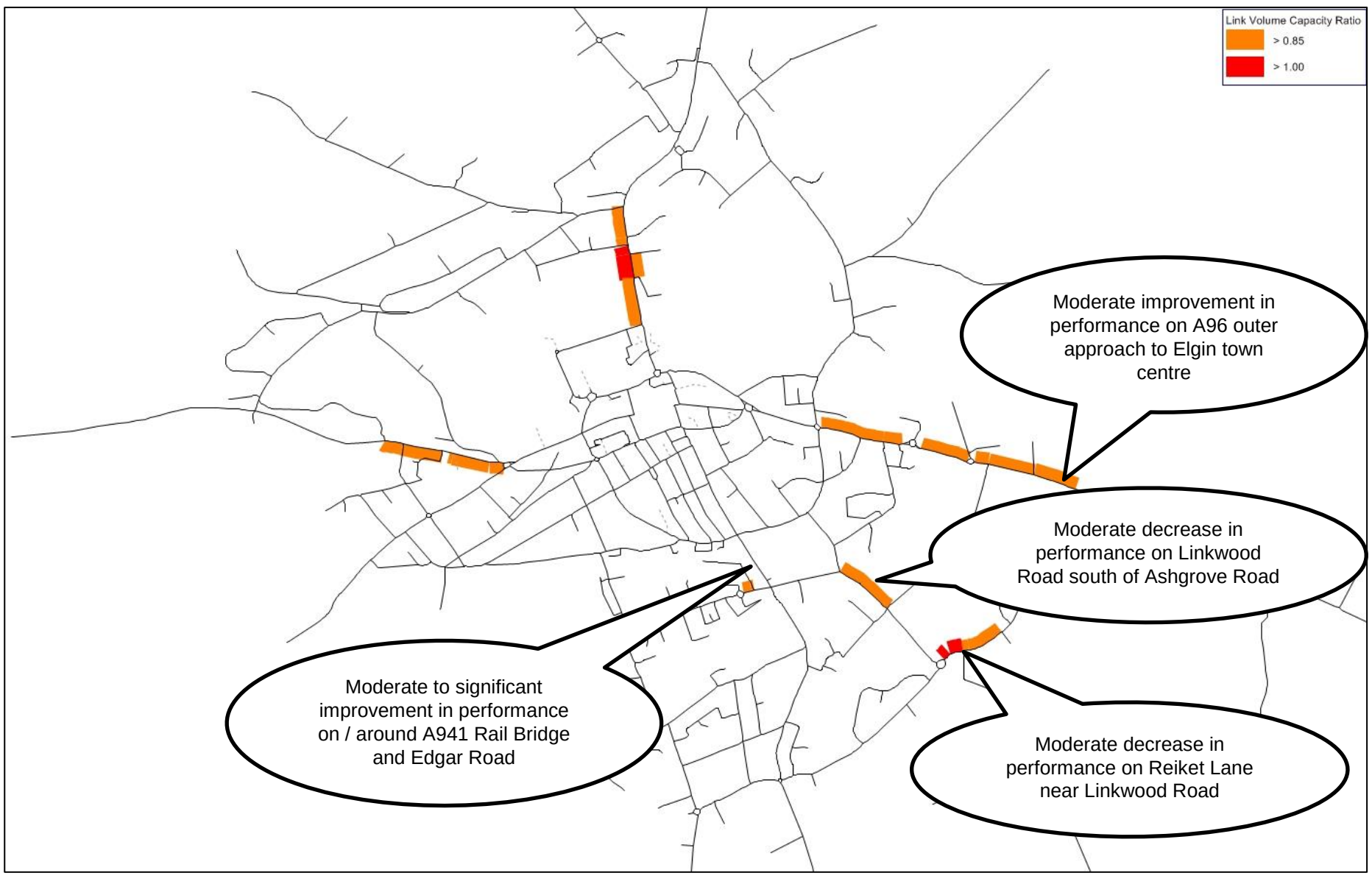

Figure C 14 2022 Medium Term Core Package, PM Peak (Link Based Volume over Capacity)

Figure C 15 2022 Do-Nothing, PM Peak (Link Based Volume over Capacity)

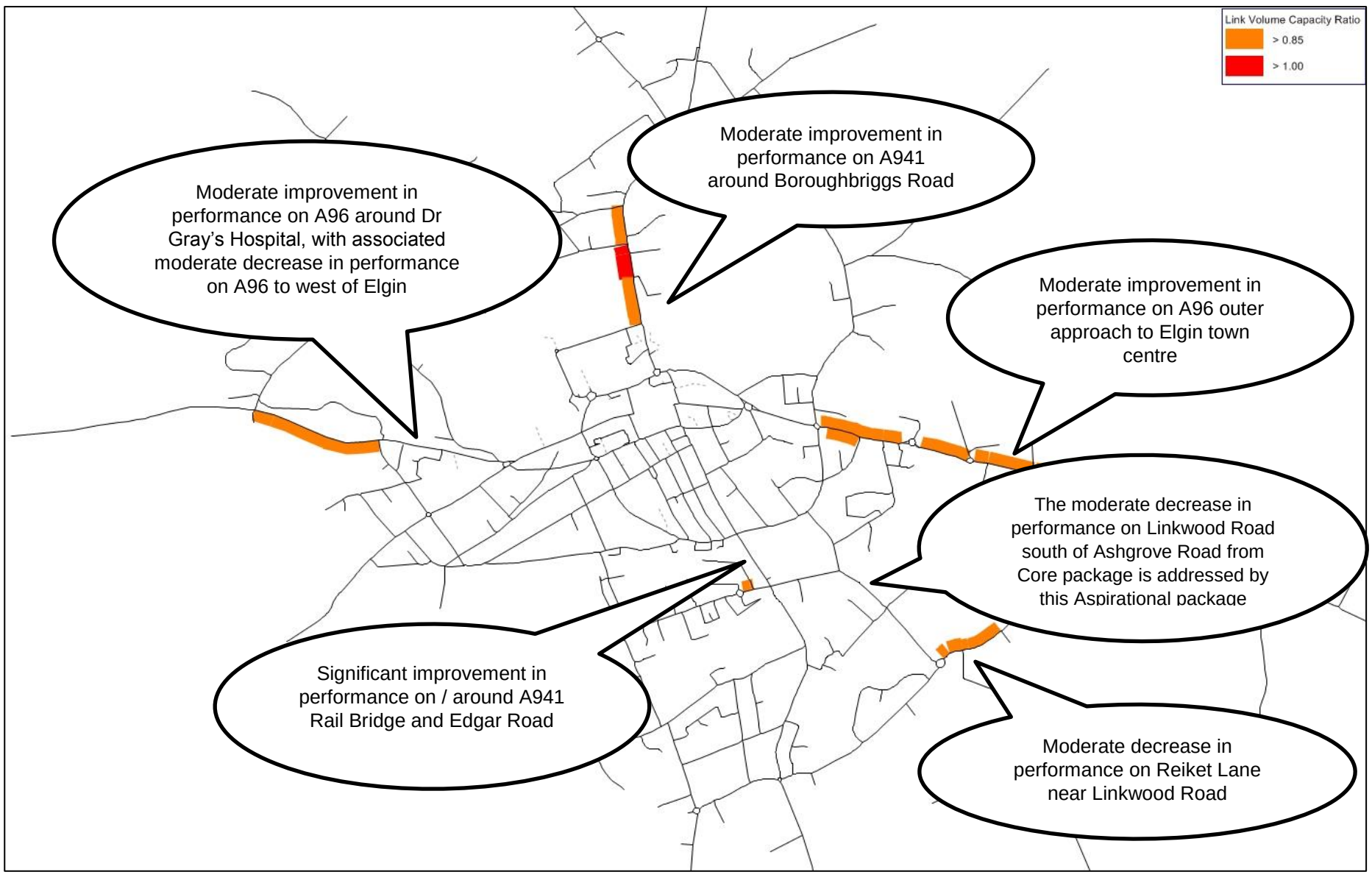

Figure C 16 2022 Medium Term Aspirational Package, PM Peak (Link Based Volume over Capacity)

Table C 2 - 2022 Medium Term Packages, Modelled Journey Times

Link / Route	Do Nothing		Core Package		Aspirational Package	
	AM	PM	AM	PM	AM	PM
A96 (EB)	2 mins 49 secs	2 mins 13secs	2 mins 43 secs	2 mins 13secs	2 mins 32 secs	2 mins 13secs
A96 WB	34 secs	54 secs	31 secs	55 secs	37 secs	54 secs
New Elgin Rd Bridge (NB)	1 min 8s	1 min 51s	1 min 9s	1 min 47s	1 min 13s	1 min 45s
New Elgin Rd Bridge (SB)	30s	53s	26s	36s	N/A	N/A
Edgar Road (EB)	1min 8s	1min 51s	1min 9s	1min 47s	1min 13s	1min 45s
Edgar Road WB	1min 7s	1min 37s	1min 6s	1min 42s	1min 6s	1min 30s

Link / Route	Change Core v Do Nothing		Change Aspirational v Do Nothing	
	AM	PM	AM	PM
A96 (EB)	-6 secs	0 secs	-17 secs	0 secs
A96 WB	-3 secs	+1 sec	+3 secs	0 secs
New Elgin Rd Bridge (NB)	+1 sec	-4 secs	+5 secs	-6 secs
New Elgin Rd Bridge (SB)	-4 secs	-17 secs	N/A	N/A
Edgar Road (EB)	+1 sec	-4 secs	+5 secs	-6 secs
Edgar Road WB	-1 sec	+5 secs	-1 secs	-7 secs
Total Change Across Routes	**-12 secs**	**-19 secs**	**-5 secs**	**-19 secs**

Figure C 17 2030 Do-Nothing (without A96 Bypass), AM Peak (Link Based Volume over Capacity)

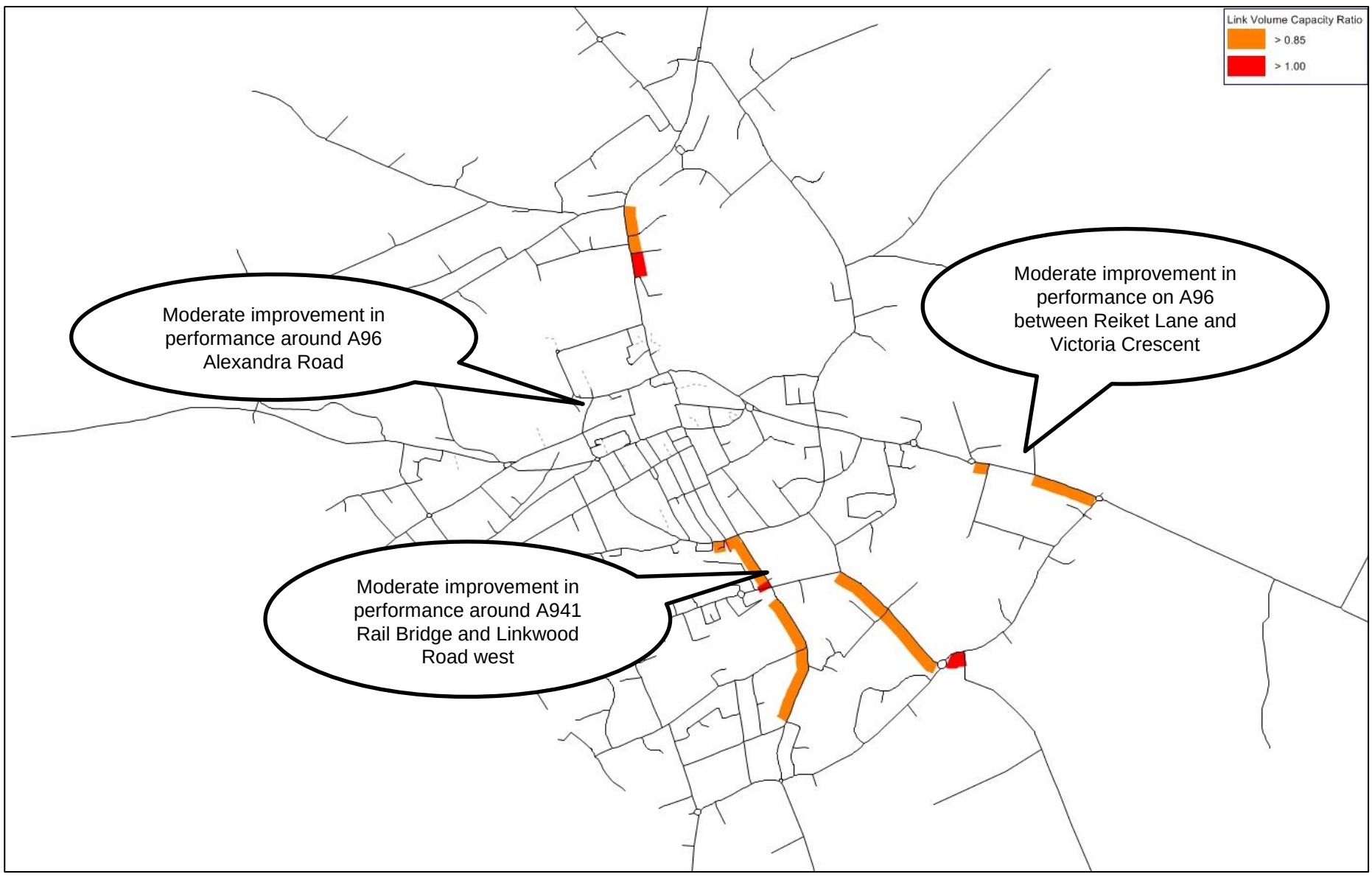

Figure C 18 2030 Long Term Core Package (without A96 Bypass), AM Peak (Link Based Volume over Capacity)

Figure C 19 2030 Do-Nothing (without A96 Bypass), AM Peak (Link Based Volume over Capacity)

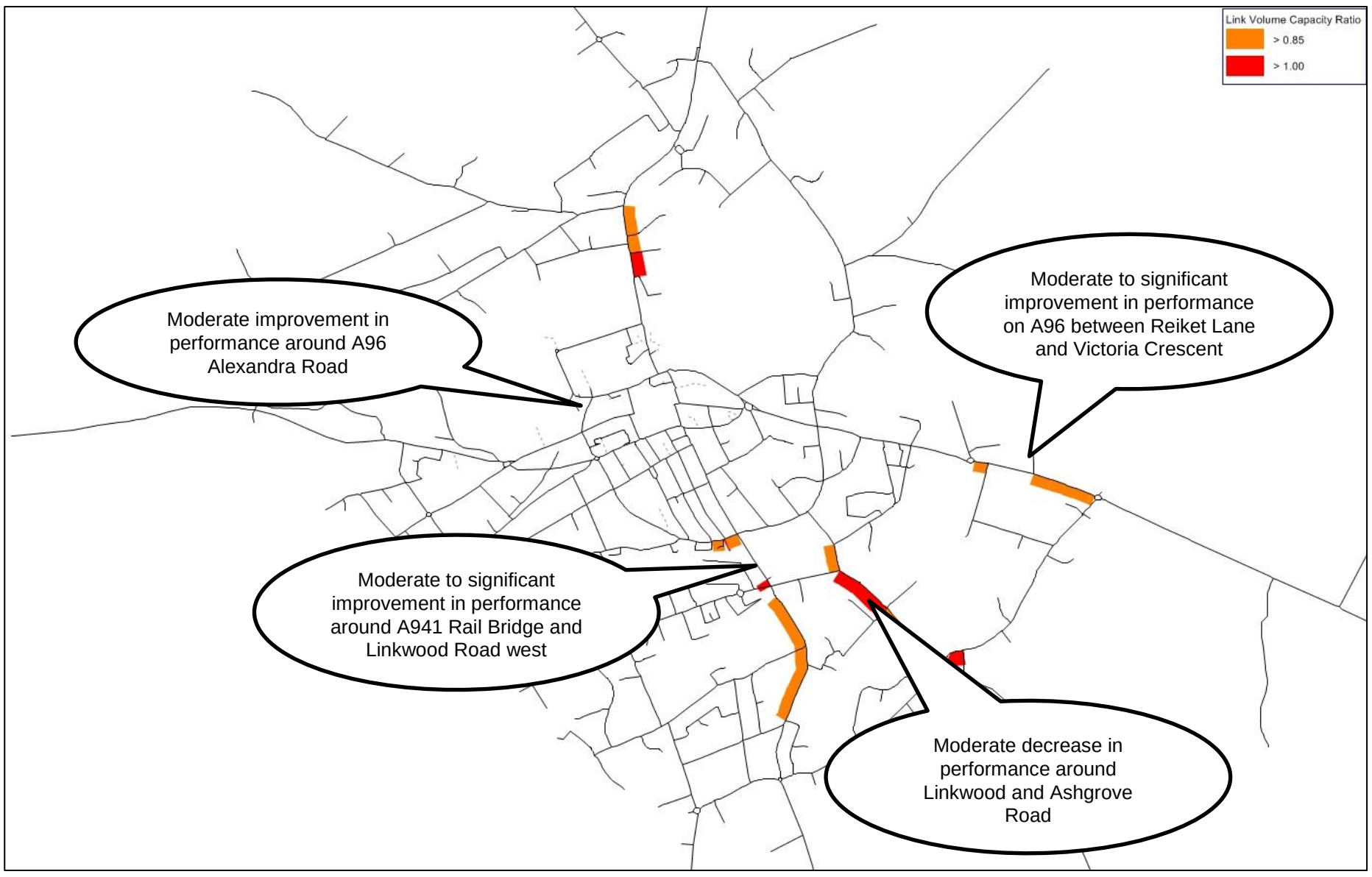

Figure C 20 2030 Long Term Aspirational Package (without A96 Bypass), AM Peak (Link Based Volume over Capacity)

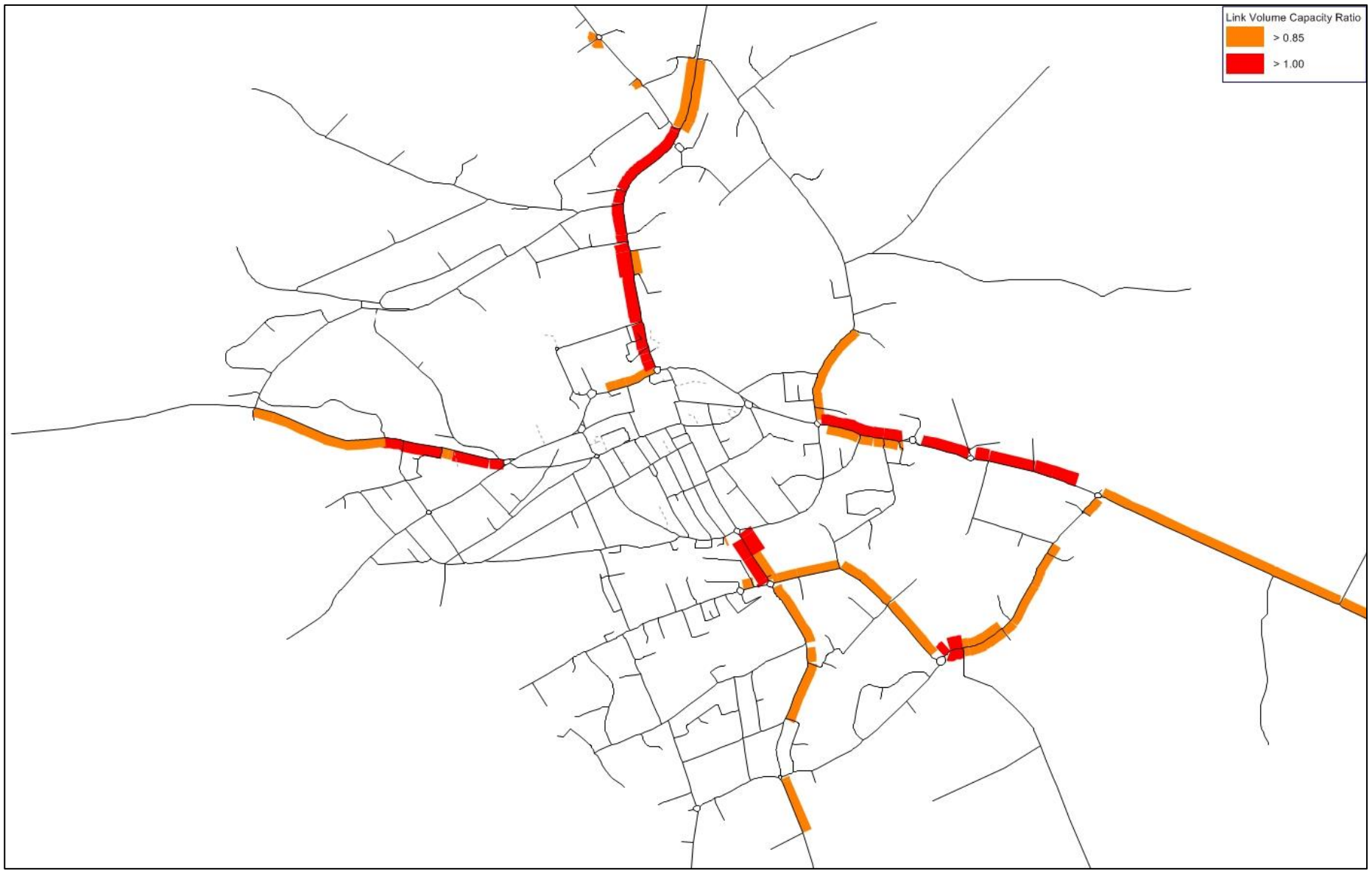

Figure C 21 2030 Do-Nothing (without A96 Bypass), PM Peak (Link Based Volume over Capacity)

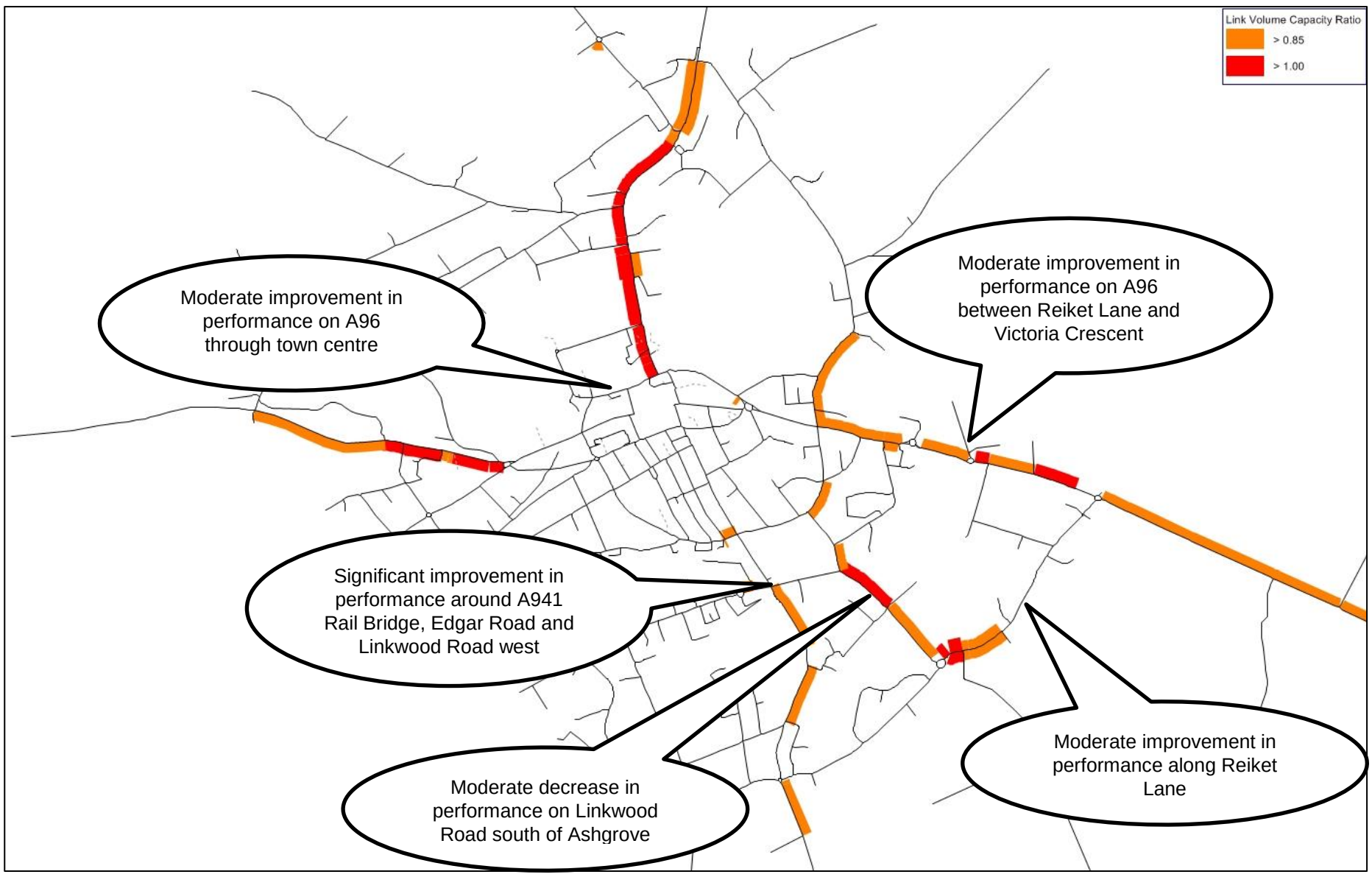

Figure C 22 2030 Long Term Core Package (without A96 Bypass), PM Peak (Link Based Volume over Capacity)

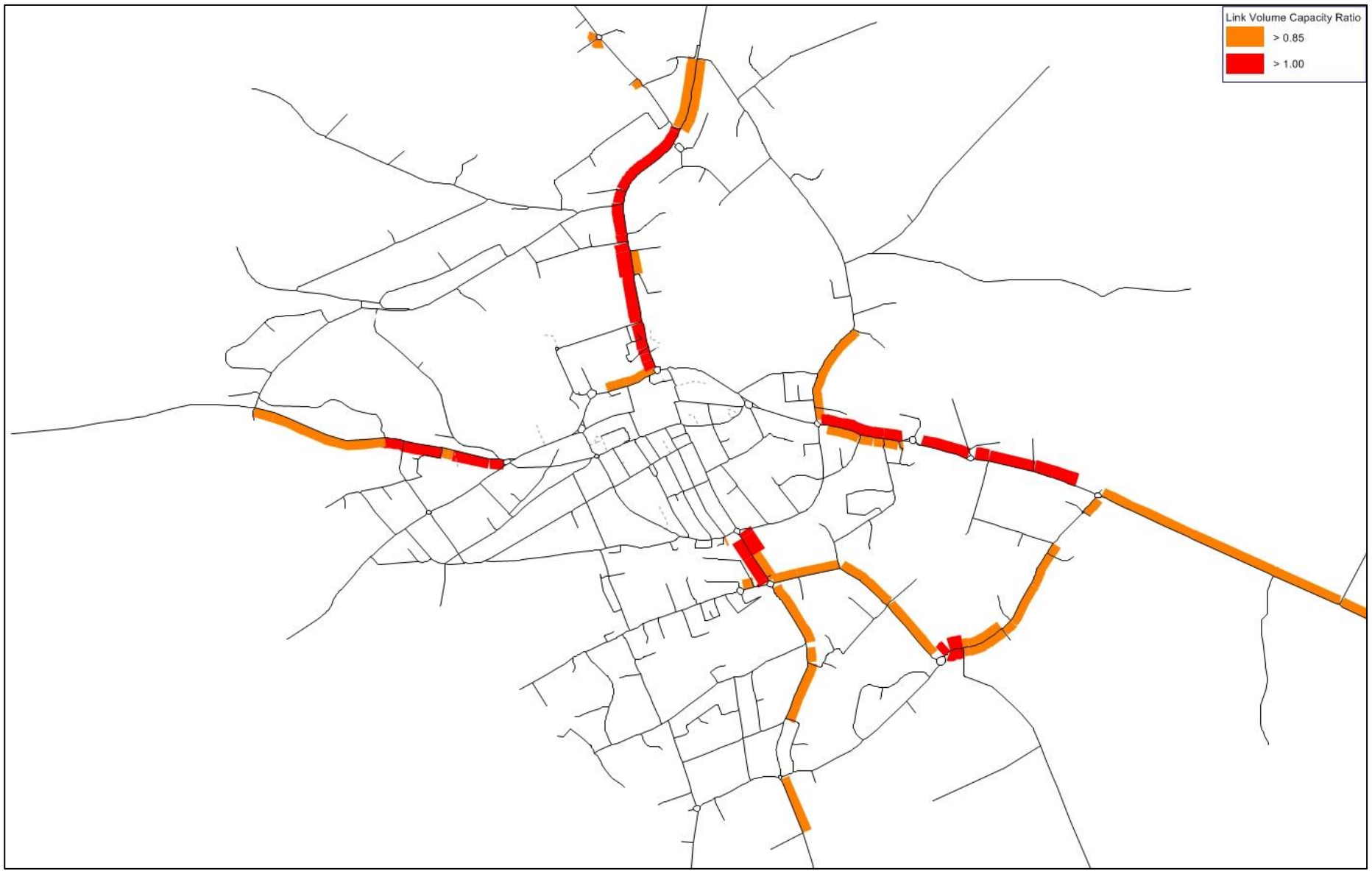

Figure C 23 2030 Do-Nothing (without A96 Bypass), PM Peak (Link Based Volume over Capacity)

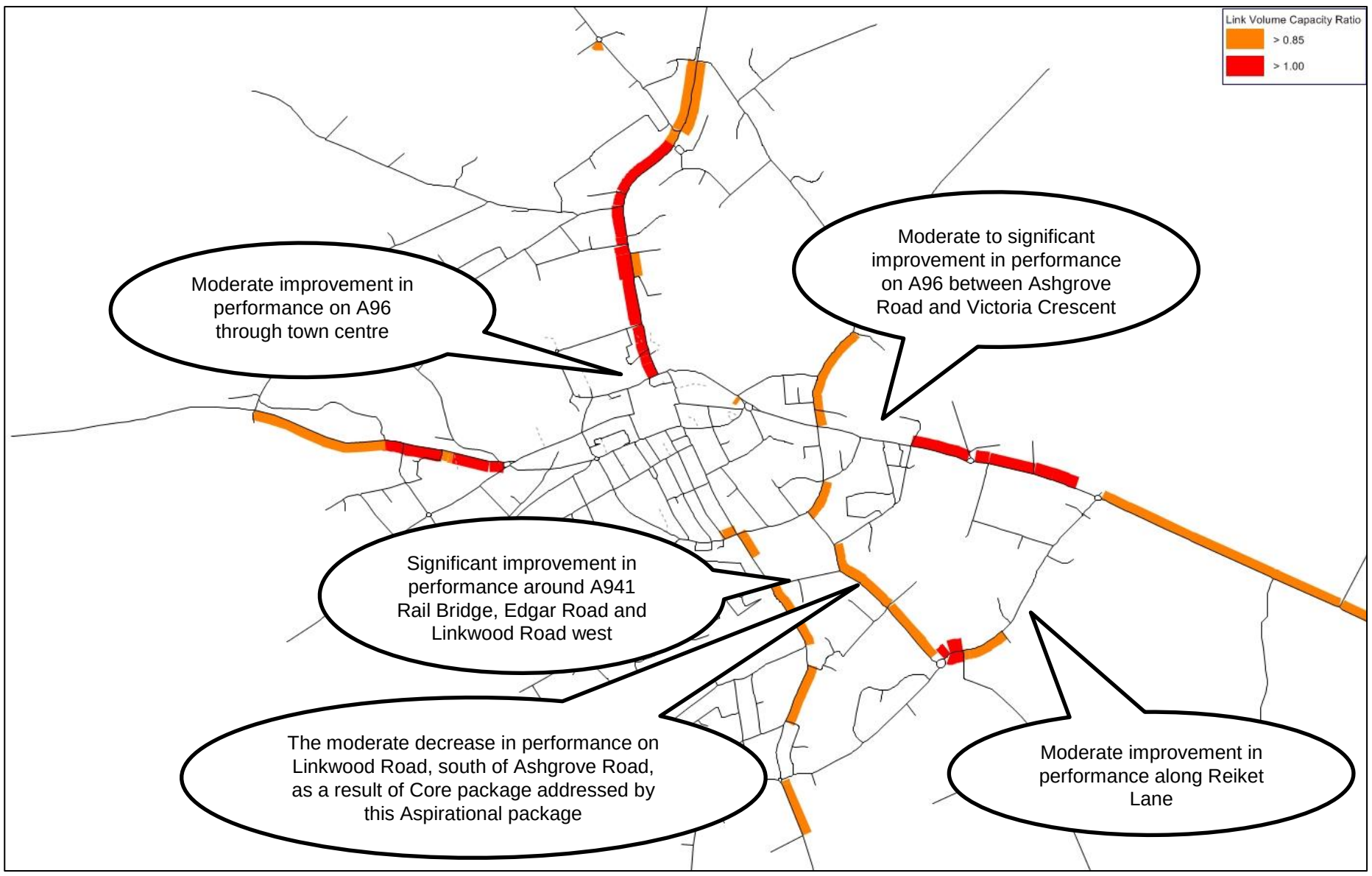

Figure C 24 2030 Long Term Aspirational Package (without A96 Bypass), PM Peak (Link Based Volume over Capacity)

Figure C 25 2030 Do-Nothing (with A96 Bypass), AM Peak (Link Based Volume over Capacity)

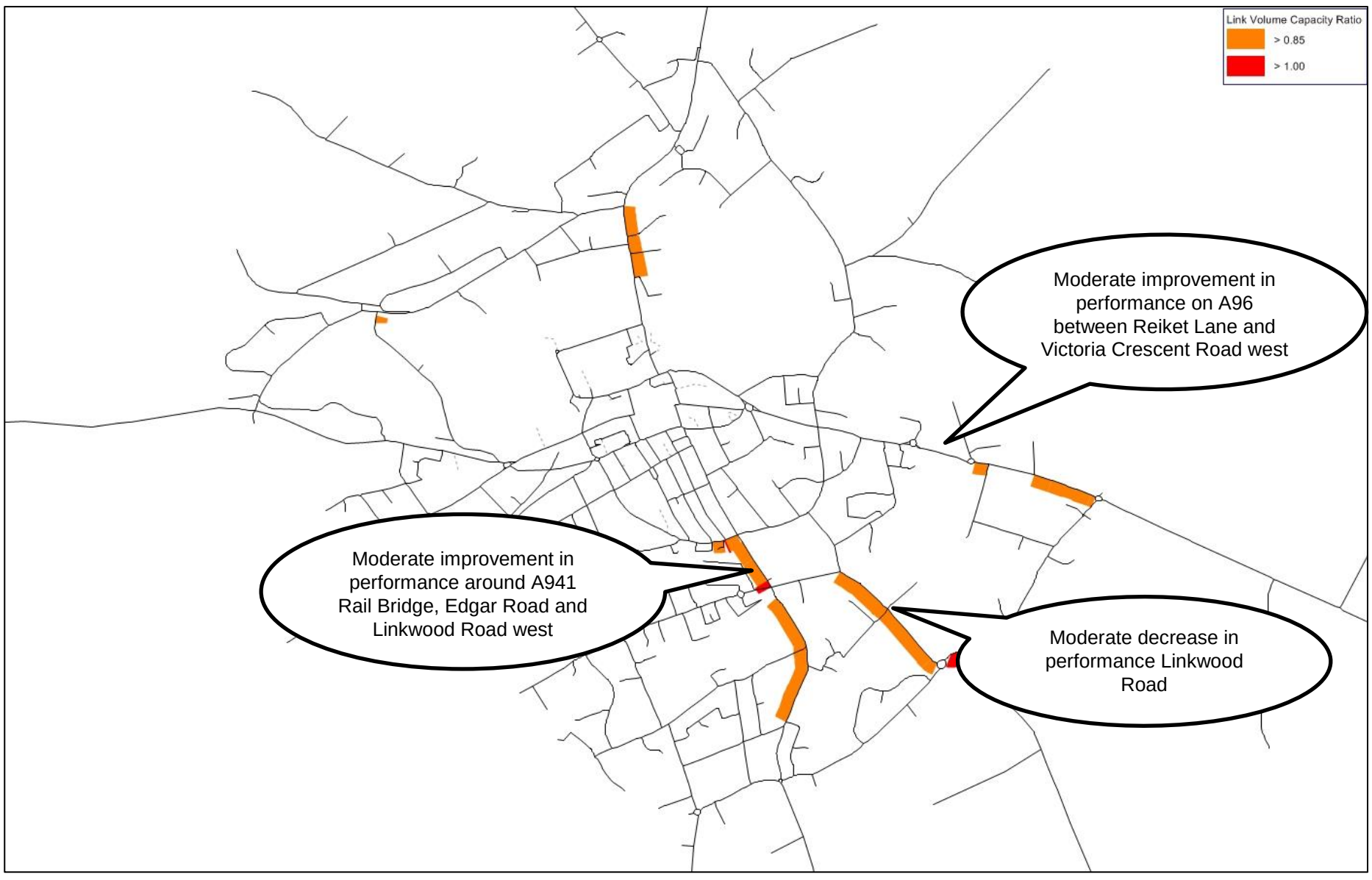

Figure C 26 2030 Long Term (with A96 Bypass) Core Package, AM Peak (Link Based Volume over Capacity)

Figure C 27 2030 Do-Nothing (with A96 Bypass), AM Peak (Link Based Volume over Capacity)

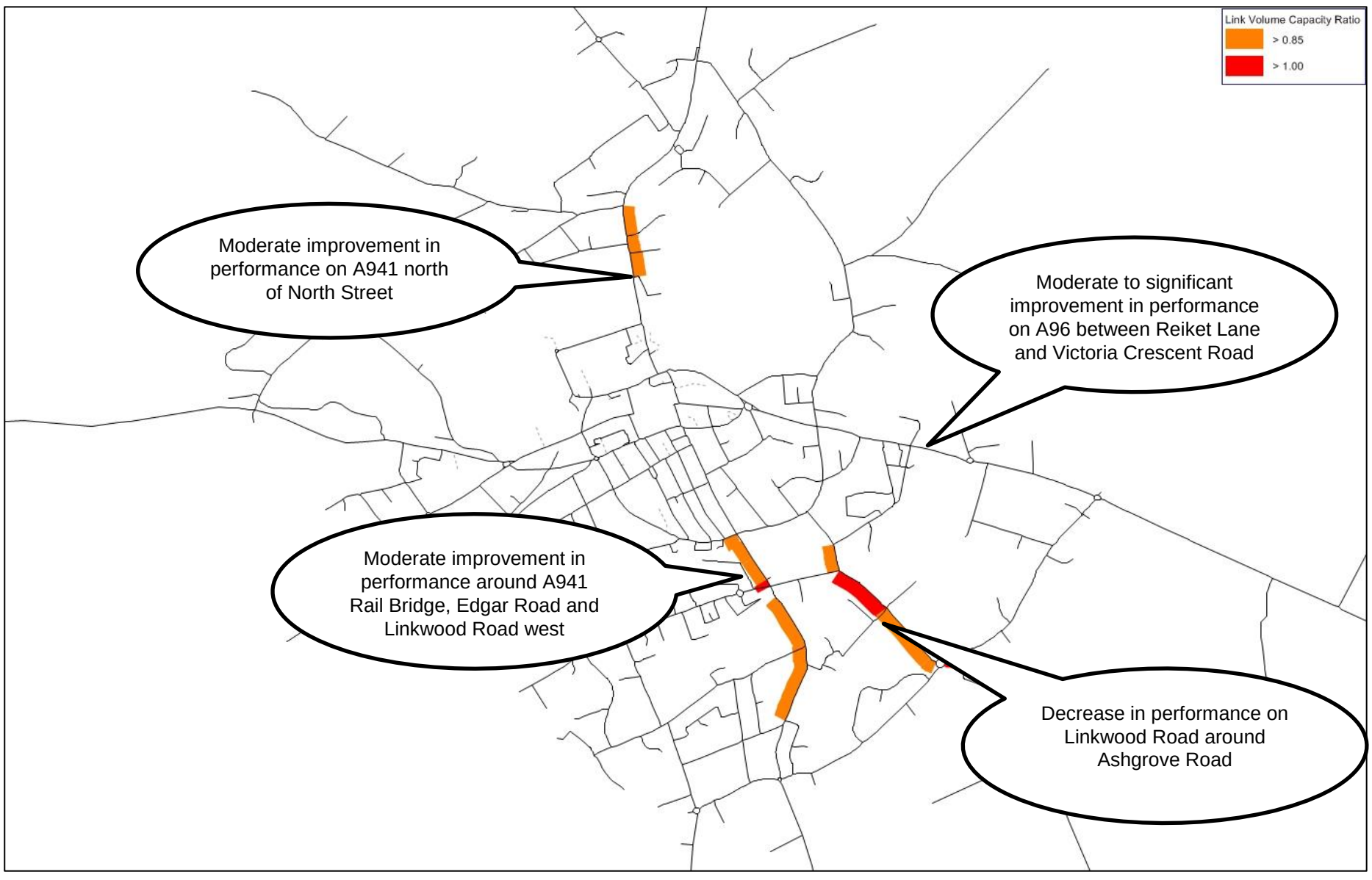

Figure C 28 2030 Long Term (With A96 Bypass) Aspirational Package, AM Peak (Link Based Volume over Capacity)

Figure C 29 2030 Do-Nothing (with A96 Bypass), PM Peak (Link Based Volume over Capacity)

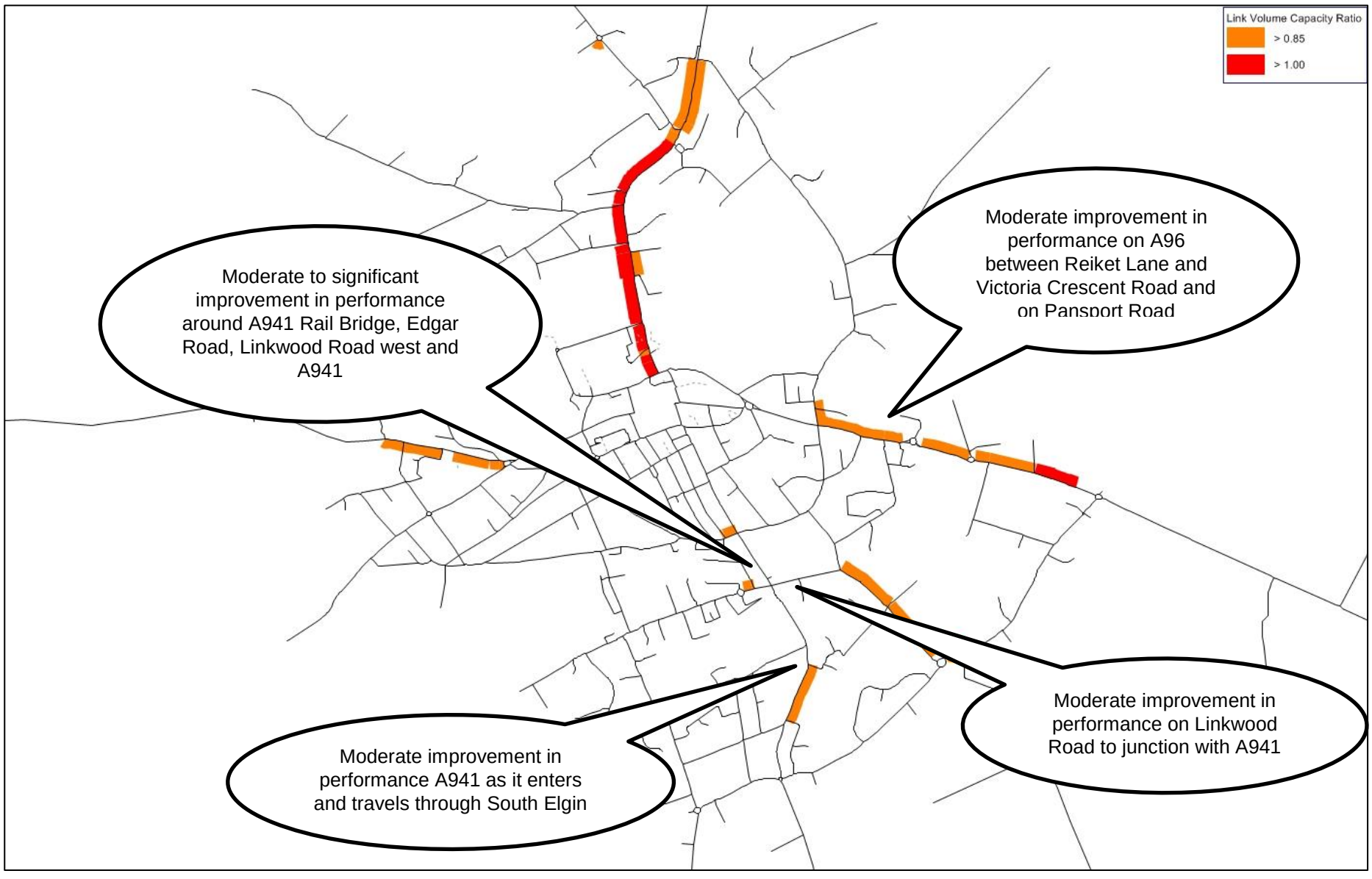

Figure C 30 2030 Long Term (With A96 Bypass) Core Package, PM Peak (Link Based Volume over Capacity)

Figure C 31 2030 Do-Nothing (with A96 Bypass), PM Peak (Link Based Volume over Capacity)

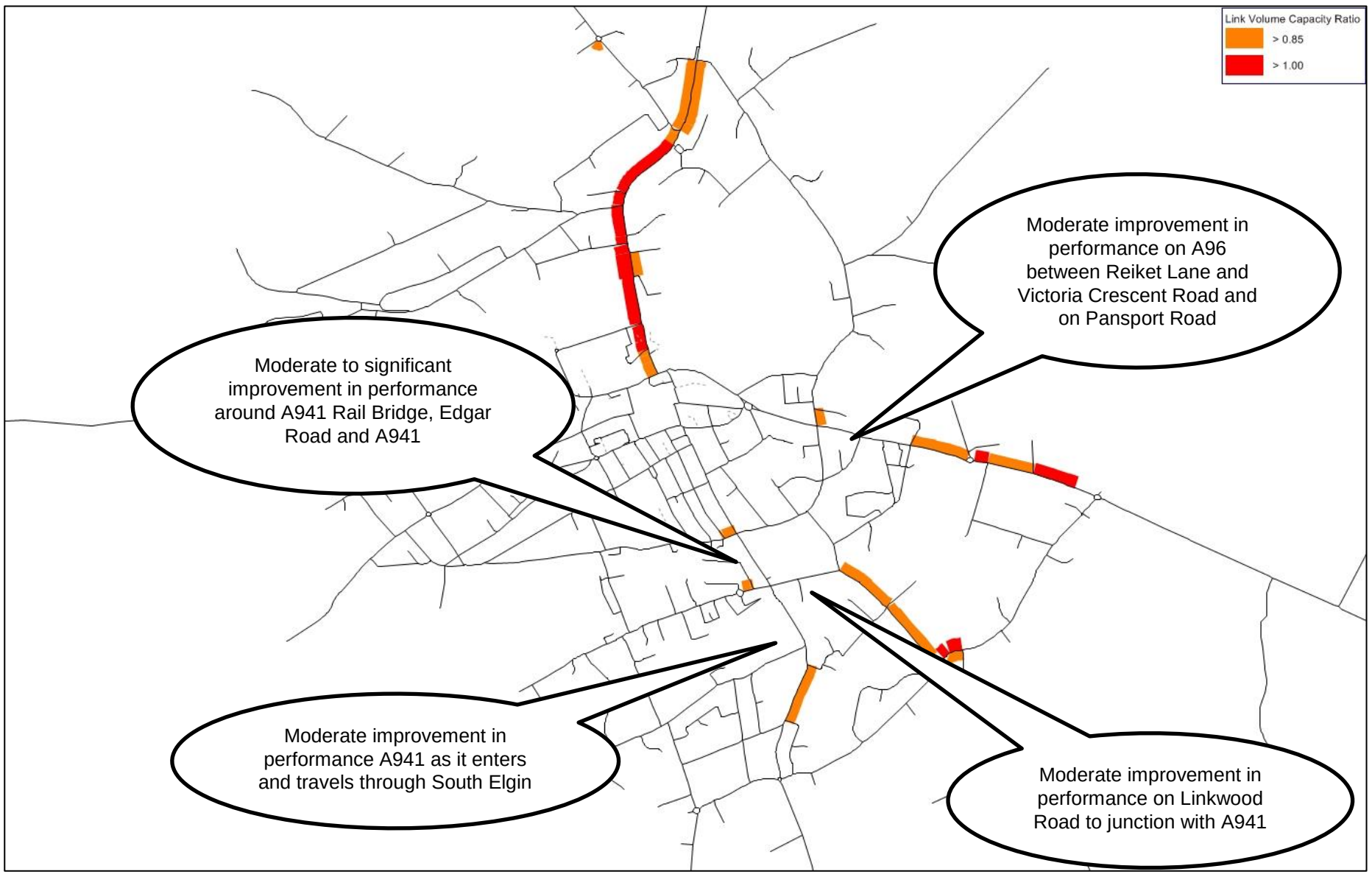

Figure C 32 2030 Long Term (With A96 Bypass) Aspirational Package, PM Peak (Link Based Volume over Capacity)

Table C 3 2030 Long Term Packages, Modelled Journey Times

Link / Route	Do Nothing		Core Package		Aspirational Package		Do Nothing (With Bypass)		Core Package (With Bypass)		Aspirational Package (With Bypass)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
A96 (EB)	3min 24s	2min 22s	3min 13s	2min 20s	3min 16s	2min 20s	2min 46s	1min 58s	2min 33s	1min 34s	2min 29s	1min 58s
A96 WB	3min 7s	2min 6s	2min 52	2min	2min 49s	1min 59s	2 min 36s	1 min 41s	2min 31s	1min 39s	2min 23s	1min 38s
New Elgin Rd Bridge (NB)	1min 27s	1min 5s	52s	41s	50s	40s	1 min 20s	59s	54s	38s	53s	41s
New Elgin Rd Bridge (SB)	37s	1min 9s	26s	43s	27s	43s	36s	1 min 3s	29s	40s	28s	41s
Edgar Road EB	1min 13s	2min 3s	1min 13s	2min	1min 15s	2min 3s	1 min 13s	1 min 58s	1min 13s	1min 57s	1min 17s	2min 2s
Edgar Road WB	1min 14s	1min 52s	1min 11s	1min 52s	1min 11s	1min 51s	1 min 13s	1 min 49s	1min 11s	1min 48s	1min 12s	1min 49s

Link / Route	Change Core v Do Nothing		Change Aspirational v Do Nothing		With Bypass - Change Core v Do Nothing		With Bypass - Change Aspirational v Do Nothing	
	AM	PM	AM	PM	AM	PM	AM	PM
A96 (EB)	-11 secs	-2 secs	-8 secs	-2 secs	-13 secs	-24 secs	-17 secs	0 secs
A96 WB	-15 secs	-6 secs	-18 secs	-7 secs	-5 secs	-2 secs	-13 secs	-3 secs
New Elgin Rd Bridge (NB)	-35 secs	-24 secs	-37 secs	-25 secs	-26 secs	-21 secs	-27 secs	-18 secs
New Elgin Rd Bridge (SB)	-11 secs	-26 secs	-10 secs	-26 secs	-7 secs	-23 secs	-8 secs	-22 secs
Edgar Road EB	0 secs	-3 secs	+2 secs	0 secs	0 secs	-1 sec	+4 secs	+4 secs
Edgar Road WB	-3 secs	0 secs	-3 secs	-1 secs	-2 secs	-1 sec	-1 sec	0 secs
Total Change Across Routes	**-1 min 15 secs**	**-1 min 1 sec**	**-1 min 14 secs**	**- 1 min 1 sec**	**-53 secs**	**- 1 min 12 secs**	**- 1 min 2 secs**	**-39 secs**