JACOBS™ Consultancy

Elgin Traffic Review

FINAL REPORT

the moray Council

TRANSPORT SCOTLAND

November 2009

JACOBS Consultancy

DOCUMENT CONTROL SHEET BPP 04 F8

Client:	Transport Scotland		
Project:	STPR	Job No:	B0306700
Document Title:	Elgin Traffic Review		

	Originator	Checked by	Reviewed by	Approved by
ORIGINAL	NAME Nonee Mathe	NAME Graeme Dodds	NAME Graeme Dodds	NAME Graeme Dodds
DATE 24/08/2009	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
Document Status:	**Issue No. 1 - Draft for Client Review**			

Revision 1	NAME Nonee Mathe	NAME Graeme Dodds	NAME Stuart Turnbull	NAME Graeme Dodds
DATE 23/09/2009	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
Document Status:	**Issue No. 2 - Second Draft for Client Review**			

Revision 2	NAME Nonee Mathe	NAME Graeme Dodds	NAME Stuart Turnbull	NAME Graeme Dodds
DATE 25/09/09	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
Document Status:	**Issue No. 3 – Third Draft Report**			

Revision 3	NAME Nonee Mathe	NAME Graeme Dodds	NAME Stuart Turnbull	NAME Graeme Dodds
DATE 25/09/09	SIGNATURE	SIGNATURE	SIGNATURE	SIGNATURE
Document Status:	**Issue No. 4 – Final Draft Report**			

Revision 4	NAME Nonee Mathe	NAME Graeme Dodds	NAME Stuart Turnbull	NAME Graeme Dodds
DATE 16/11/09	SIGNATURE	SIGNATURE	SIGNATURE Stuart Turnbull	SIGNATURE
Document Status:	**Issue No. 5 – Final Report**			

CONTENTS

EXECUTIVE SUMMARY

This report summarises the outcomes of the joint technical working group involving officials from Transport Scotland and The Moray Council.

This process has examined the issues, problems and constraints that affect the operation of the transport network in Elgin. Consideration of these has allowed the development of joint objectives. It is important to note that this process has looked at the transportation network as a whole, rather than considering only trunk or only local network issues.

Potential solutions or packages of improvements have been identified ranging from simple, short term improvements to more significant, longer term options. These have been appraised at a strategic level to consider how they contribute to meeting the goals of the joint objectives. Interventions or packages that do not significantly contribute to the goals of the study have not been taken further through the appraisal process.

The performance of these consolidated packages has been set out relative to both the objectives and the STAG criteria. These consolidated packages are generally geographically specified and contain a mixture of elements from short term/simple elements to longer term/complex elements. The report sets out the funding routes and contexts within which these interventions would sit.

Developed from this is then a classification of the individual elements of the consolidated packages to allow an understanding of them in terms of:

- those that can be delivered within the shorter term through ongoing network management operations by both Transport Scotland and The Moray Council;
- those that could be delivered following and co-ordinated with these shorter term measures as funding becomes available; and
- those that need further study to understand the nature, scale and scope of the scheme and require funding to be made available.

.

1 INTRODUCTION

1.1 Background Information

Elgin is situated on the A96 Aberdeen to Inverness Transport Corridor. The town is bisected by the A96 trunk road that is aligned east – west and the A941 that is aligned north – south. The A96 and the A941 are both two lane single carriageway roads with varying speed limits through Elgin. The A96 exhibits localised congestion at peak times, through towns such as Elgin and due to convoying behind slower moving heavy goods vehicles where there is limited opportunity for overtaking. Due to forecast growth along the Aberdeen to Inverness Transport Corridor and planned development within the town, congestion is expected to continue and possibly worsen in Elgin.

Congestion through Elgin has been a persistent problem for several years. Local residents often use alternative routes in peak times to avoid congestion along the A96 and A941 in the town centre.

There are numerous junctions along the A96 and the A941 in the urban area. The majority of these are priority junctions and roundabouts. A diagram showing the junctions along the route is contained in Appendix A. It is observed that the frequency and capacity of these junctions is linked to congestion on the A96 in Elgin and queuing on the local road network.

1.2 The Aim

The aim of the Elgin Traffic Review is to complement the Strategic Transport Projects Review (STPR) Intervention 22 and the Elgin Traffic Management programme by developing a joint framework for improvements to traffic flow on the A96 in Elgin for the benefit of both local and strategic transport.

1.3 Methodology

An initial desk study of the existing traffic data was undertaken for the A96 and other key local transport routes within Elgin to establish a baseline for the study. A series of workshops involving The Moray Council and Transport Scotland were then undertaken to:

- agree the baseline for the study;
- identify constraints and perceived problems with the transport system in Elgin and their probable causes;
- develop a set of transport objectives for the Elgin Traffic Review; and
- generate a set of deliverable improvement schemes to meet the objectives and the aim of the study.

Through this process, it became apparent that the nature of the road network in Elgin and its interaction with the A96 Transport Corridor requires a holistic approach to transportation to accommodate the needs of both the local and national transportation networks. Improvement to traffic management and addressing congestion in Elgin would lead to an overall improvement to the operation of the A96 Aberdeen to Inverness Transport Corridor in this area.

1.4 Report Format

This report outlines the key findings of the workshops and is structured as follows:

- Chapter 2 – Elgin Traffic Review Baseline;
- Chapter 3 – Problems, Causes and Constraints;
- Chapter 4 – Transport Policy and Objectives;
- Chapter 5 – Option Generation, Sifting and Appraisal; and
- Chapter 6 – Appraisal Conclusions.

2 ELGIN TRAFFIC REVIEW BASELINE

2.1 Introduction

The purpose of this chapter is to examine traffic data for the A96 and other key local transport routes in Elgin to establish an agreed baseline for the Elgin Traffic Review study.

2.2 Background Traffic Data

2.2.1 Traffic Data

A review of Moray Key Transport Trend Data on the A96 at Elgin covering March 2004, 2005 and 2006 (The Moray Council, 2007) and corresponding Scottish Government ATC data (ATC02040) for March 2007 and 2008, indicates that traffic volumes have remained fairly steady over the past 5 years as shown in Table 1 below. This stable trend is further supported by comparing the 7 day average traffic flow on the A96 in Elgin in 2008 of 17,700 vpd, evaluated from Scottish Government ATC data, with the 7 day average traffic flow of 18,000 vpd[1] measured between August 2001 and June 2002.

The Annual Average Daily Traffic (AADT) flow along the A96 in Elgin town centre was evaluated to be 17,600 vpd in 2007 and 17,700 vpd in 2008 identified from Scottish Government ATC data for site ATC02040 Alexandra Road.

Table 1 – Comparison of two way 5 day average traffic count data A96 Elgin

Count period	March 2004	March 2005	March 2006	March 2007	March 2008
5 Day Average vehicles per day (vpd)	18,745	18,932	18,198	18,845	19,172

2.2.2 Elgin Bypass Studies

The Moray Council (2001) Local Transport Strategy identifies dualling of the A96, upgrade of the A941 to trunk road status and an Elgin Bypass as measures within their Action List for improving transportation in the area. The Moray Development Plan also provides support for strategic improvements to the road network. Numerous transportation studies have been carried out to understand the potential benefits of a bypass around Elgin. Some of the key findings of these studies are summarised below.

- Babtie Group, 2003, The Moray Council Traffic in Elgin Traffic Management Options – This report concluded that "the *bypass would be unlikely to reduce flows on the route through town by more than 300 to 500 vehicles in the peak periods*"[2] and have "*limited time savings, measured in seconds, over the existing A96 route through the town*"[3].

[1] Babtie Group, 2003, The Moray Council Traffic in Elgin Traffic Management Options, p. 4
[2] Babtie Group, 2003, The Moray Council Traffic in Elgin Traffic Management Options, p. 16.
[3] Babtie Group, 2003, The Moray Council Traffic in Elgin Traffic Management Options, p. 14.

- Scott Wilson, 2007, Aberdeen to Inverness Transport Corridor Study – STAG Pre-Appraisal Final Report – The report raised a number of environmental concerns as the bypass would cross a Site of Special Scientific Interest (SSSI) and several watercourses. While the bypass did meet the objectives of the study, the viability of the bypass option was considered to be limited.

- Halcrow Group Limited, 2007, The Moray Council Elgin STAG Part 2 Report – The Elgin STAG Part 2 Summary Report concluded that major bypass options for Elgin result in a negative net present value. The most viable alternative developed in this study was based largely on improvements to key local roads and junctions.

- Scott Wilson, 2008, HISTRANS & Highlands & Islands Enterprise (HIE) A96 Bypasses Study Economic Appraisal Report – The study suggested that a bypass would result in significant time savings and economic benefits for the area. The economic benefits identified were based on land release for development and the resulting increase in employment due to the Elgin Bypass. In addition, time savings and reductions in congestion in Elgin were determined using diversion curve algorithms that suggest 12,200 vpd, i.e. 60% of the 2007 AADT for Elgin Centre, would be diverted on to the bypass.

  This flow equates to 60% – 70% of the current daily traffic in Elgin town centre and over 80% of the current A96 daily traffic on approach to Elgin using the bypass. Therefore, in order to validate the findings of this study evidence is required that the congestion in Elgin is attributable primarily to A96 through-traffic flow, which would use the bypass in preference to the existing road network.

- The Strategic Transport Projects Review (STPR), 2008, – The study, which was based on the Transport Model for Scotland amongst other data sources, estimated a transfer of between 10% and 35% of the AADT to the Elgin bypass. Therefore, the viability of a bypass scheme and its potential to alleviate congestion in central Elgin may be limited.

2.3 Baseline Traffic Data

2.3.1 2008 Two Way 5-day Average Traffic Flow

Along the A96 within Elgin, Transport Scotland has several permanent ATC sites. The Moray Council have traffic data for the A941 and other key roads within Elgin.
Analysis of the raw permanent site data indicates that along the A96 the eastbound / westbound traffic split is approximately 50/50 (localised deviations in the ratio do not exceed 2% in either direction).

The A96 traffic volumes outside of Elgin are below the 22,000 vpd Congestion Reference Flow (CRF) for a single carriageway rural road in accordance with TA 46/97 – 'Traffic Flow Ranges for Use in The Assessment of New Rural Roads' Tables 2.1 and D/2 respectively.

The traffic flows on the A96 East Road (24,128 vpd) are approximately 1.4 times higher than the traffic on approach to Elgin (17,471 vpd east approach and 16,121 vpd on the west approach, refer to Appendix B). This suggests that congestion within Elgin is mainly a result of increased activity on the A96 through Elgin as a result of it providing not only a route for through traffic but also a major route for internal trips within the town.

A diagram showing the traffic flow variations within Elgin is contained within Appendix B. It is evident from the location of the heavily trafficked areas (>20,000 vpd) that congestion is likely to be affected significantly by junction capacity at peak times.

2.3.2 2008 Hourly Traffic Flow

The 2008 hourly flow data for the two ATC sites on the sections of the A96 east and west of the A941/A96 junction yielded maximum peak flows in the busiest direction of 944 vehicles per hour (vph) and 1,078 vph respectively. All the recorded hourly flows along A96 Elgin ATC sites in 2008 were below the capacity of a standard 7.3 metre two lane urban all purpose road as given in Table 2 of TA 79/99 – 'Determination of Urban Road Capacity' (1,300 vph for UAP3 road type). This suggests that the most significant factors affecting congestion are the frequency of junctions, accesses, bus stops and pedestrian crossings, rather than the A96 carriageway geometry.

2.3.3 Road Side Interview and Vehicle Registration Survey

In 2006, The Moray Council conducted a series of road side interviews to quantify potential through-traffic along the A96 in Elgin. This concluded that 24% – 30% of traffic entering Elgin on the A96 travelled straight through Elgin and left via the A96.

In 2007, The Moray Council commissioned a survey of traffic movements in Elgin using vehicle registration recognition cameras to track vehicle movements through the town. The outcome of this survey was that during weekdays approximately 17% of traffic entering Elgin via the A96 was through-traffic. Peaks in through-traffic during the day did not exceed 25%. The same survey, considering both the A941 and A96, saw a maximum 31% of the traffic entering and leaving Elgin via one of the A roads.

The two studies indicate that the proportion of through-traffic lies predominantly in the range of 15% – 30% on the A96 with a smaller proportion of through-traffic on the A941. The traffic within Elgin is a combination of local and strategic traffic. Approximately 70% of traffic surveyed on the A96 and a similar proportion on the A941 has its final destination in Elgin. This aligns with Elgin's position as a transport and economic node in Moray.

The road side interview and vehicle registration survey data aligns with the STPR study of the Elgin Bypass. A schematic diagram showing the through-traffic proportions is contained in Appendix C.

2.3.4 Road Side Interview and Census Travel to Work (TTW)

An interrogation of the road side interview (RSI) and census travel to work data collected for the Transport Model for Scotland was carried out by MVA Consultancy in June 2009.

MVA Consultancy (2009) concluded that 20% of traffic on the A96, depending on the time of day, was through-traffic. This aligns with the 15% to 30% range evaluated from The Moray Council data as discussed previously. The analysis also stated that "*heavy goods vehicles constitute around 10% of the total traffic using the A96 to the east and west of Elgin*"[4].

[4] MVA Consultancy, 2009, LATIS: STPR Support, Elgin Traffic Pattern Data, p. 14.

The census TTW daily movements, considering car drivers and taxis collectively, were shown to be proportioned as shown in Figure 1 below:

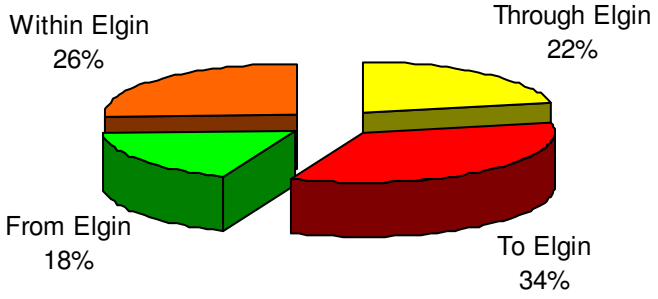


Figure 1: TTW Movement Proportions[5]

A review of the TTW car and taxi movements presented in the MVA study indicates that in the urban area, the highest traffic movements occur within, to and from the sector of Elgin that covers the area south of the railway line and either side of the A96 East Road. A significant proportion of commuter travel is observed from all sectors investigated in the study to central Elgin, from the railway line to just north of the A96 South College Street and Alexandra Road. These factors contribute to the congestion and high traffic flows at the A941 railway overbridge.

The primary work destinations outside of Elgin identified in the 2001 census were Burghead and Forres; likely to be significantly influenced by the RAF base at Kinloss. Commuter movements to Elgin originate predominantly from Keith and Fochabers with notable contributions from Burghead, Forres and Lossiemouth.

2.3.5 Junction Turning Counts

On 3rd June 2008 turning movement counts were carried out at several key junctions within Elgin. This data was supplied by The Moray Council as a reference for weekday turning movements. Turning count data on Saturdays was also collected at various locations in June 2008. Turning counts at some of the junctions considered in this study are contained in Appendix D.

By comparing the weekday hourly flows at the Elgin approach junctions on the A96 (Morriston Road to the West and Reiket Lane to the East), tidal flow behaviour is observed as follows:

- Traffic flow into Elgin is greater than flow out of Elgin during the weekday AM peak. In the weekday PM peak this reverses so that outbound traffic is greater than inbound;
- The inbound flow from the east is greater than the inbound flow from the west in the AM peak period; and
- Tidality is more significant from the east than from the west.

Tidal behaviour is also observed on the A941, particularly at the Lesmurdie Road junction to the North and Thornhill Road roundabout to the South, where inbound traffic flows exceed outbound in the AM period, with the reverse occurring in the PM peak period.

[5] MVA Consultancy, 2009, LATIS: STPR Support, Elgin Traffic Pattern Data, Table 3.1.

The proportion of traffic travelling through junctions between the major road arms accounts for the largest traffic movement at most of the junctions. This indicates that movements between the major and minor roads are inhibited by high through flows and limited gap availability on the major road.

Saturday hourly traffic flow is comparable to the weekday peak flows. At the Tesco roundabout movements to and from Tesco are greatest on Saturday. Similarly at the A941/Edgar Road roundabout, flows to Edgar Road (the access road to the retail area south of the railway line) are greatest on Saturday. This highlights the influence of trip attractions to traffic flow and travel routes.

At Dr Gray's roundabout, a significant proportion of traffic travels from the A96 West Road arm to South Street throughout the day. This is interpreted to be a preferred route for accessing the central retail area and connecting to the A941 to the south.

2.4 Key Traffic Issues in Elgin

2.4.1 Overlying Causes of Congestion

The high traffic volumes in Elgin are due to a combination of local and strategic traffic. The proportion of traffic on the A96 and A941 travelling to, from or within Elgin is significantly greater than through-traffic. This indicates that Elgin is an origin or destination for a large proportion of traffic in the area.

The junction density along the A96 trunk road and the A941 is high in Elgin. A knock-on effect develops once one junction along the route reaches capacity. Difficulty in accessing the A96 from minor roads via the numerous priority junctions is anticipated. The high traffic flows are likely to make gap acceptance decisions more onerous, particularly for right-turns on and off the trunk road and the A941. Junction capacity and the effects of queuing are therefore critical to Elgin's congestion problems.

Sections of the A96 in Elgin town centre with flow ranges between 15,000 vpd and 18,000 vpd are observed to have a high traffic contribution from local collector and distributor roads feeding into the trunk road.

2.4.2 Specific Problem Areas

Based on the traffic distribution diagram in Appendix B, three critical areas of notably high traffic flow (above 20,000 vpd) have been identified.

- **A96 Alexandra Road Bus Station** (Transport Scotland Site ATC00021 – 24,040 vpd):
  This section of the A96 is critical as not only does it cater for local traffic movements, it also services Elgin Bus Station, Tesco, A96 East – West and A941 North – South traffic.

- **A96 East Road** (Transport Scotland Site ATC00022 – 24,128 vpd):
  This section of the A96 serves a significant volume of local traffic. Several businesses are situated in this area and several local collector/distributor roads feed into this section of the A96. The A96 East – West through-traffic and traffic travelling through Elgin between the A941 and the A96, contribute to this flow. In addition, this sector of Elgin is recognised as being a major destination for travel to work.

- **A941 New Elgin Road** (The Moray Council Site – 21,746 vpd):
  This section of the A941 accommodates North – South through-traffic, services Elgin railway station and a large retail area to the west, south of the railway line. This sector of Elgin is a major origin and destination for travel to work in Elgin. The A941 is carried over the railway line by a railway overbridge capable of accommodating three traffic lanes. Local traffic is confined to using this section of the road when crossing the railway line or accessing the retail area.

2.4.3 Constraints

The following constraints have been identified during the baseline traffic data review.

- The existing built environment – Including the railway line, the A941 railway overbridge, bridges over the River Lossie on the A96 West Road and at the A941 Bishopmill Bridge, the A96 Alexandra Road footbridge, at-grade signal crossings of the A96 Alexandra Road and a pedestrian underpass beneath Alexandra Road near the bus station;

- Future traffic growth – A significant proportion of the junctions on the trunk and local roads are perceived to breach capacity regularly. Anticipated future growth in traffic will need to be accommodated in the improvements proposed; and

- Tidal flow behaviour of traffic on the trunk road and the A941 – Capacity improvements to the road network should take into account both the AM and PM peak demand scenarios.

2.4.4 Opportunities

Outside of the A941, the local roads have varying traffic volumes that do not exceed 13,000 vpd (5 day average). Depending on the geometric characteristics and the proportion of frontage access and roadside parking, these roads may offer additional capacity to relieve the trunk road flows in key areas of local movements. Such roads would have to be appropriate routes for traffic in terms of the road hierarchy.

The use of public transport and other high occupancy vehicles in preference to private cars, as well as active travel initiatives, have the potential to reduce the traffic flows on the road network.

The heavy goods vehicle volumes could be reduced by promoting rail freight for businesses that currently use the A96 Aberdeen to Inverness Corridor route.

2.4.5 The Elgin Bypass

The baseline traffic data identifies numerous traffic issues related to the A96 trunk road in Elgin and the impact on the local road network. With the A96 through-traffic being approximately 15% to 30% of the A96 traffic, a bypass would bring limited reduction in traffic through Elgin.

From the perspective of trip attractions, the high traffic volumes observed can be linked to Elgin's status as the primary centre in Moray. As demonstrated by Figure 1 and the Road Side Interview data in Appendix C, the majority of the traffic on the A96 in Elgin has its origin and / or destination within the town and would not benefit from a bypass avoiding the town.

The congestion observed is due to the combination of strategic and local traffic movement. It is the dual role that the A96 performs in Elgin that causes the conflict

between strategic and local traffic. Journeys within the urban extents are perceived to have the greatest impact on congestion. As the main route through the centre of Elgin, most traffic uses or crosses the A96 at some point in their journey.

The tidal behaviour on the A96 can be related to commuter movements. Inbound traffic is greater in the morning when travelling to work and outbound is greater after office hours when leaving Elgin to travel home. The main areas travelled to / from are the south, east and central areas of the town, suggesting that a southern alignment would more effectively serve the current high demand movements than a northern route, but further investigation would be required to confirm this. The junctions from a southern bypass to South Elgin would require appropriate capacity so as not to inhibit the main traffic flow. A southern bypass would require crossings at the railway line, the A941 and possibly some of the local watercourses. This would create significant environmental considerations and add to the scheme cost.

The baseline data indicates that a bypass would be of limited benefit at the current traffic levels and would therefore not be an appropriate solution within the STPR timescales. Local infrastructure, network management and directional information measures would be appropriate to improve traffic flow in the short to medium term. The impact of such schemes would need to be assessed following implementation to reflect changes to traffic levels and travel patterns and, based on the outcome, allow the bypass to be reconsidered for long term benefits.

3 PROBLEMS, CAUSES AND CONSTRAINTS

3.1 Introduction

The purpose of this chapter is to identify the perceived problems with the transport system in Elgin and any constraints or concerns that may affect the delivery of future improvements. It describes the output of one of the workshops involving Transport Scotland, The Moray Council and Jacobs Consultancy. A location plan showing the perceived problem areas on the A96 and A941 is contained in Appendix E.

3.2 High Level Problems and Constraints

3.2.1 Tidal Flows on the A96

The workshop identified that tidal flows are experienced on the A96. It is observed that the inbound flows from both the west and east are greater than the outbound flows during the AM peak. Furthermore, inbound flows from the east are observed to be greater than inbound flows from the west.

The tidal flow is caused by the origin-destination trends identified in section 2.33 to 2.34 and as a result cannot be changed by transport based interventions alone. Therefore, improvement measures should take into account both the AM and PM peak movements.

3.2.2 Saturday Flows

Saturday traffic flows are observed to be comparable to weekday traffic peak flows, indicating significant non-employment activity. Demand for travel to and from retail areas adjacent to the A96 and at Edgar Road, adjacent to the A941, contribute to notably high Saturday traffic flows resulting in congestion on routes around these areas.

Proposed interventions are required to focus on trip attractions that directly affect the demand variations on the transport network.

3.2.3 The Railway

The location of Elgin railway station is not central, and this affects its accessibility. The frequency and pricing of rail passenger services can be prohibitive. Rail is not perceived to be a convenient alternative to private car travel. It is unclear how anticipated future development will impact on rail demand.

The railway service schedules do not align well with bus services. Train services on the Aberdeen to Inverness line run with an approximate two hour frequency to and from Elgin. Recent changes to the railway service have improved the frequency of trains to and from Elgin and further improvements are planned by Transport Scotland. The Aberdeen to Inverness bus service runs every 20 minutes. Other local bus services have varying frequencies depending on destination. Therefore, undesirable waiting times are observed in Elgin on multi-modal public transport journeys.

The railway line itself creates a physical separation between South Elgin and the rest of the urban area. In order to alleviate congestion at the existing crossing points, new bridging points would be required that would involve significant capital investment.

Selection of a location for a new railway crossing is constrained by the existing built environment and access requirements of proposed development areas.

The railway line through Elgin is a single track with a passing loop at the station. This places constraint on the achievable frequency of services.

3.2.4 Long Distance Bus Services

The Aberdeen to Inverness bus service is a relatively reliable and frequent service. It is found to provide a level of service of higher quality than the local bus services. Waiting times between the long distance and the local services are often perceived as unfavourable.

Long distance services make several stops within the urban areas through which they travel. As a result the Aberdeen to Inverness bus service has a dual role as long distance inter urban and local intra urban public transport service. Aside from the limited-stop bus services, this can present an inconvenience for long distance passengers.

The central location of Elgin bus station is ideal but is a considerable distance from the railway station. There are no dedicated public transport links between the bus and railway stations, which inhibits multi-modal public transport journeys. It is however noted that the bus station is served by an average of 21 buses per hour; both long distance and local services.

With Moray having a predominantly rural population, accessibility to bus services is a key problem. The sporadic demand from the dispersed Moray community limits the viability for bus service providers to increase rural coverage.

3.2.5 Ongoing Development

The Moray Development Plan identifies Elgin as the primary centre within Moray with the largest population and the main centre for retail, commercial and leisure provision. The plan states that the town will be the focus for significant investment within Moray and will accommodate the largest proportion of proposed new development. With the transport network already congested, realisation of this aspiration will increase future demand on the road network.

Central Elgin is constrained by the existing built environment. The railway line, pedestrian footbridge over the A96, a pedestrian underpass beneath the A96 and business, residential and commercial properties present physical constraints to potential transport interventions.

The land use allocation of The Moray Council Development Plan has a significant bearing on travel routes to work and retail/leisure areas. The concentration of Moray's economic and housing development aspirations in Elgin will require a transport network that is responsive to future demand.

3.2.6 Non-Motorised Road User (NMU) Facilities

There are limited designated pedestrian and cyclist facilities on the road network in Elgin. There are proposals for a North – South cycle route through Elgin, which may be constrained by limited crossing opportunities on the A96 and across the railway line. At present the limited cyclist facilities, e.g. parking, within the town would not complement the cycle route. The existing built environment may prohibit the inclusion of designated NMU facilities.

The current popularity of cycling in Elgin (over 3.6 times the Scottish average for travel to work) supports the argument for investment into improving the existing provisions.

3.3 Perceived Problem Areas along the A96 in Elgin

3.3.1 A96 West Road / Morriston Road Priority Junction

The A96 traffic flows at this location result in a fundamental lack of gaps, particularly in the PM peak. This inhibits right turn movements to and from the A96 in spite of the ghost island provision for right turns on the A96 and two approach lanes on Morriston Road. As a result, queues form on both the A96 and Morriston Road.

3.3.2 A96 West Road / Morriston Road Priority Junction to Dr Gray's Hospital Roundabout

The link capacity of the A96 between the Morriston Road junction and Dr Gray's roundabout is sensitive to perturbations in flow and the link also has numerous priority junctions. The effect of perturbations to traffic flow is therefore amplified. There are no formal pedestrian crossings on this link, therefore informal crossing impacts traffic flow and safety on this link.

3.3.3 A96 West Road / Wittet Drive Priority Junction

The A96 does not have a right turn lane at this junction and visibility is observed to be poor. This impacts right turn movements from the A96 to Wittet Drive and from Wittet Drive to the A96.

3.3.4 A96 Alexandra Road / A941 Northfield Terrace Roundabout

This junction connects the A96 to the southern section of the A941; resulting in conflict between the A96 and A941 traffic and high traffic flows. The geometry of this roundabout is perceived to give a false priority to the A96 West to East traffic movement leading to an unbalanced operation. The junction is also impacted by queues from the Tesco roundabout to the east. Queues are observed on both the A96 and A941 approaches to this junction.

3.3.5 A96 Alexandra Road, Northfield Terrace Roundabout to Tesco Roundabout

This link is particularly short in length and it is loaded by the roundabouts at both ends by A96 and A941 traffic. The pelican crossing on this link is not particularly well used. The combination of the junction operations and pelican crossing contribute to the link sensitivity and congestion.

3.3.6 A96 Alexandra Road / Tesco Roundabout

There are high traffic flows on all arms of the roundabout from the A96, A941 and Tesco. The roundabout operation is particularly affected by Saturday peak flows. Heavy goods vehicles are observed to intrude into the third lane when travelling on the A96 east to west. In addition, driver confusion, due to the signing of the A96 west to east movement, results in poor lane discipline. This is perceived to be one of the worst functioning roundabouts on the A96 in Elgin.

3.3.7 A96 Alexandra Road, Tesco Roundabout to Halfords Roundabout

The volume of traffic on this link is notably high due to the combined influence of the A96, A941, bus station, Ladyhill car park and Tesco traffic. This link also contains the A96 / North Street priority junction, which has no right turn lane on the A96, resulting in obstruction of the through traffic. The high traffic volume and the presence of a well used controlled pedestrian crossing contribute towards congestion.

3.3.8 A96 Alexandra Road / A941 Cumming Street (Halfords) Roundabout

The volume of traffic using the roundabout is high as it accommodates A96 and A941 traffic. A u-turn contribution to the circulating flows from buses accessing the bus station and vehicles requiring access to Ladyhill and Boroughbriggs Road car parks exacerbates the operational challenges. The junction has a small inscribed circle diameter relative to the circulating carriageway width, which may affect traffic movements. Queues are observed on all arms of this junction at peak times.

3.3.9 A96 East Road / Pansport Road Roundabout

Heavy traffic volumes are observed on all arms of this roundabout. The geometry, with its small inscribed circle diameter acts as a constraint to its operation. The Maisondieu Road arm to the south has a significant heavy goods vehicle flow. There may be a pedestrian conflict issue at the junction, particularly due to demand from the nearby East End Primary School. Queues tend to form on the A96 and Pansport Road arms. Congestion is observed throughout the day.

3.3.10 A96 East Road / Ashgrove Road Priority Junction

Traffic flows on the A96 at this junction are observed to be high. Ashgrove Road provides a link between the A96 and the A941 south and therefore performs the role of a local distributor road. Right turns to and from Ashgrove Road and left turns onto the A96 are observed to be difficult at this junction due to the heavy traffic flows and limited gap availability.

3.3.11 A96 East Road, East of Ashgrove Road Junction

Queuing is observed on this section of the A96. This area is particularly prone to tidal flow and is within the high traffic flow area servicing the industrial and commercial developments in East Elgin. Delays and queuing on this section of the A96 may be affected by queuing at Pansport Roundabout and acceleration / deceleration as traffic joins and leaves the A96 via the numerous priority junctions on this link.

3.4 Perceived Problem Areas along the A941 in Elgin

3.4.1 A941 North Street / Morriston Road Priority Junction

Right turns from and to Morriston Road are observed to be problematic as there is no right turn filter lane on the A941 and the junction has poor visibility. Morriston Road is narrow on the approach to this junction, which constrains traffic flow. Although the average daily traffic flow is moderate, tidal flow behaviour is observed in the turning movement traffic flows at this junction at peak times. In addition, pedestrian conflicts are observed due to a lack of formal crossing facilities.

3.4.2 A941 Northfield Terrace / South Street (Comet) Roundabout

The roundabout geometry is constrained and visibility is a problem at this junction, particularly on the South Street west approach arm due to the immediate built environment.

3.4.3 A941 Hay Street / Wards Road Priority Junction

This junction only presents itself as a constraint as a function of the Wittet Drive to Wards Road route being used as an alternative link between A96 West Road and the A941 South. Right turns at this junction have the potential to be problematic as the A941 does not have a right turn filter lane.

3.4.4 A941 Station Road / Maisondieu Road (Laichmoray) Roundabout

This roundabout has notably high traffic flows and pedestrian conflict arises due to insufficient crossing facilities. Queuing is regularly observed from this roundabout. The junction is also affected by queues from the overbridge, particularly during the PM peak period. Right turns from the A941 Station Road to the A941 New Elgin Road are oversaturated and overcapacity particularly in the PM peak. This movement represents A941 through traffic travelling southbound.

3.4.5 A941 New Elgin Road Railway Overbridge

High flows are observed on this link as it is the main road crossing over the railway. The link capacity is constrained by the width of the overbridge and the vertical alignment of the carriageway is also non-standard. These factors contribute to regular congestion on this section of the A941.

3.4.6 A941 New Elgin Road / Edgar Road Roundabout

This roundabout experiences high traffic volumes as it provides access to the railway crossing and the large retail area to the South West of Elgin. As a result queuing is observed at the roundabout.

3.5 Findings

Reviewing the high level and specific problems contributing to Elgin's transport problems reveals certain persistent themes that require attention. The workshop team identified the key issues to be:

- Reliability;
- Severance;
- Conflict;
- Transport management;
- Economic growth;
- Public transport and modal shift; and
- Efficiency.

It is evident that setting objectives based on these issues will promote interventions that are specific, appropriate and relevant to the scope of this study and whose outcome is measurable.

4 TRANSPORT POLICY AND OBJECTIVES

4.1 Introduction

The purpose of this chapter is to develop a set of objectives in light of the national, regional and local transport objectives that will aim to address traffic issues within Elgin as described in the previous chapters.

4.2 Transport Policy Context

A set of objectives for Elgin lies within the context of several overarching transport strategies. The key objectives of these strategies and policies are discussed below.

4.2.1 National Transport Strategy and STPR

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

Scotland's National Transport Strategy (NTS) uses the following Key Strategic Outcomes (KSOs) as the basis for delivering improvement to transport in Scotland in response to the Scottish Government's purpose and strategic objectives:

- 'Improve journey times and connections, to tackle congestion and the lack of integration and connections in transport which impact on our high level objectives for economic growth, social inclusion, integration and safety';
- 'Reduce emissions, to tackle the issues of climate change, air quality and health improvement which impact on our high level objective for protecting the environment and improving health'; and
- 'Improve quality, accessibility and affordability, to give people a choice of public transport, where availability means better quality transport services, value for money and a realistic alternative to the car'.

The STPR adopted the National Transport Strategy KSOs as its own objectives and used them as a basis to develop national and specific objectives for various urban networks, strategic nodes and transport corridors.

In developing and appraising transport interventions, the STPR used a hierarchy approach:

- Firstly, **maintaining and safely operating** existing assets;
- Secondly, at promoting a range of measures, including innovative solutions, to **make better use of existing capacity**; and
- Thirdly, promoting **targeted infrastructure improvements**.

With respect to the Aberdeen to Inverness Corridor the following specific objectives were set by the STPR:

- To improve connectivity, particularly by public transport between Inverness city centre and the growth area to the east including Inverness Airport;

- To improve journey time and increase opportunities to travel, particularly by public transport, between Aberdeen and Inverness; and
- To reduce the accident rate and severity rate to current national average.

STPR Intervention 22 – Targeted Road Congestion / Environmental Relief Schemes includes STPR recommendations for the A96. This intervention, classed as a targeted infrastructure improvement, aims to reduce conflicts between strategic and local traffic in order to achieve the three KSOs. The intervention proposes various enhancements to the A96 including a bypass around Nairn. The objectives for Elgin are required to align with and promote the delivery of STPR Intervention 22.

4.2.2 The Highlands and Islands Transport Partnership (HITRANS) Transport Strategy

The vision of HITRANS Transport Strategy (2008) for the Highlands and Islands is to 'enhance the region's viability'. In order to deliver this vision a hierarchy of objectives are set out in the Transport Strategy as described below.

The delivery objective is 'improving interconnectivity of the whole region to strategic services and destinations'. The primary outcome objective is 'to enable the region to compete and support growth'.

These are supported by the following sub-objectives:

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

The Regional Transport Strategy (RTS) for the Highlands and Islands Proposed Delivery Plan (2007) sets out strategic policies for meeting the objectives with an overall aim to 'develop a fit for purpose, multi-modal transport system'.

4.2.3 Moray Local Transport Strategy (LTS)

The current Moray Local Transport Strategy (2001) vision is to provide transport infrastructure capable of meeting the requirements of the people and businesses within Moray, in keeping with the Council's commitment to sustainability. To achieve this vision the LTS presents the following key objectives and sub-objectives:

'Key Objective 1: to improve accessibility to jobs, services and facilities within Moray by:

- Maintaining and improving the existing road network;
- Improving road, rail, air and sea links to the rest of Scotland, the UK and Europe;
- Realising the potential for public transport, cycling and walking;
- Improving the linkages between different modes of transport; and
- Improving the transport infrastructure related to recreation and tourism'.

'Key Objective 2: to promote sustainability and safety by:

- Reducing the need to travel generally;
- Using land use planning to reduce travel needs;
- Reducing pollution where necessary to meet Government requirements;
- Seeking to continually improve safety; and
- Counteracting the additional costs and benefits of rurality'.

4.2.4 Elgin STAG Study

Through Halcrow Group Ltd and The Moray Council's STAG Part 1 Appraisal of the transport issues facing Elgin, a set of transport objectives were developed for Elgin. The key planning objective proposed is:

- 'to provide a quicker, safer and more reliable transport system in and around Elgin while accommodating future development.'

This is supported by the following set of sub-objectives:

- 'to reduce average junction delay times by introducing junction improvements on the A96 and A941 for traffic egressing and accessing key junctions from the base year scenario';
- 'to minimise delay and disruption to all mode users caused by the conflict of modes on key routes in and around Elgin';
- 'to improve safety for all road users in and around Elgin';
- 'to improve the management of parking in Elgin';
- 'to encourage modal shift from private car to public transport, cycling and walking';
- 'to mitigate the risks of adverse environmental impacts caused by motorised vehicular traffic in and around Elgin'; and
- 'to ensure integration of land use and transport'.

4.3 Elgin Traffic Review Objectives

The workshops involving The Moray Council, Transport Scotland and Jacobs Consultancy identified that the nature of the road network in Elgin and its interaction with the Transport Corridor requires a holistic approach to transportation to accommodate the needs of both the local and national transportation networks. Improvement to traffic management and congestion in Elgin will lead to an overall improvement to the operation of the A96 Aberdeen to Inverness Transport Corridor in this area.

The primary outcome of this workshop was a set of objectives, unique to Elgin and the section of the A96 within the town, taking into account the desired outcomes of the overarching transport policy. The objectives are to:

- Maintain a safe and reliable transport network in and to Elgin;

- Improve accessibility and connectivity to support economic growth in Elgin and Moray; and

- Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.

These objectives are specific to Elgin's unique transportation network and look to address the perceived transport problems within the scope of the Elgin Traffic Review.

5 OPTION GENERATION, SIFTING AND APPRAISAL

5.1 Introduction

The aim of this chapter is to generate a set of deliverable schemes for further study that meet the objectives of the Elgin Traffic Review. The chapter describes the step by step process undertaken during various workshops involving The Moray Council, Transport Scotland and Jacobs Consultancy, where optioneering, sifting and scheme consolidation took place.

5.2 Optioneering

5.2.1 Initial Option Generation

The following high level list of possible schemes was generated at the workshop to be taken through the first sifting process:

1. New road crossing over the railway in south west Elgin and associated works;
2. Improve distribution of traffic on the road network through use of new and existing roads;
3. New roundabout at A96 / Morriston Road;
4. A941 / Morriston Road junction improvements;
5. Additional eastbound lane on the A96 from Halford's Roundabout to Tesco's Roundabout;
6. Wittet Drive junction improvements. Investigate right turn ghost island, roundabout, new roundabout at Sherrifmill Road or garden wall demolition options;
7. Road sign and marking re-design in Elgin for consistency;
8. Review and re-design of pedestrian and cyclist crossings on the A96 in Elgin;
9. Tesco Roundabout junction improvements. Investigate re-design including re-design to three arm;
10. Amendment of the A96 / North Street Junction. Investigate geometric improvements and left turn only from North Street (except buses);
11. Bus priority signals at the bus station access;
12. Halfords Roundabout junction improvements. Re-design to incorporate bus lane and / or car park access;
13. Re-design and / or re-locate Elgin Bus Station;
14. Pansport Roundabout junction improvements. Investigate re-design of roundabout and possible signalisation;
15. A96 / Ashgrove Road junction improvements. Investigate new roundabout or signalisation;
16. Investigate capacity improvements to A96 roundabouts east of Ashgrove Road;
17. Signing at either end of Reiket Lane for A96 to A941 traffic;
18. Signalisation of the Linkwood Way / A96 junction;
19. Investigate the speed limit regime in Elgin;

20. Pedestrian and cyclist facilities across and along the A96 in Elgin;
21. Urban Traffic Control (UTC) / Intelligent Transport Systems (ITS) for most congested areas;
22. Bus priority on the A96 particularly in peak times;
23. Investigate and promote the hierarchy of bus services in Elgin, to possibly include mini Park and Ride;
24. Rail – bus shuttle link;
25. Lesmurdie Road junction and link improvements;
26. Real time car park information systems;
27. Train timetabling suitable to commuter traffic, leisure and retail, including promotion of services; and
28. Promotion of public transport.

5.2.2 Grouping

The schemes were subsequently categorised into infrastructure, information and management based schemes and the type of improvement identified. During the grouping exercise the description of schemes was firmed up and this resulted in schemes 5 and 12 being combined into a single scheme for the 'A96 / A941 Cumming Street (Halfords) Roundabout' and the addition of a 'Public Transport Facilities' scheme, which covers several of the proposed public transport related schemes.

A review of the generated schemes against Transport Scotland committed and uncommitted works on the A96 in Elgin provided an additional commentary to take forward to the sifting and appraisal stages. The scheme classification is provided in Table 2.

5.3 Sifting and Consolidation

The schemes identified in Table 2 were subsequently assessed against the objectives for the Elgin Traffic Review, which are to:

- Objective 1 – Maintain a safe and reliable transport network in and to Elgin;
- Objective 2 – Improve accessibility and connectivity to support economic growth in Elgin and Moray; and
- Objective 3 – Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.

This process revealed that the 'Parking Guidance and Information Systems' scheme would not significantly contribute to meeting any of the objectives for the Elgin Traffic Review. As a result this scheme was sifted out.

Subsequently, an interrogation of the schemes was undertaken to consolidate linked or dependent schemes. The scope of each scheme was reinforced to reflect the inclusion of linked activities and omission of committed schemes. The consolidated list of schemes is contained in Table 3 with an assessment against the Elgin Traffic Review objectives and the Scottish Transport Appraisal Guidance (STAG) assessment scale.

Table 2 - Scheme Classification

Scheme Classification	Scheme Title *Description*	Type of Improvement
Infrastructure	New West Elgin Railway Crossing *New South West distributor road from the A96 crossing over the railway and associated works.*	Improved distribution of traffic (through use of new and existing roads)
	A96 / Morriston Road *New roundabout and associated Morriston Road link works.*	Junction improvement
	A941 / Morriston Road *Junction improvements and associated Morriston Road link works.*	
	A96 / Wittet Drive *Investigate right turn ghost island, roundabout, new roundabout at Sherrifmill Road or garden wall demolition options.*	
	A96 / Tesco Roundabout *Investigate re-design options including re-configuration to three arms.*	
	A96 / North Street *Investigate geometric improvements and left turn only from North Street (except buses).*	
	A96 / A941 Cumming Street (Halfords) Roundabout *Re-design to incorporate bus lane and / or car park access. Alternatively, an additional eastbound lane on the A96 from Halford's Roundabout to Tesco's Roundabout.*	
	A96 / Pansport Road Roundabout *Investigate re-design of roundabout and possible signalisation.*	
	A96 / Ashgrove Road *Investigate new roundabout or signalisation.*	
	A96 East of Ashgrove Road *Investigate capacity improvements to A96 roundabouts east of Ashgrove Road in Elgin.*	
	A96 / Linkwood Way *Investigate signalisation of the junction and associated works or alternatively linking the stub arm of the A96 / Reiket Lane roundabout to Linkwood Place.*	
	Pedestrian and Cycling Facilities. *Review existing and provision of new cycle lanes, cycle parking, cyclist priority, footways and footpaths along the A96 in Elgin.*	Cyclist and pedestrian provisions

Scheme Classification	Scheme Title ***Description***	Type of Improvement
Management	Speed Limit Review *Investigate the speed limit regime in Elgin.*	Traffic management
	Urban Traffic Control (UTC) *Implementation in congested areas.*	
	Intelligent Transport Systems (ITS) *Implementation in congested areas.*	
	Bus Priority *Particularly on the A96 in peak times and at the Elgin Bus Station access and egress junctions.*	Public transport provisions
	Bus Services *Investigate and promote the hierarchy of bus services in Elgin, to possibly include mini Park and Ride.*	
	Public Transport Facilities *Improvement to public transport facilities for all modes.*	
	Rail – Bus Shuttle Link *Bus link between the railway station and the bus station.*	
	Bus Station *Re-locate or re-design bus station and associated works.*	
	Pedestrian Crossings *Review and re-design of pedestrian and cyclist crossings across and along the A96 in Elgin.*	Cyclist and pedestrian provisions
Information	Reiket Lane *Road signs and markings to promote use of the alternative route linking A96 East to A941 South. This is to include signing at the junctions either ends and along Reiket lane as required.*	Improved distribution of traffic (through use of new and existing roads)
	Parking Guidance and Information Systems *Real time car park information.*	Traffic information
	Road Signs and Markings *Re-design of road signs and marking in Elgin for consistency.*	
	Public Transport Timetabling *Timetabling suitable to commuter, leisure and retail demand and multi-modal travel.*	Public transport information
	Promotion of Public Transport Services	

Table 3 – Consolidated Scheme Assessment against Objectives and STAG Part 1 Criteria

Scheme No / type	Scheme Title *Description*	Objective			STAG Part 1 Criteria (+ represents benefit, - represents cost or negative impact)				
		1	2	3	Environment	Safety	Economy	Integration	Accessibility, Social Inclusion
	Infrastructure Schemes								
1 Traffic Distribution	New West Elgin Railway Crossing • *New South West distributor road from the A96 crossing over the railway and associated works;* • *Road signs and markings to promote to use of this alternative route to the south;* • *Pedestrian and cyclist facilities, including designated crossing points; and* • *Investigate options for connection to the A96 at Morriston Road or Wittet Drive.*	✓	✓	✓	Minor - Minor +	Minor - Minor +	Moderate +	Neutral Minor +	Moderate +
2 Traffic Distribution	Morriston Road • *Junction improvements at A96 / Morriston Road and A941 / Morriston Road;* • *Road signs and markings to promote to use of this alternative route linking A96 West and A941 North;* • *Pedestrian and cyclist facilities, including designated crossing points;* • *Link upgrade of Morriston Road; and* • *Review of existing junctions along the link.*	✓	✓	✓	Minor +	Moderate +	Minor +	Neutral	Minor +
3 Traffic Distribution	Lesmurdie Road • *Traffic signals at A941 / Lesmurdie Road junction;* • *Road signs and markings to promote to use of this alternative route linking A96 East and A941 North;* • *Link upgrade of Lesmurdie Road;* • *Pedestrian and cyclist facilities, including designated crossing points;* • *Review of existing junctions along the link; and* • *Traffic Regulation Order banning on street parking in key areas.*	✓	✓	✓	Minor +	Minor - Minor +	Minor +	Neutral	Neutral

Scheme No / type	Scheme Title *Description*	Objective			STAG Part 1 Criteria (+ represents benefit, - represents cost or negative impact)				
		1	2	3	Environment	Safety	Economy	Integration	Accessibility, Social Inclusion
4 Junction improvement	A96 / Wittet Drive • *Junction improvements and associated works. Investigate right turn ghost island, roundabout, new roundabout at Sherrifmill Road or garden wall demolition options.*	✓		✓	Neutral	Moderate +	Neutral	Neutral	Neutral
5 Junction improvement	A96 Alexandra Road • *Investigate re-design of A96 / Tesco Roundabout including re-configuration to three arms;* • *Investigate geometric improvements to A96 / North Street junction and left turn only from North Street (except buses);* • *Re-design A96 / Halfords Roundabout to incorporate bus lane and / or car park access;* • *Investigate an additional eastbound lane on the A96 from Halford's Roundabout to Tesco's Roundabout;* • *Road signs and markings to reduce driver confusion; and* • *Improvements to pedestrian and cyclist facilities along and across Alexandra Road.*	✓	✓	✓	Moderate +	Minor +	Moderate +	Minor +	Minor +
6 Junction improvement	A96 East Road • *Investigate re-design of A96 / Pansport Road roundabout and possible signalisation;* • *Investigate new roundabout or signalisation at A96 / Ashgrove Road;* • *Investigate capacity improvements to A96 roundabouts east of Ashgrove Road in Elgin;* • *Investigate signalisation of the A96 / Linkwood Way junction and associated works or alternatively linking the stub arm of the A96 / Reiket Lane roundabout to Linkwood Place* • *Pedestrian and cyclist facilities, including designated crossing points;* • *East Road link upgrade and review of all existing junctions as required; and*	✓	✓	✓	Moderate – Moderate +	Minor +	Moderate +	Neutral	Minor +

Scheme No / type	Scheme Title *Description*	Objective			STAG Part 1 Criteria (+ represents benefit, - represents cost or negative impact)				
		1	2	3	Environment	Safety	Economy	Integration	Accessibility, Social Inclusion
	• *Road signs and markings to reduce driver confusion.*								
7 Pedestrian & Cyclist Provisions	Pedestrian and Cyclist Facilities • *Improvement of existing and provision of new pedestrian and cyclist links and cyclist parking to the town centre, retail developments and schools in Elgin;* • *Investigate the provision of new pedestrian and cyclist crossing facilities over the railway line;* • *Review and re-design, where necessary, crossings on the A96 in Elgin;* • *Provision of an east to west cycle route through central Elgin;* • *Provision of destination / directional signing on cycle and pedestrian routes; and* • *Implementing DDA compliant walking and cycle routes where possible.*	✓	✓	✓	Minor - Moderate +	Minor +	Minor +	Minor +	Moderate +
	Management Schemes								
8 Traffic management	Traffic Management • *Investigate the speed limit regime in Elgin;* • *UTC implementation at key junctions in congested areas;* • *ITS solutions in congested areas, for bus priority and demand management;* • *Review and re-design of pedestrian and cyclist crossings on the A96 in Elgin.*	✓		✓	Minor - Minor +	Moderate +	Minor -	Neutral	Neutral
9 Public Transport Provisions	Local Bus Services • *Bus priority including use of ITS solutions;* • *Investigate and promote hierarchy of bus services to possibly include mini park and ride;* • *Timetabling suitable to commuter, leisure and retail demand and link between long distance services;* • *Bus station re-design and / or relocation; and* • *Improved bus stop facilities, including real time passenger information.*	✓	✓	✓	Minor +	Minor +	Minor +	Moderate +	Moderate +

Scheme No / type	Scheme Title *Description*	Objective			STAG Part 1 Criteria (+ represents benefit, - represents cost or negative impact)				
		1	2	3	Environment	Safety	Economy	Integration	Accessibility, Social Inclusion
10 Public Transport Provisions	Integrated Rail and Bus • *Provision and promotion of a railway station to bus station shuttle service;* • *Linked bus and rail timetabling suitable to demand; and* • *Promotion of public transport services.*	✓	✓	✓	Neutral Minor +	Neutral	Neutral Minor +	Minor +	Minor +
11 Public Transport Provisions	Rail Services • *Railway station park and ride;* • *Timetabling suitable to commuter, leisure and retail demand;* • *Improved station facilities including car park extension;* • *Promotion of passenger and freight rail services; and* • *New rail freight upload/offload machine and associated works at existing disused sidings in Elgin.*	✓	✓	✓	Minor + Moderate +	Minor +	Minor + Moderate +	Minor +	Minor +
	Information Schemes								
12 Traffic information	Reiket Lane • *Road signs and markings to promote use of the alternative route linking A96 East to A941 South, to include signing of the junctions at either end and along Reiket lane as required.*	✓	✓	✓	Minor +	Minor +	Minor +	Neutral	Neutral
13 Traffic information	Road Signs & Markings • *Re-design of road signs and markings in Elgin for consistency and to reduce driver confusion at junctions;* • *Directional signs to include location of car parks and promote existing alternative routes avoiding congested areas;* • *New yellow box road markings as required.*	✓	✓	✓	Neutral Minor +	Neutral Minor +	Neutral Minor +	Neutral	Neutral

5.4 Schemes for Appraisal

Table 3 demonstrates the assessment against the STAG Part 1 appraisal criteria that formed part of the process undertaken during a workshop with The Moray Council, Transport Scotland and Jacobs Consultancy. The full appraisal details are contained in Appendix F. A summary of the output of the appraisal process for each scheme is provided below.

5.4.1 Do-minimum Scheme

The do-minimum scheme represents transport improvement commitments that have policy and funding approval and from which it would be difficult to withdraw. This is the situation against which the options in Table 3 are appraised. The Elgin Traffic Review do-minimum scheme includes the following:

- **The Reiket Lane road crossing over the railway line** linking A96 East to A941 South is scheme undertaken by The Moray Council that was completed on 24th July 2009 and is now open to the public. The works included upgrade of the existing trunk road junction to a roundabout, carriageway improvements and the provision of shared cycleway/footway on Reiket Lane. Depending on its level of use by local traffic and long distance commuters the scheme has the potential to alleviate congestion on the A96 East Road, west of A96 / Reiket Lane junction; A941 New Elgin Road roundabouts; and A96 Alexandra Road roundabouts.
- **A96 / Morriston Road Structural Maintenance Scheme,** which would improve but not alter the form of this junction, will be undertaken through this junction this financial year.
- **A96 / Tesco Roundabout** the existing traffic splitter island on the westbound approach to the roundabout will be removed this financial year. This has the potential to reduce driver confusion and improve lane discipline at the roundabout.
- **A96 / North Street right turn ban**, the order to ban right turns from the A96 onto North Street has been made, signing to that effect will be erected within this financial year.
- **A96 / Halfords Roundabout resurfacing** works are proposed for next financial year. This would not have a significant effect on the operation of this roundabout.
- **30mph speed limit on the A96 through Elgin** has been promoted and the order has been made. The works to erect signing are likely to be completed within the next year.
- **A96 / Lossie Wynd** proposals to install a toucan crossing this financial year.

5.4.2 Reference Case – Uncommitted Schemes

The reference case represents the existing situation and the uncommitted improvements in Elgin that are currently under consideration. This provides an additional situation to which the short listed schemes can be compared. The reference case for the Elgin Traffic Review includes the following works in addition to those described in the do-minimum:

- **A96 / Wittet Drive,** signalisation of the junction is a planning condition placed on a private developer that is currently undergoing design standard compliance review. The condition also includes improvements at Morriston Road / Sheriffmill Road junction; and
- **A941 / Morriston Road**, signalisation of the junction is a planning condition placed on a private developer. This is not viewed as a long term solution to the issues faced at this junction.

- **A96 / Ashgrove Road,** the provision of a new roundabout at this junction is a planning condition placed on a developer. This planning condition also includes improvements to the A941 / Edgar Road roundabout in South Elgin.

5.5 Summary of Appraisals

5.5.1 Scheme 1 – New West Elgin Railway Crossing

This intervention has a significant capital cost associated with its delivery and substantial benefits will be required to provide a positive Benefit/Cost Ratio (BCR). There are also many technical risks that require further detailed study. This route would function as the south-west distributor corridor and its principal function would be to relieve current and future issues at the main railway crossing on the A941 and its associated junctions. The need and timescale for delivery of this option is most obviously associated with the point at which operation of the existing junction and link section that would be relieved, becomes unacceptable. It is also linked with further significant expansion (either residential, commercial or industrial) in the south of the town. The issue of whether to link into Wittet Drive or Morriston Road is significant both in terms of supporting the establishment of a clear distributor road layout, but also in terms of the promotability and affordability of the scheme.

5.5.2 Scheme 2 – Morriston Road

This intervention makes best use of existing infrastructure by strengthening the role of Morriston Road as the north-west distributor route linking the A96 (west) and the A941 (north). The intervention includes elements that are likely to be delivered by developers, and it is likely that a staged delivery of this intervention would be undertaken. Improving the functionality of this route would allow traffic to bypass the existing conflict areas in the central part of the A96. This is only likely to be fully realised once junctions at either end have been upgraded to provide sufficient opportunities for all turning traffic. This intervention fits well in to the overall structure of a future delivery plan. The potential interaction with Scheme 1 is noted and as alignment for Scheme 1 is clarified, this will inform later stages of this intervention delivery.

5.5.3 Scheme 3 – Lesmurdie Road

While this option would strengthen the role of Lesmurdie Road as the north-east sector distributor route, it would continue to join the A96 at Pansport roundabout. This junction is located relatively close to the central area in comparison to other sector distributors, and its ability to significantly lessen the impact of traffic on critical parts of the network is therefore limited. It would, however, perform well as part of a wider improvement at Pansport should this scheme be taken forward.

5.5.4 Scheme 4 – A96 / Wittet Drive

This option addresses a largely localised issue at Wittet Drive, and performs well in terms of road safety but does not significantly impact on other criteria; either positively or negatively. The delivery of this option is linked with ongoing discussions to improve the junction at Wittet Drive through the provision of traffic signals as part of a development-led improvement. If this were to be implemented it would go some way to addressing the issues at this location. A further enhancement, as indicated in this intervention, would not offer significant benefits at this time over-and-above the signalisation. It should however be examined as an integral part of any future western

cross-railway link, as a connection into Wittet Drive would require a step-change in junction provision, beyond that of a simple traffic signal layout.

5.5.5 Scheme 5 – A96 Alexandra Road

This scheme performs relatively well in terms of the STAG criteria and directly addresses the areas of constraint on the A96 through the provision of additional operational capacity. The intervention continues to concentrate traffic movements into the central area, and as such does not perhaps lend itself to providing enhancements to the network that would continue to provide improved conditions for a significant period of time. The intervention includes elements that range from relatively simple improvements to far more significant infrastructure. There is also therefore a range in terms of certainty regarding benefit from expenditure that, particularly for larger-scale investments, would need to be explored further.

5.5.6 Scheme 6 – A96 East Road

This scheme performs relatively well in terms of the STAG criteria and directly addresses the areas of constraint on the A96 through the provision of additional operational capacity. The intervention continues to concentrate traffic movements into the central area, and as such does not lend itself to providing enhancements to the network that would continue to provide improved conditions for a significant period of time. The intervention includes elements that range from relatively simple improvements to far more significant infrastructure. There is also therefore a range in terms of certainty regarding benefit from expenditure that, particularly for larger-scale investments, would need to be explored further. In addition, the close spacing of junctions and identified improvements means that schemes need to be considered in combination with one another. Any upgrading to Pansport roundabout should also consider link-based enhancements to Lesmurdie Road to gain most benefits of the upgrade and reduce loading on other junctions.

5.5.7 Scheme 7 – Pedestrian and Cyclist Facilities

The enhancement of existing and provision of new facilities would provide an alternative to the car for many journeys through the promotion of active modes. The evidence from Forres suggests that there is general support for cycling as an effective alternative mode, with topography contributing to the good level of cycle usage. In order to make a signficant impact on the current performance issues, active modes would need to win a large proportion of the shorter distance journeys made within the town and its immediate environs. It is relatively unlikely that this would be possible and so this intervention does not form part of the overall framework, however it is noted that there may be potential for Elgin to engage in a 'velo-city' concept to act as a pathfinder trial for large scale cycle/pedestrian enhancements, should such an opportunity and funding stream arise to further develop a local cycle network.

5.5.8 Scheme 8 – Traffic Management

An order has been passed to have a constant 30mph speed limit on the A96 through Elgin. UTC traffic signals were deemed inappropriate for the trunk road by members of the workshop team. The A96 through Elgin has no junction signalisation at present, and to impose major signalisation would have a knock on effect on the local road network and introduce forced queuing for all arms at junctions, which would be significantly impacted by the lack of queue storage. The local transport policy has been to avoid signalisation in the past. Signalisation is likely to require increased land take, which would significantly raise the cost of improvements. Bus priority and re-design of pedestrian/cyclist crossings are addressed in other schemes. This

intervention is not expected to provide a useful part of the overall framework, therefore, this scheme will not be progressed further.

5.5.9 Scheme 9 – Local Bus Services

This intervention provides for improvement to bus services and associated facilities such that it would improve accessibility and gain modal shift from the private car. While the intervention has the potential to perform well, it does rely on active involvement from the bus sector and potentially significant additional revenue funding to support services. The road network makes it unlikely that significant levels of bus priority could be provided, meaning that buses would have similar journey times to cars and no ability to bypass congestion. This means that fare levels and accessibility would be the primary reasons for modal shift. The level of investment to achieve this would be out-of-step with the benefits that could be achieved in terms of modal shift. Notwithstanding this, the relocation of the bus station could form part of a wider scheme. This issue should be given further consideration within the LTS and the Development Plan as well as informing the re-tendering of local bus services.

5.5.10 Scheme 10 – Integrated Rail and Bus

There is little evidence at present that multi-modal public transport journeys are a key demand of the transport network, and the ability of the bus network to provide adequate opportunities for multi-modal connections is limited. The provision of a shuttle bus service would perhaps be an alternative to the provision of enhanced Park-&-Ride facilities. It would however rely on linking into an enhanced bus network to be of significant benefit in supporting multi-modal journeys. The delivery of enhanced services on the Aberdeen to Inverness line through STPR provides potential to better integrate bus and rail timetables.

5.5.11 Scheme 11 – Rail Facilities

The announced investment programme in the Aberdeen to Inverness railway line will provide a step-change in passenger services that will make rail a viable alternative for many commuter journeys. One part of the intervention that may have benefits is to enhance Park-&-Ride opportunities at the rail station, and this could be taken forward through delivery of the LTS/Development Plan. In terms of rail freight facilities, there would be benefits in considering a joint system to make the most of the gauge enhancement and existing freight terminal area.

5.5.12 Scheme 12 – Reiket Lane

The significant investment by The Moray Council in upgrading Reiket Lane Bridge and associated works has provided a high-quality distributor road for the South East sector of Elgin. This permits traffic between the A941 (south) and the A96 (east) to connect without impacting on the town centre and identified areas of conflict. While the benefits are minor in nature, the level of cost associated with implementing the intervention is low, and it provides a significant opportunity to make best use of existing infrastructure. It also fits well as an intervention within the overall future delivery plan.

5.5.13 Scheme 13 – Road Signs and Markings

This intervention could provide some benefits at a relatively modest expenditure. It would be most effective if linked with the enhancement of traffic distributor links to reduce pressure on the central area. In implementing this strategy, it is important that there is an overall plan for the town in terms of directional signing and an agreed hierarchy of routes, consistent between trunk and local road networks.

6 APPRAISAL CONCLUSIONS

6.1 Introduction

Having reviewed the appraisal output for each scheme the following chapter sets out how these various interventions are brought together into an overall plan and process for future transportation improvements in Elgin.

The implementation of this process requires continuing joint commitment from Transport Scotland and The Moray Council, as proposals involve and affect both the A96 trunk road and the local road network in Elgin. This ongoing process is anticipated to involve different facets of both organisations; such as network management and local plan liaison.

6.2 Framework for Delivery

Having identified a series of potential improvements ranging from small scale network management interventions through to major new infrastructure proposals, it is important to consider how these may be delivered.

Delivery of improvements to the transportation network in Elgin are no different to improvements elsewhere in Scotland and, depending on the scheme, are likely to rely on various funding channels. These are:

- The Moray Council capital funding;
- The Moray Council revenue funding;
- Transport Scotland Trunk Road Operating Companies;
- Transport Scotland Minor Improvement Schemes;
- Transport Scotland STPR; and
- Private sector developer contributions.

It is important to recognise the current constraints that exist on these funding channels and how schemes may progress into these.

All government spending, either local or national, is subject to the outcome of periodic spending reviews. The current situation in terms of government finances means that future spending is likely to come under pressure. Within this context, it is important to note that the Minor Improvement Schemes budget is committed up to 2013. This would cater for Transport Scotland schemes that were larger than those implemented through the Operating Companies (around £0.5million), but smaller than those encompassed by STPR (around £3million).

For national funding, securing funding for future improvements will require schemes in Elgin to be viewed alongside others from across Scotland. Schemes enter this process through a ‘gateway’ approval to ensure that an appropriate level of appraisal has been carried out. It is envisaged that this report and ongoing liaison between the Council and Transport Scotland form that ‘gateway’ approval so that the identified schemes can proceed and be considered for funding through this mechanism; moving from Strategy and Investment to Transport Scotland’s delivery structure.

Having appraised the various interventions, there is a need to consider the status of individual elements relative to two criteria. The first of these is whether the particular element is sufficiently understood in terms of its location, function and definition. The second is whether there is an identified funding stream for particular elements or

whether the elements are already specified within an existing funding stream. The results of this analysis are set out below in Table 4.

.

Table 4 – Scheme Delivery Framework

Scheme	Scheme and Funding Status:		
	Scheme adequately defined & funding identified	**Scheme adequately defined but no funding identified**	**Scheme requires further definition and no funding identified**
New West Elgin Railway Crossing	Planning and assessment phase		Delivery of new crossing and associated infrastructure
Morriston Road	Specific signing alterations in conjunction with overall strategy	New junction at Morriston Road / A96 – potentially linking with new railway crossing	
	Traffic Distributor status – start of work (TRO, junction clearances, pedestrian facilities etc)	Traffic Distributor status – completion of work (TRO, junction clearances, pedestrian facilities etc)	
Lesmurdie Road	Traffic Distributor status – start of work (TRO for parking, junction clearances, pedestrian facilities etc)	Traffic Distributor status – completion of work (TRO for parking, junction clearances, pedestrian facilities etc)	Residual upgrading of link in association with Pansport improvements
		Signalisation of A941 / Lesmurdie Road junction	
A96 / Wittet Drive	Potential interim or phase 1 improvement (signals) taking into account future plans (development led)	New junction if new railway crossing connects to Wittet Drive	
A96 / Alexandra Road		A96 / A941 improvement for bus station access	Tesco roundabout redesign
		Additional lane eastbound between Tesco and A941 junctions	

Scheme	Scheme and Funding Status:		
	Scheme adequately defined & funding identified	**Scheme adequately defined but no funding identified**	**Scheme requires further definition and no funding identified**
		Geometric improvements at North Street junction	
A96 / East Road	Specific lining / kerb alignment alterations to maximise throughput	Linkwood Way signalisation / connection to Reiket Lane	Pansport junction major improvement scheme
		Ashgrove Road junction improvement (if required following other works)	Related improvements to other East Road junctions in conjunction with Pansport
Pedestrian and cyclist facilities	Investigate 'velo-city' opportunities		Pedestrian route signing to complement road signing and lining strategy
	Plan local cycle network		Deliver local cycle network
Traffic Management	Not progressed further		
Local Bus Services	LTS and Local Plan to consider relocation of bus station		
Integrated Bus and Rail		Integrated timetabling for new rail services	
Rail Facilities	STPR – delivery of improvements between Aberdeen and Inverness		
	LTS to consider access to rail freight		
Reiket Lane	Immediate action for signing upgrade	Further signing improvements	

Scheme	Scheme and Funding Status:		
	Scheme adequately defined & funding identified	**Scheme adequately defined but no funding identified**	**Scheme requires further definition and no funding identified**
Road Signs and Markings	Signing and lining strategy	Signing and lining strategy	
	Formulation of joint roads hierarchy masterplan		

Key:

- Principally or wholly a Moray Council Scheme
- Principally or wholly a Transport Scotland Scheme
- Joint Scheme
- Third party funded scheme

Estimated Implementation Costs

Scheme adequately defined and funding identified (total)	Less than £600k (excl developer delivered and STPR rail costs)
Scheme adequately defined and but no funding identified (total)	Between £8m and £10m
Scheme requires further definition and no funding identified (total)	Between £16m and £60m

No costings are included for bus or rail related items.

6.3 Overview of the Transport Network and Interventions

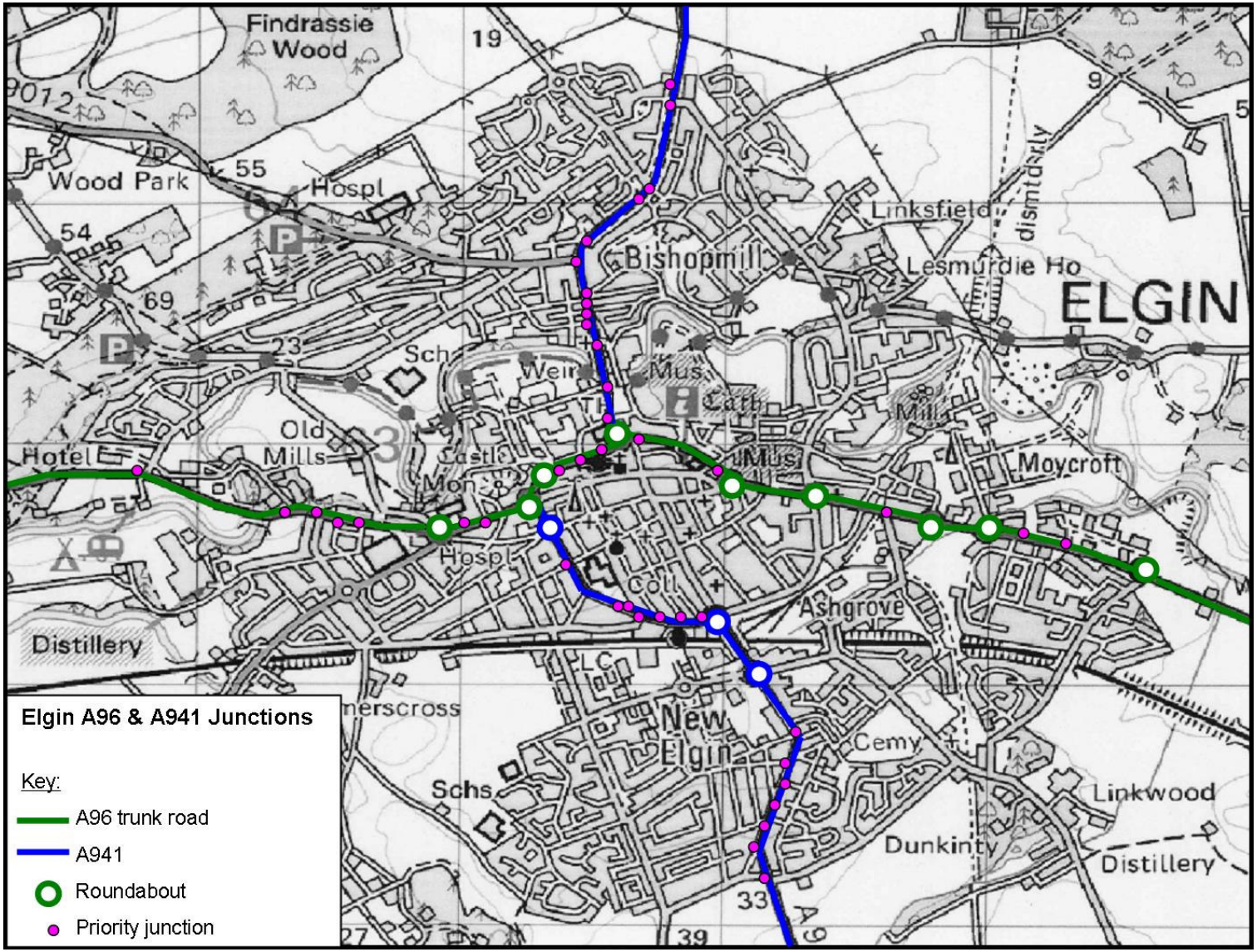
Elgin has significant assets in terms of the road network that currently exists, and the primary focus within the short term should be to make best use of these assets. These have recently been augmented by the significant investment in improvements to Reiket Lane. This route, together with its 'mirror image' on Morriston Road, provide Elgin with north-west and south-east distributor routes that can effectively link the A941 and the A96, providing alternative routes to those through the central area. Funding to improve signage from the A96 is in place and it can be delivered this year with full signing of this route being completed by 2010/11.

Following from this, there are a number of schemes that lie within the ongoing network maintenance process for both trunk and local road networks. Over the short and medium term there is ample opportunity to enhance signing and lining through both natural and targeted replacement of directional signing. It is important that this is carried out in accordance with an overall agreed masterplan, taking account of future enhancements. This will minimise life-cycle costs and maximise road user benefits. Detailed liaison between The Moray Council and the trunk road operating company will be required. In addition to these, there is an identification of activity that is needed to co-ordinate this ongoing activity with emerging policy such as the Local Plan and Local Transport Strategy. The delivery of the major improvements to rail services between Aberdeen and Inverness is also identified, which forms an early deliverable of the STPR. Some development-led interventions are also included here as part of the co-ordinated programme. The overall cost of implementing these interventions is estimated at less than £600,000.

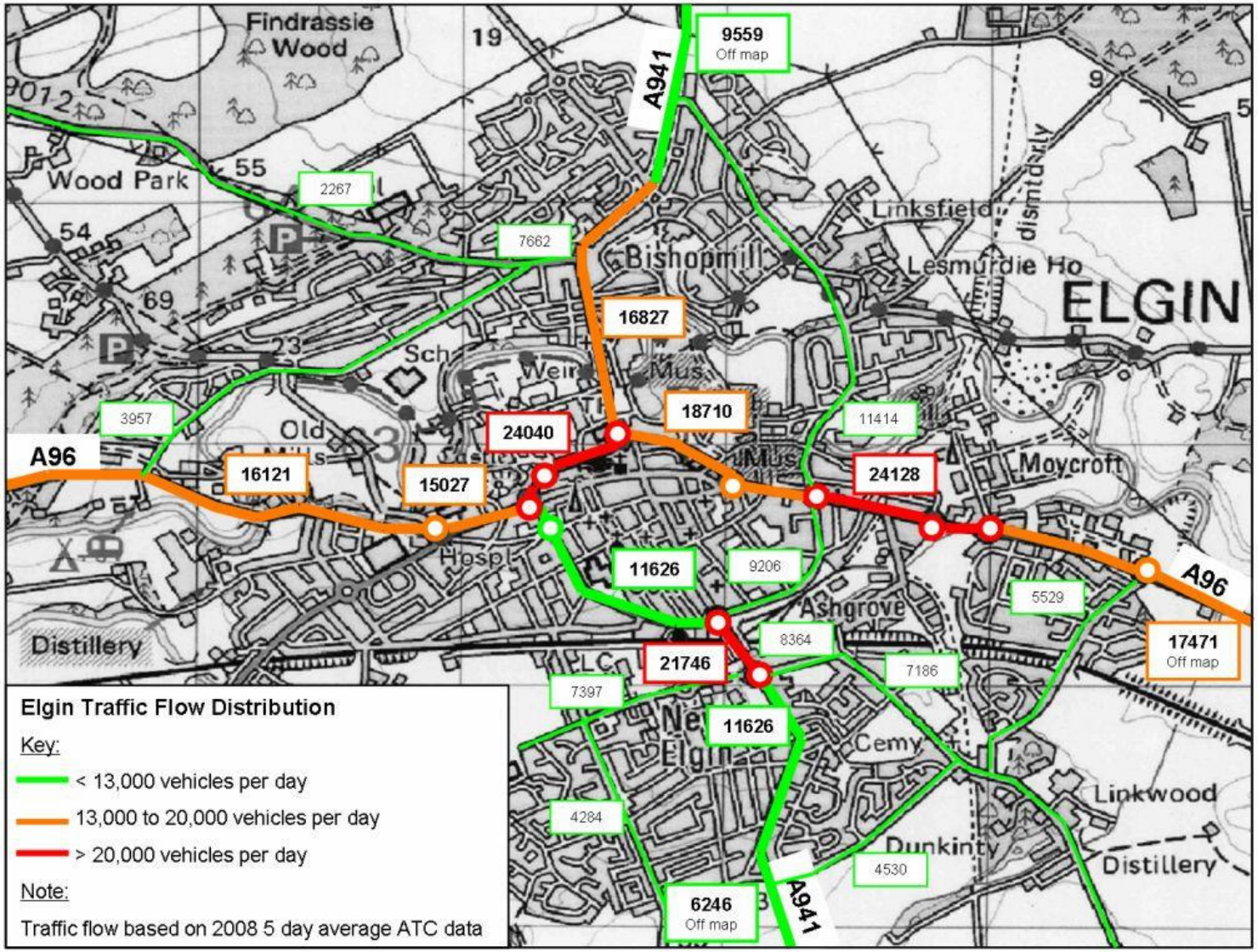
The second category identified are those where a scheme is sufficiently defined at this stage, but for which a funding source is not currently identified. These include works to strengthen the function of the local distributor roads through works at the junctions of A96/Morriston Road, A941/Lesmurdie Road, A96/Wittet Drive (should a more significant improvement beyond traffic signals be required), A96/North Street and A96/Linkwood Way. In addition, link capacity improvements to the A96 (Alexandra Road) are also identified. A further scheme identified here is the integration of timetabling for bus and rail, taking advantage of the enhancements to rail services. While a funding stream is not identified for this, it is likely that much of this would be met through rail/bus operators. The overall cost of implementing these interventions is estimated at between £8m and £10m.

The third category of schemes are those that require further work to be able to gain sufficient clarity regarding the scheme definition, and where no funding stream is currently identified to construct the interventions. The new west Elgin railway crossing is identified in this category as further work to establish the preferred scheme is needed. Similarly, interventions on the A96 at the Tesco roundabout and at Pansport roundabout require further definition and understanding. The delivery of pedestrian and cycle improvements is identified in this category, but it is anticipated that the Local Transport Strategy and Local Plan will add to the understanding of these issues and then funding from other sources, such as SUSTRANS, could be sought. The overall cost of implementing these interventions is estimated at between £16m and £60m.

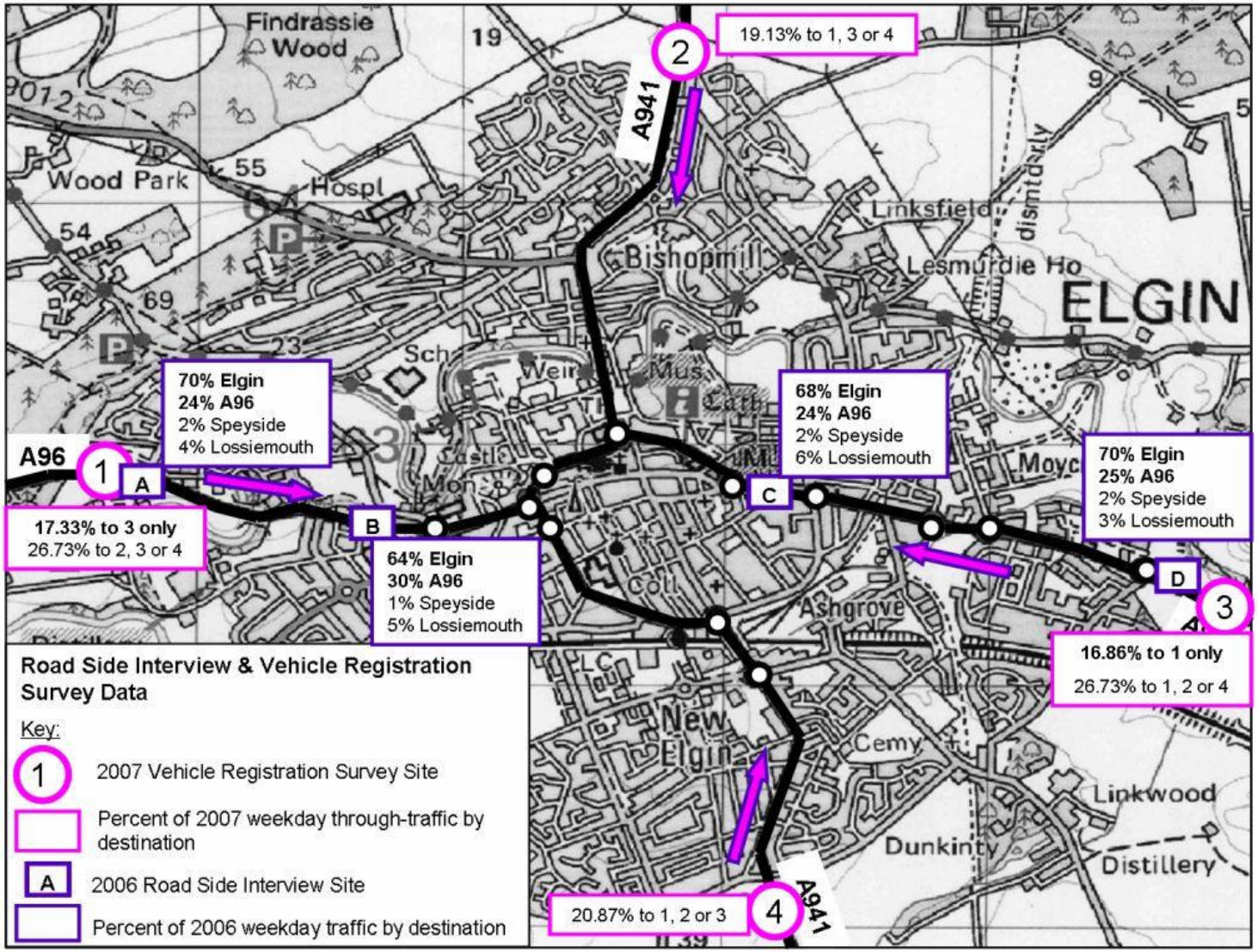
APPENDIX A ELGIN A96 & A941 JUNCTION FORM



APPENDIX B ELGIN TRAFFIC DISTRIBUTION



APPENDIX C ROAD SIDE INTERVIEW & VEHICLE REGISTRATION SURVEY DATA



APPENDIX D JUNCTION TURNING MOVEMENT COUNTS

This appendix provides information on turning counts at various key junctions in Elgin. The data was supplied by Moray Council. For consistency the following data is shown for each junction:

- AM - the number of vehicles observed to undertake a movement on Tuesday 3 June 2008 between 0800 and 0900.
- PM - the number of vehicles observed to undertake a movement on Tuesday 3 June 2008 between 1700 and 1800.
- Sat - the number of vehicles observed to undertake a movement on a Saturday in June 2008 between 1300 and 1400.

The location of the junctions reviewed is shown below.

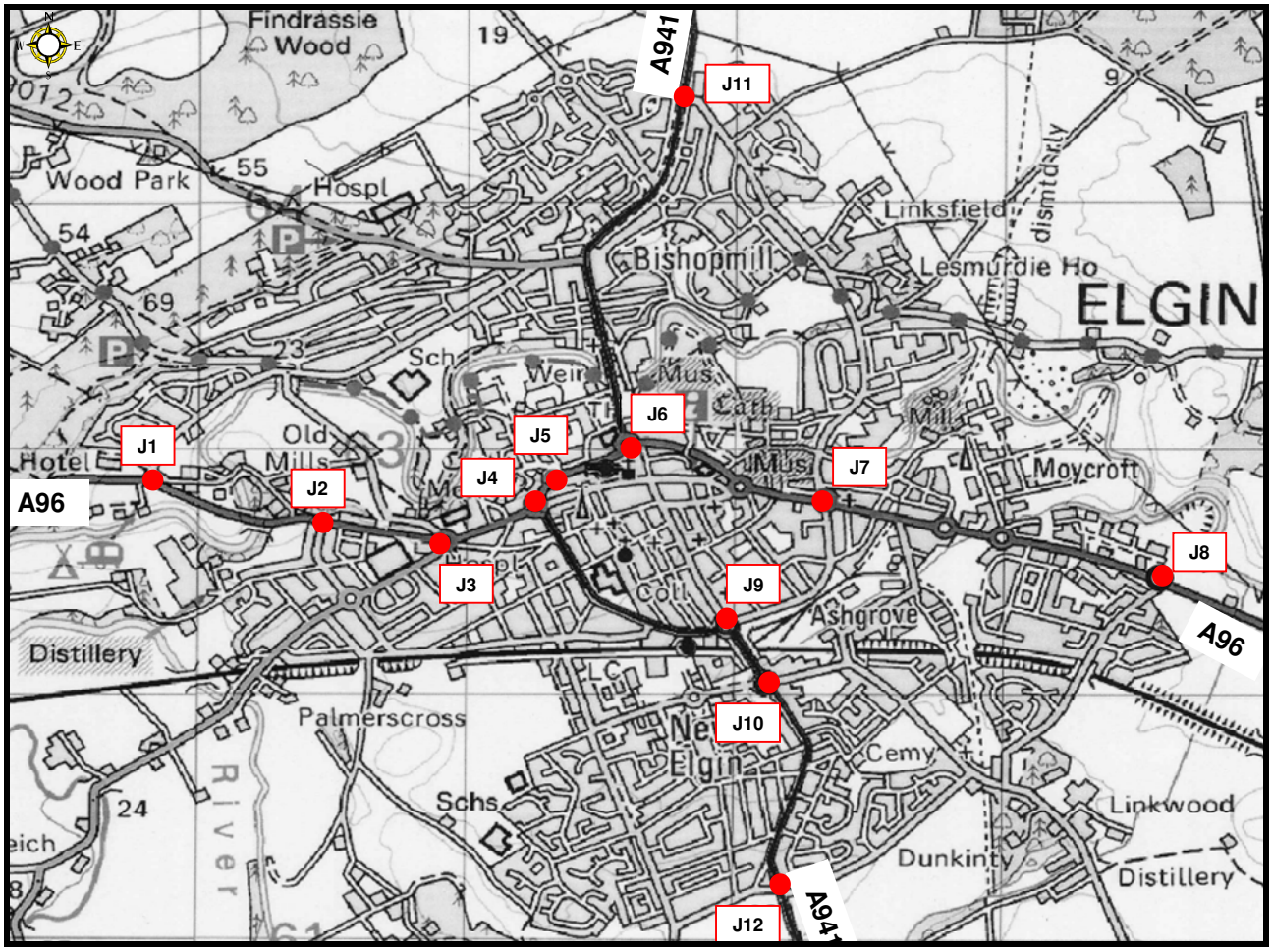
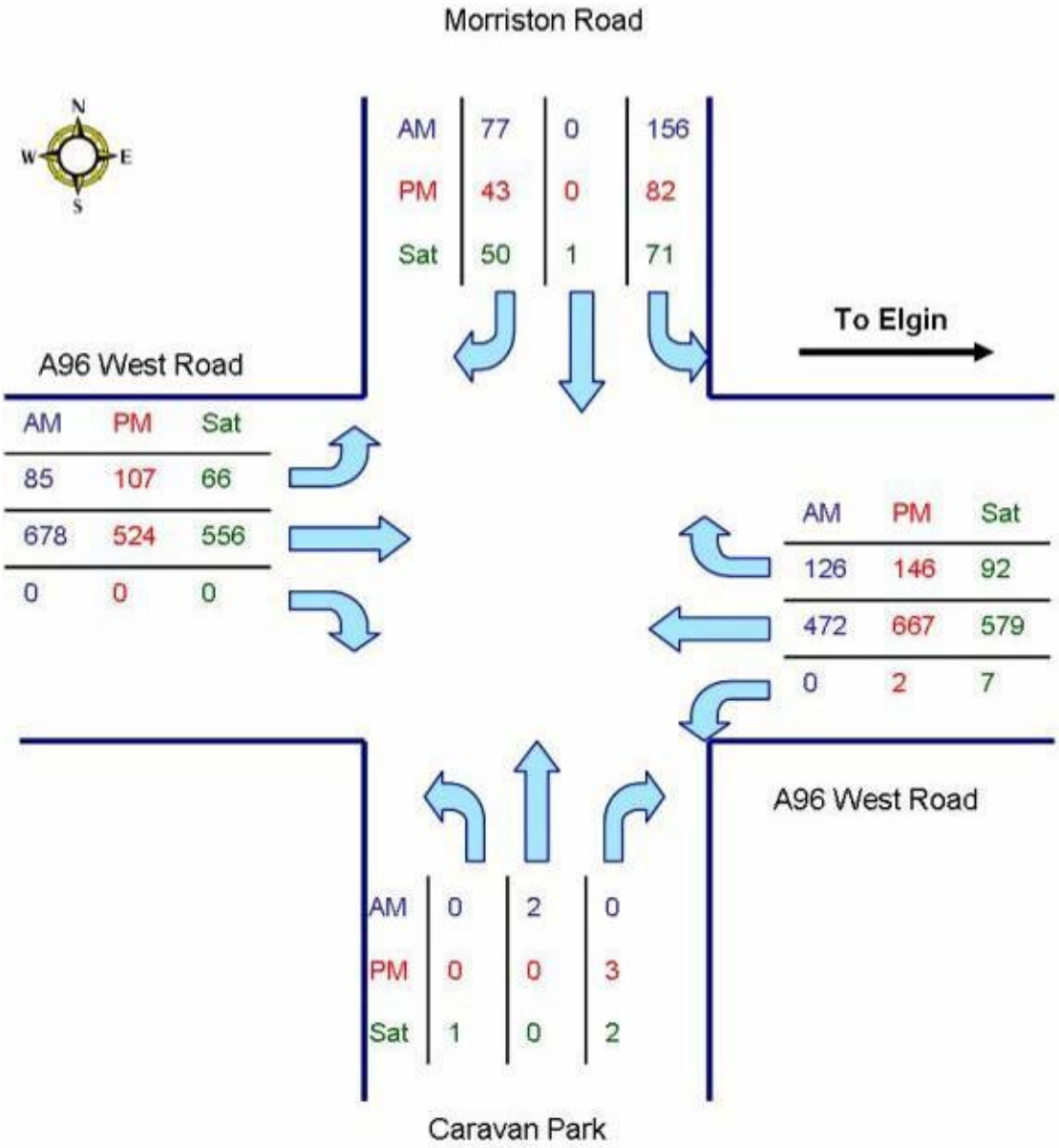
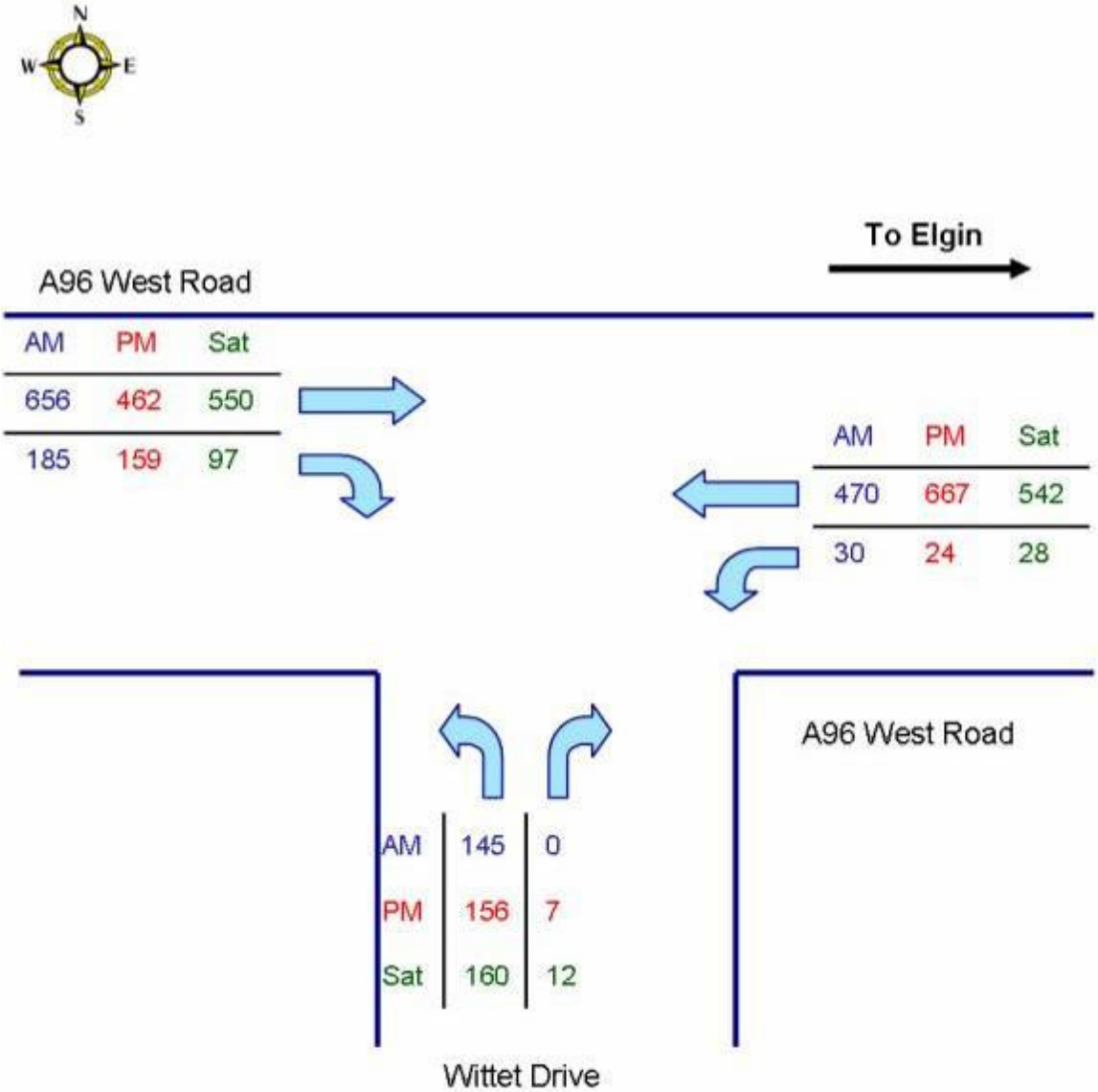


Figure D1 – Junction Turning Count Location Plan

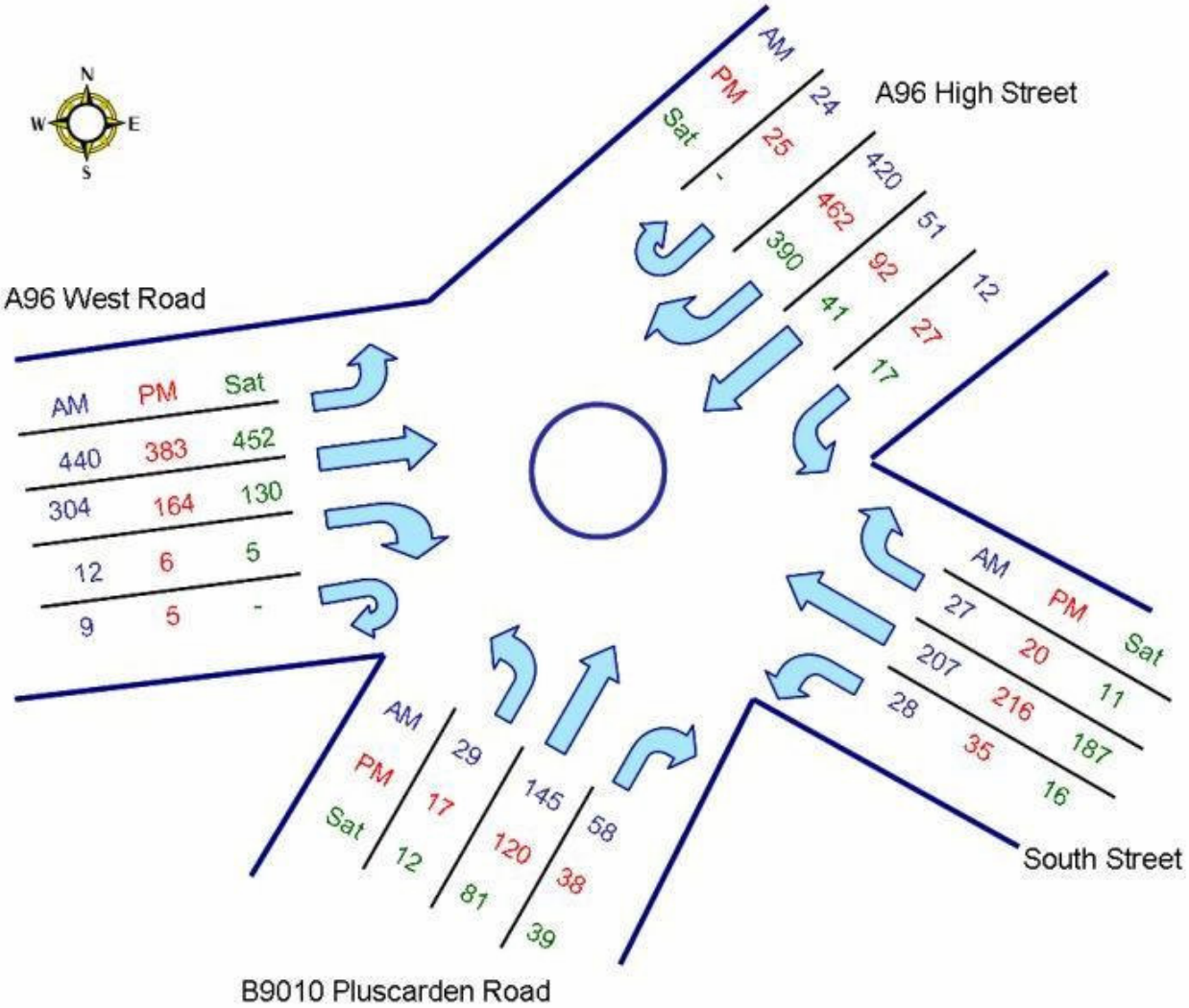
J1 – A96 West Road / Morriston Road



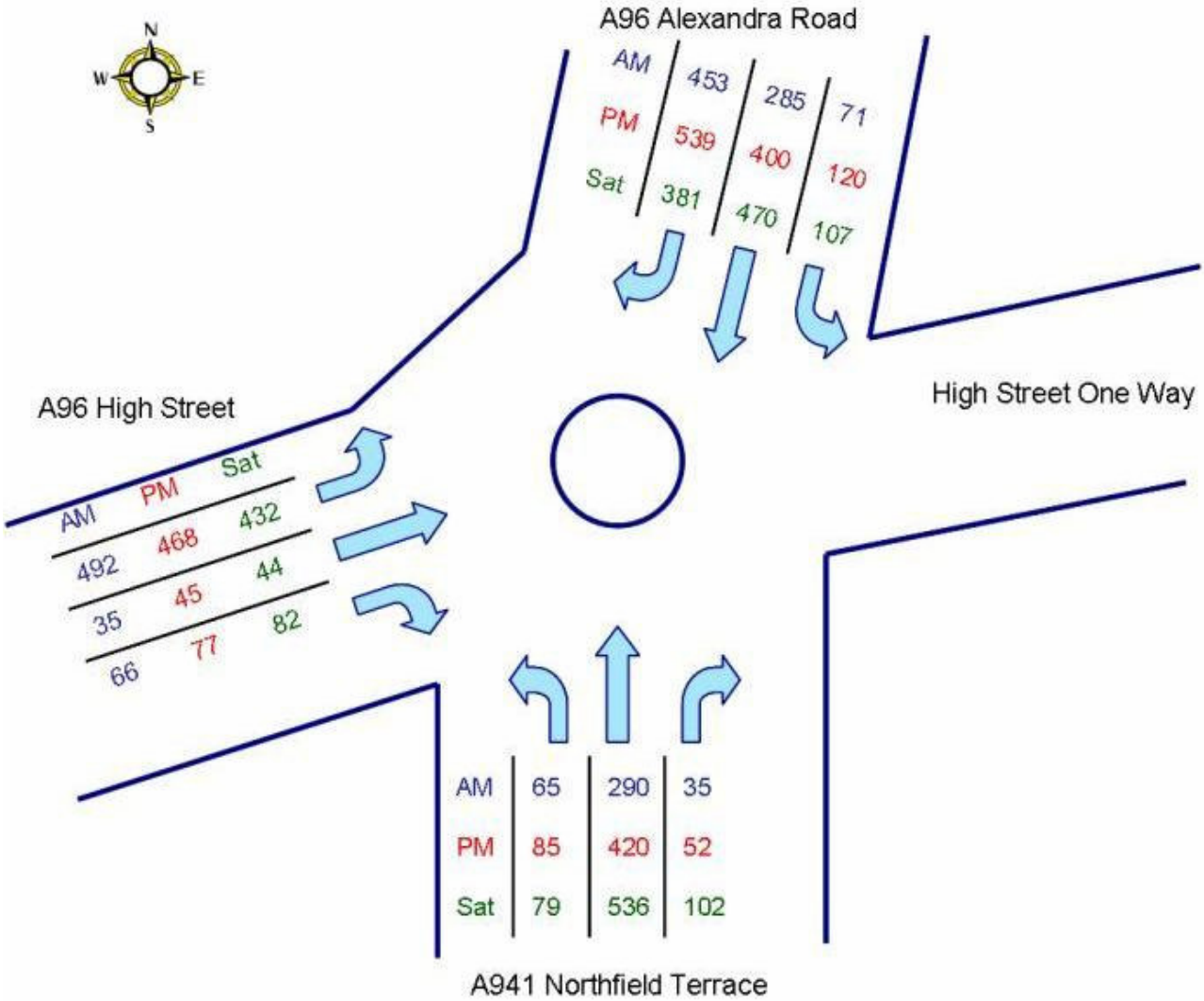
J2 – A96 West Road / Wittet Drive



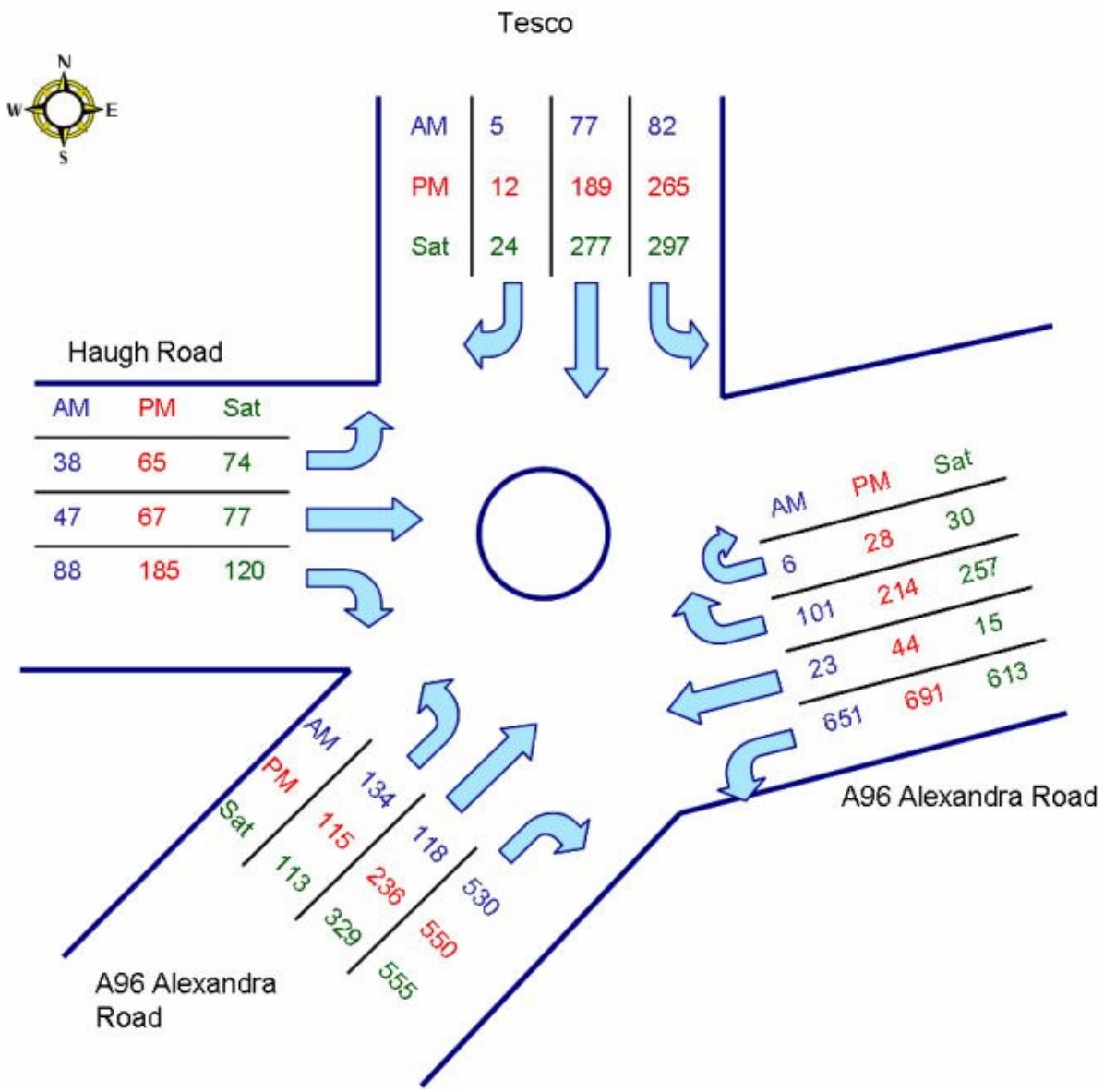
J3 – A96 West Road, Dr Gray's Hospital Roundabout



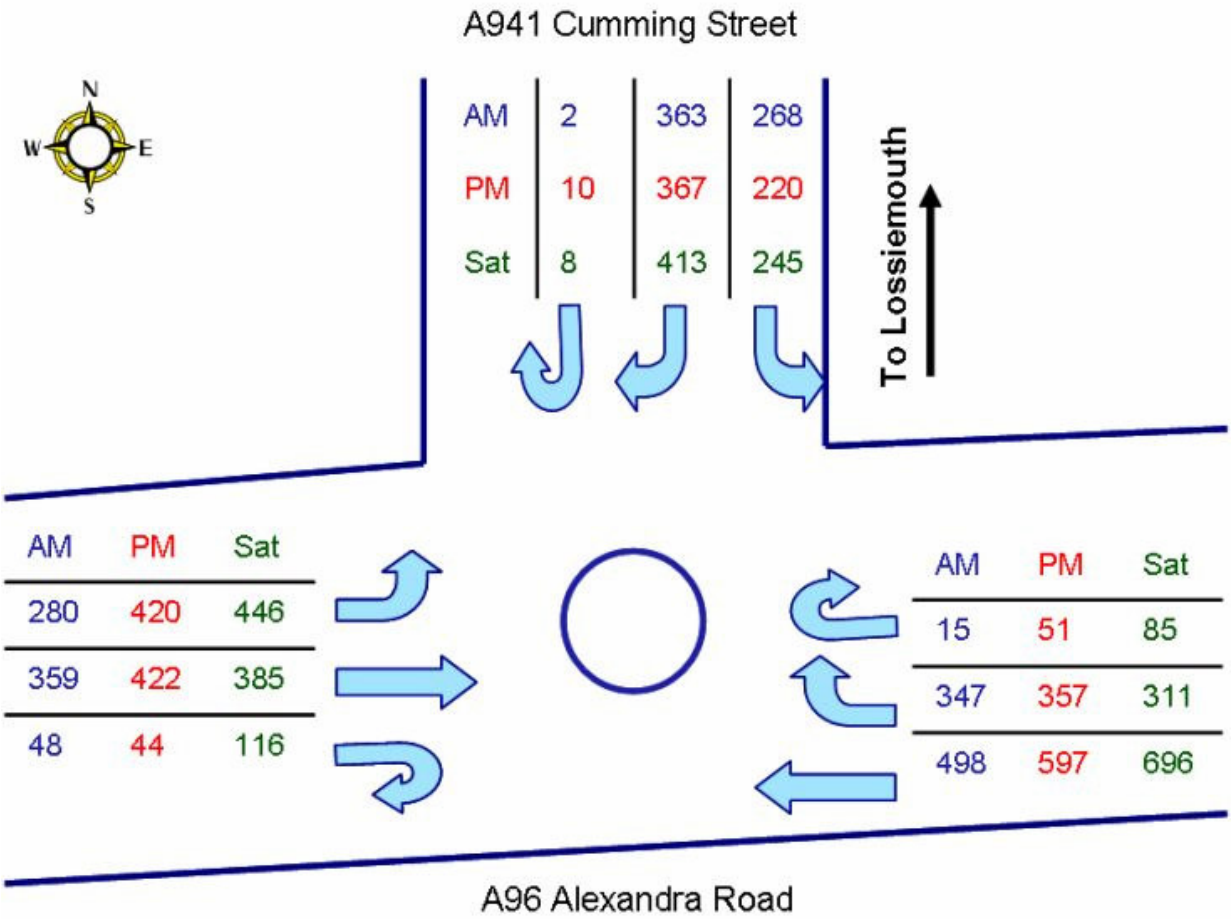
J4 – A96 Alexandra Road / A941 Northfield Terrace Roundabout



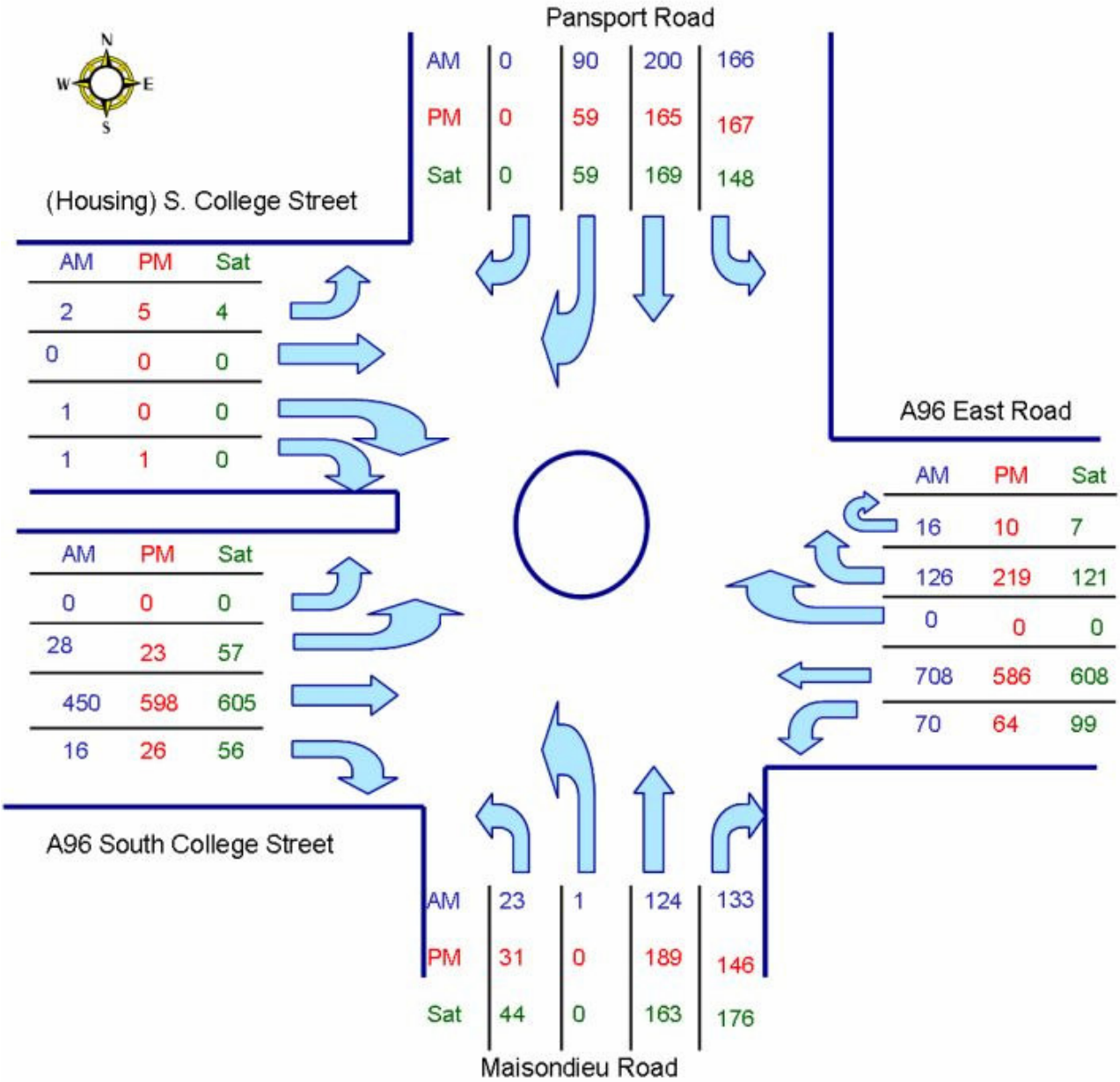
J5 – A96 Alexandra Road, Tesco Roundabout



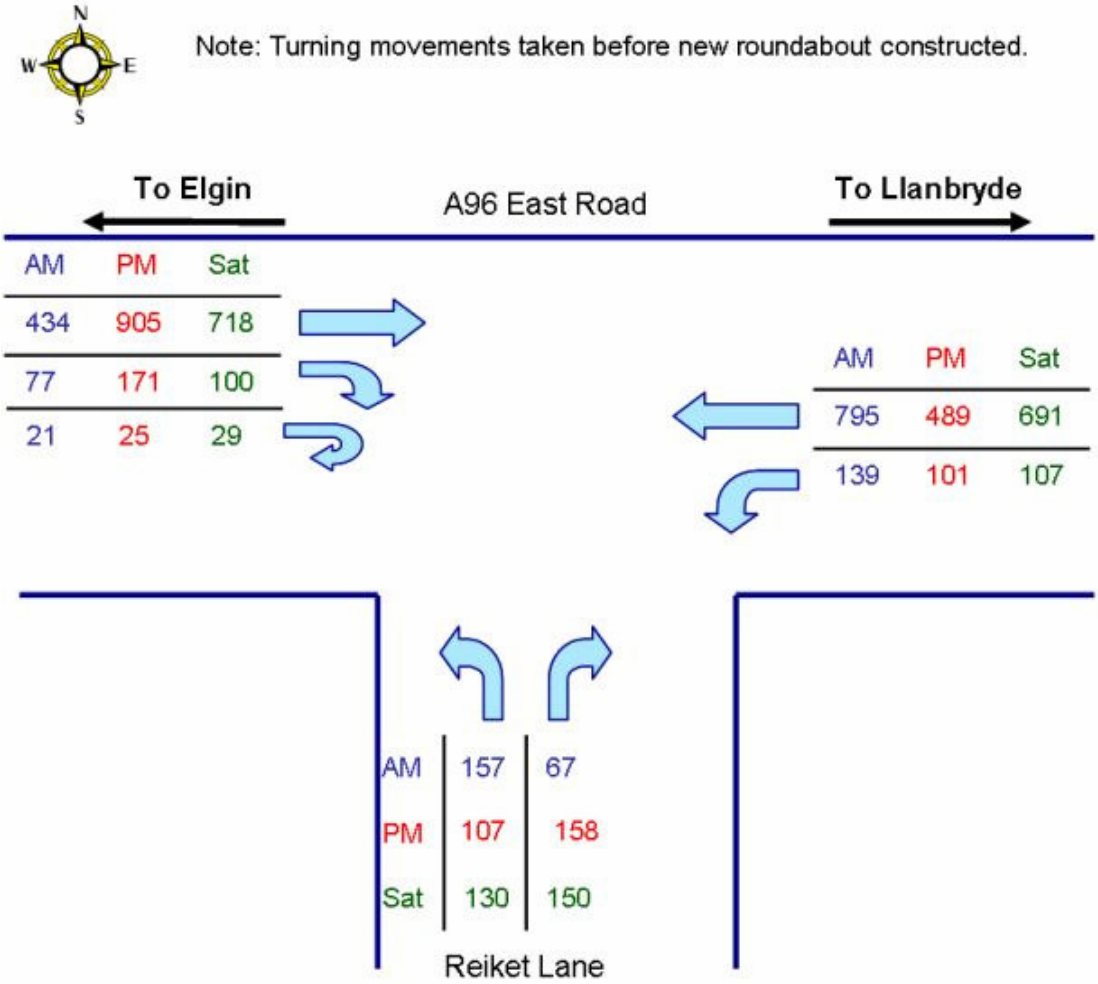
J6 – A96 Alexandra Road / A941 Cumming Street (Halford's) Roundabout



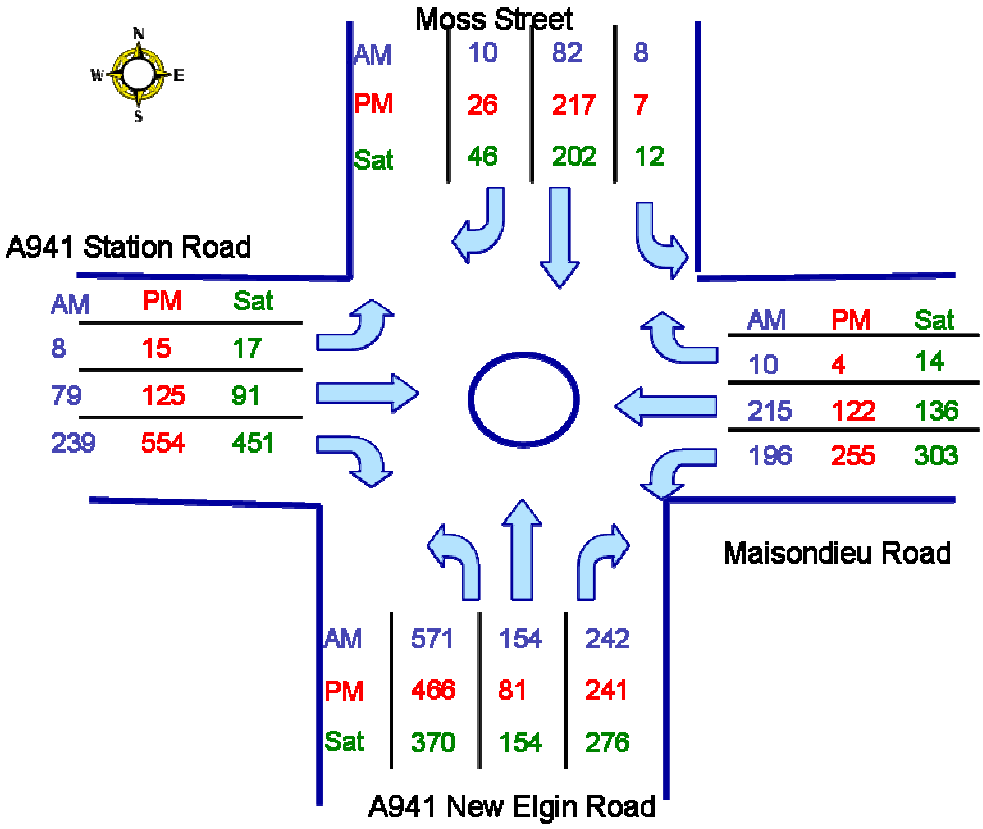
J7 – A96 East Road / Pansport Road Roundabout



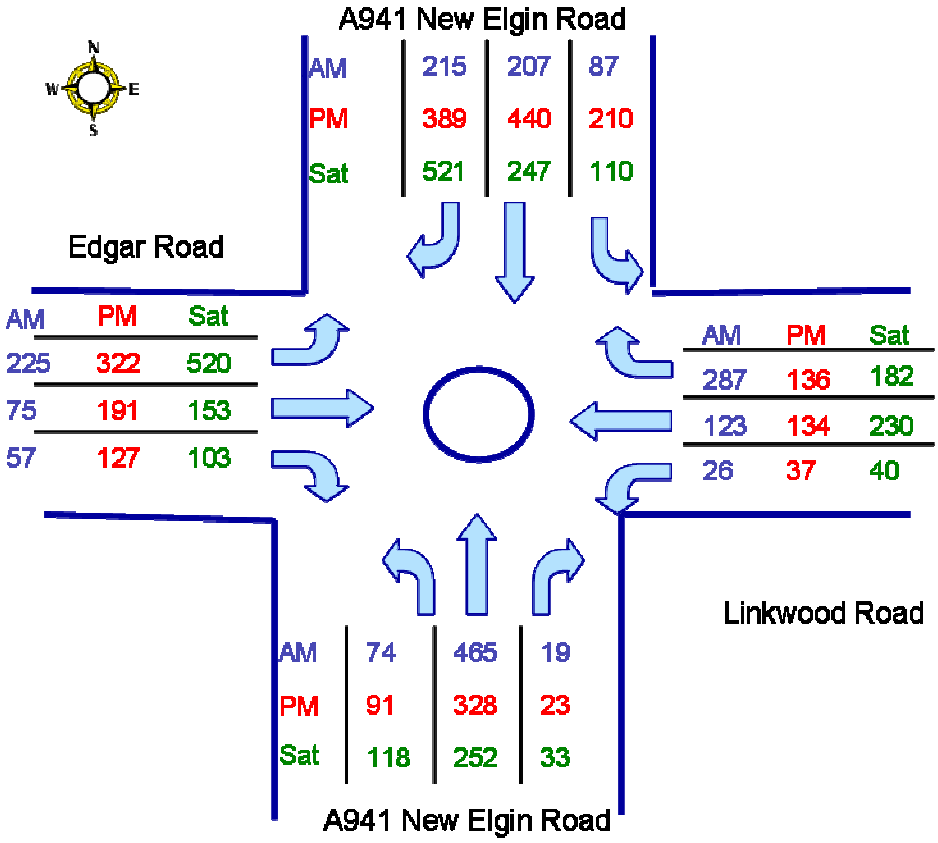
J8 – A96 East Road / Reiket Lane



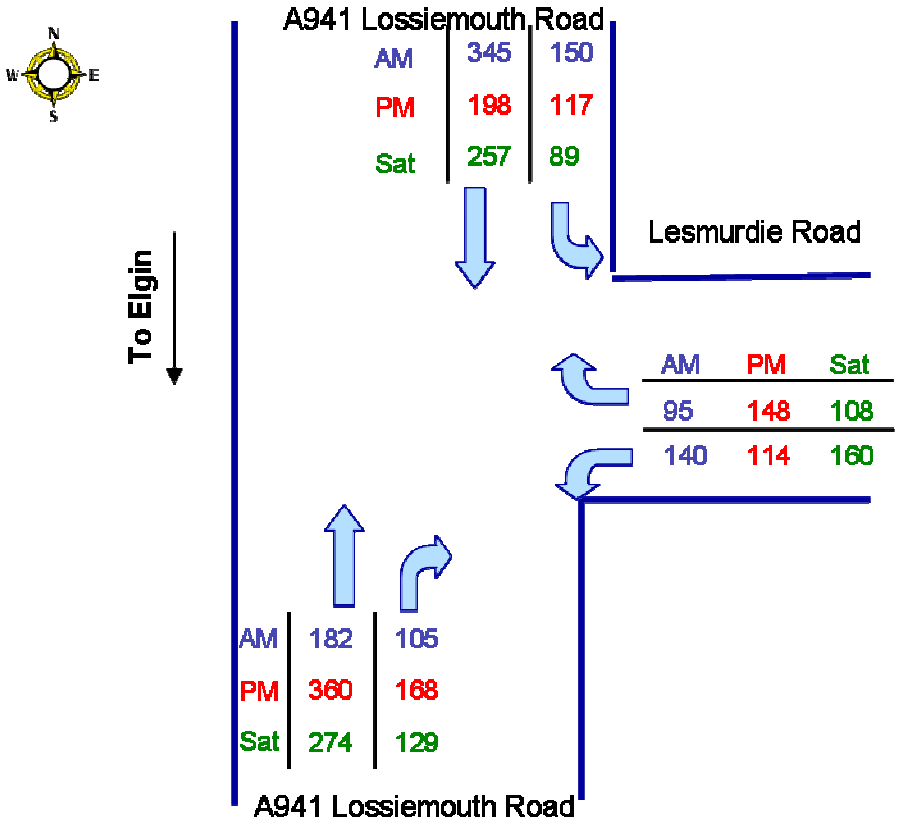
J9 – A941 Station Road / Maisondieu Road Roundabout (north of railway)



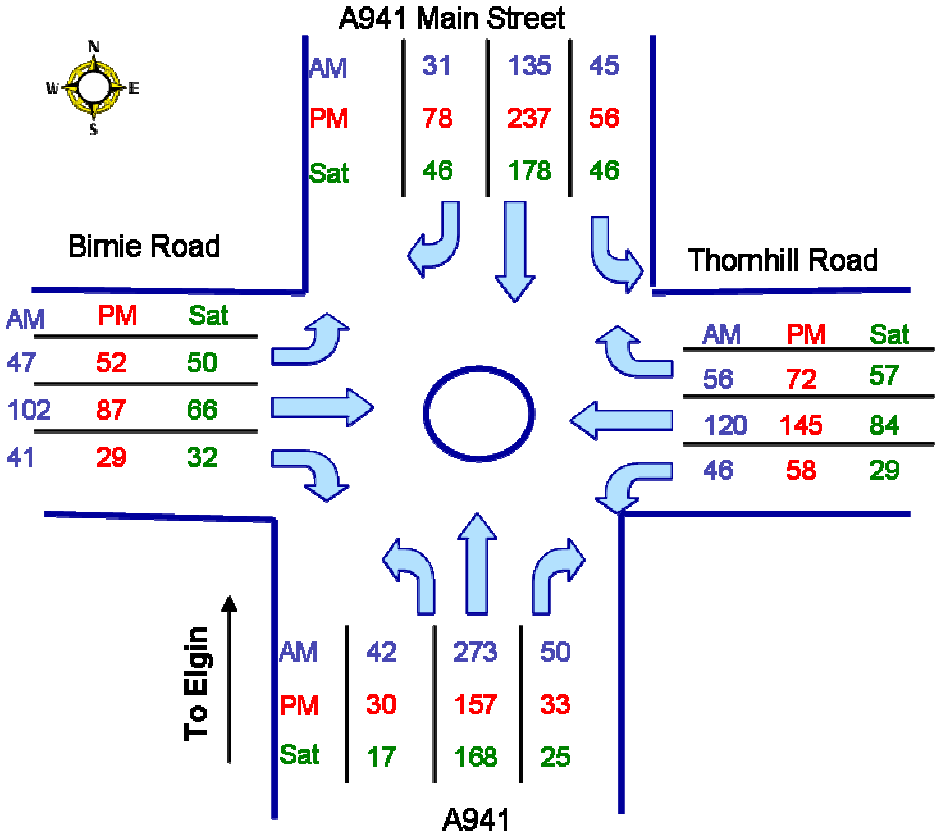
J10 – A941 New Elgin Road / Edgar Road (south of railway)



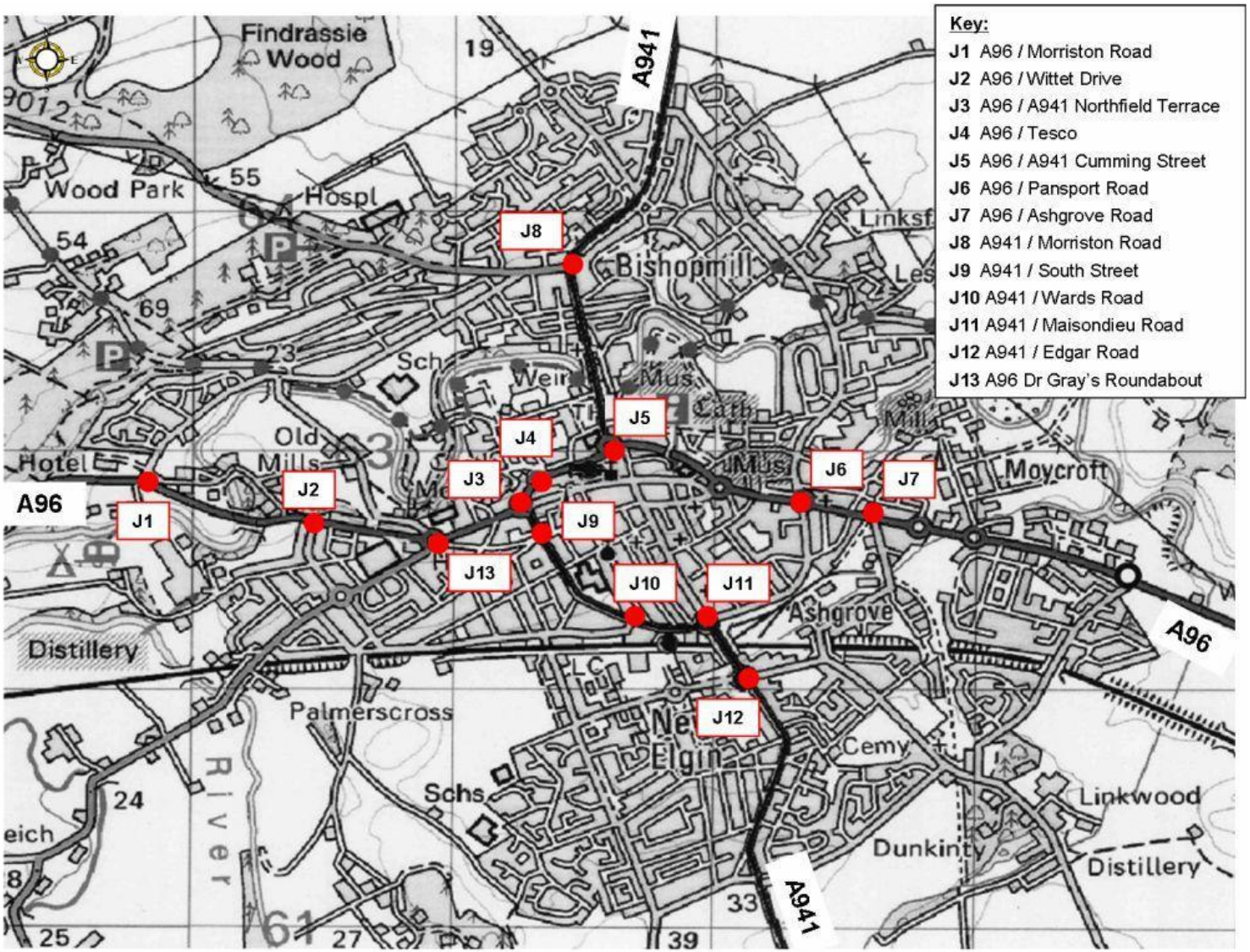
J11 – A941 Lossiemouth Road / Lesmurdie Road



J12 – A941 Main Street / Thornhill Road Roundabout



APPENDIX E PROBLEM JUNCTION LOCATION PLAN



APPENDIX F SCHEME APPRAISALS

SCHEME 1	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
NEW WEST ELGIN RAILWAY CROSSING	£10m to £50m	Majority.	A96 related works contribution.	Developer contribution possible.	High cost, high risk. Funding routes may be complex.

WORK SCOPE	DESCRIPTION
	• New south west distributor road crossing over the railway and associated infrastructure works; • Road signs and markings to promote the use of this alternative route to the south; and • Pedestrian and cyclist facilities, including designated crossing points. • Investigate options for connection to the A96 at Morriston Road or Wittet Drive.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Relieves traffic at the A941 New Elgin Road junctions either side of the overbridge. Distributor road of higher standard.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Link will open up designated development land, access to Edgar Road retail/commercial development area and access to Elgin High School.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Improves distribution and reduces road / rail conflict when used in preference to the level crossing. Removes A96 West /A941 South traffic from the busy town centre.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact	Visual impact on landscape, loss of green space, possible river crossing depending on route chosen, increased noise level in the area.	General minor safety issues related to a new traffic route.			
	No benefit or impact				Limited benefits.	
	Minor benefit	Relieving city centre traffic volumes, better traffic flow contributes to lower noise & emissions.	Use of alternative route reduces the number vehicles in the town centre and therefore the likelihood of accidents. The new road is to a better standard than the existing. Opportunity for grade separation.		Improves access to high school and sport facilities which promotes government policy objectives. Integrates Elgin communities north and south of the railway line to the west.	
	Moderate benefit			Reduces distance travelled, journey times and through traffic in Elgin centre. Improves access to existing and planned developments in south Elgin.		Access to developments and the school improved. Provides new distributor route for south west Elgin.
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Rail and river crossing, ground conditions and environmental impact are all technical constraints with a potential to raise the scheme costs. These will affect route selection.
	Operational	Scheme has the potential to improve the A96 Alexandra Road and A941 New Elgin Road junction operation by relieving their flows and redistributing traffic.
	Financial	The scheme is a high priority for Moray Council but the scheme cost is a significant constraint as it is beyond the Council budget and funding routes seem difficult.
	Public	Localised opposition may be encountered by residents in the vicinity of the works and the final scheme. However, the benefits to the wider community and their support of the scheme are expected to be significantly greater.

APPRAISAL SUMMARY

This intervention has a significant capital cost associated with its delivery and substantial benefits will be required to provide a positive BCR. There are also many technical risks that require further detailed study. This route would function as the south-west distributor corridor and its principal function would be to relieve current and future issues at the main railway crossing on the A941 and its associated junctions. The need and timescale for delivery of this option is most obviously associated with the point at which operation of this existing junction complex becomes unacceptable. It is also linked with further significant expansion (either residential, commercial or industrial) in the south of the town. The issue of whether to link into Wittet Drive or Morriston Road is significant both in terms of supporting the establishment of a clear distributor road layout, but also in terms of the promotability and affordability of the scheme.

SCHEME 2	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
MORRISTON ROAD	£1m to £2.5m	Majority.	A96 related works contribution.	Developer contribution possible.	Cost subject to final proposal & public utility diversions.

WORK SCOPE	DESCRIPTION
	• Junction improvements at A96 / Morriston Road and A941 / Morriston Road; • Road signs and markings to promote the use of this alternative route linking the A96 West and A941 North; • Pedestrian and cyclist facilities, including designated crossing points; • Morriston Road link upgrade to distributor standard; and • Review of existing junctions along the link.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Relieves traffic at the A96 Alexandra Road junctions. Distributor road of higher standard. Dedicated pedestrian and cyclist provisions.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Improves connectivity between areas served by the A96 West, North Elgin and Lossiemouth. New distributor road provides better distribution of traffic.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Removes A96 West /A941 North traffic from the busy town centre. Pedestrian and cyclist facilities reduce conflicts with motorised traffic.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact				Neutral.	
	Minor benefit	Relieving city centre traffic volumes, particularly A96 Alexandra Rd, better traffic flow contributing to reduced emissions.		Benefits through improved journey times.		Development benefits through new distributor road and improvement to the A941 junction. Improved road standard past Elgin Academy on Morriston Road.
	Moderate benefit		Improved safety at the A96 and A941 junctions and improved pedestrian and cyclist facilities. Use of this alternative route reduces the number vehicles in the town centre and therefore the likelihood of accidents. The new road is to a better standard than the existing.			
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Public utilities at either end may be an issue. Caravan Park land at A96 junction is owned by Moray Council.
	Operational	There are no identified operational issues associated with this intervention.
	Financial	Public utilities diversions could significantly impact on the scheme cost.
	Public	Young primary students crossing Morriston Road at primary school at increased traffic levels, however improved vehicle and pedestrian facilities should take this into account. Benefit as public perception of the A941 Morriston Road junction is poor and improvement is likely to be welcomed. A Structural Maintenance Scheme at A96 / Morriston Road junction will be undertaken this financial year, therefore, improvements soon after may be criticised by the general public.

APPRAISAL SUMMARY

This intervention makes best use of existing infrastructure by strengthening the role of Morriston Road as the north-west distributor route linking the A96 (west) and the A941 (north). The reference case includes sognalisation of the A941 / Morriston Road junction which is viewed as an interim junction improvement measure. The investigation of alternate proposal is still considered necessary for the long term operation of the junction and distributor. It is likely that a staged delivery of this intervention would be undertaken. Improving the functionality of this route would allow traffic to bypass the existing conflict areas in the central part of the A96. This is only likely to be fully realised once junctions at either end have been upgraded to provide sufficient opportunities for turning traffic. This intervention fits well in to the overall structure of a future delivery plan.

SCHEME 3	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
LESMURDIE ROAD	£100k to £500k	Full cost.	None anticipated.	None anticipated.	

WORK SCOPE	DESCRIPTION
	• Traffic signals at A941 / Lesmurdie Road junction; • Road signs and markings to promote the use of this alternative route linking the A96 East and A941 North; • Pedestrian and cyclist facilities, investigation of designated crossing points; • Link upgrade to Lesmurdie Road; • Review of existing junctions along the link; and • Traffic Regulation Order (TRO) banning on street parking in key areas.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Relieves traffic at the A96 Alexandra Road junctions. Distributor road of higher standard. Dedicated pedestrian and cyclist provisions.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Improves connectivity between areas served by the A96 West, North Elgin and Lossiemouth. New distributor road provides better distribution of traffic.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Removes A96 West /A941 North traffic from the busy town centre. Pedestrian and cyclist facilities reduce conflicts with motorised traffic.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact		Increased traffic flow on Lesmurdie Road and Pansport Road may lead to increased conflict at frontage accesses.			
	No benefit or impact				Neutral.	Neutral.
	Minor benefit	Relieving city centre traffic volumes, particularly A96 Alexandra Rd and A96 S. College St, better traffic flow contributing to reduced emissions.	Improved safety at the A96 and A941 junctions and improved pedestrian and cyclist facilities. Use of this alternative route reduces the number vehicles in the town centre and therefore the likelihood of accidents. The new road is a better standard than the existing.	Benefits through improved journey times.		
	Moderate benefit					
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Strongly influenced by Pansport Roundabout upgrade to improve access to and from the A96 and establish Lesmurdie Road as an A941 North to A96 East Elgin distributor road. This junction currently exhibits queuing. A TRO would be required to prohibit on street parking for the road to be upgraded to distributor standard.
	Operational	The use of Lesmurdie Road as an alternative North / East route would increase the traffic flows to and from Pansport Road at the A96 Pansport roundabout. Should the existing problems at Pansport roundabout persist, it is unlikely that motorists would adopt this new distributor route.
	Financial	The dependency of this proposal on the A96 East Road scheme which is banded as a major cost scheme with potentially complex funding routes constrains the implementation of this low cost band scheme.
	Public	At present on street parking is observed, there may be objection to a TRO prohibiting this. Additional pedestrian crossing facilities are anticipated to be popular with the local community. Properties fronting Lesmurdie / Pansport Road may object to the additional traffic.

APPRAISAL SUMMARY

While this option would strengthen the role of Lesmurdie Road as the north-east sector distributor route, it would continue to join the A96 at Pansport roundabout. This junction is located relatively close to the central area in comparison to other sector distributors, and its ability to significantly lessen the impact of traffic on critical parts of the network is therefore limited. It would however perform well as part of a wider improvement at Pansport were this to be taken forward.

SCHEME 4	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
A96 WITTET DRIVE	£100k to £500k	Wittet Drive associated works contribution.	Majority.	Developer contributions possible.	Cost subject to land acquisition and final design option.

WORK SCOPE	DESCRIPTION
	• Junction improvement and associated works. Investigate right turn ghost island, new roundabout, new roundabout at Sherrifmill Road and wall demolition options.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Improves safety and reliability through junction layout amendments and accommodating right turn movements.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.		
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Reduces the conflict between local and strategic right turn / straight through traffic movements.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact	Neutral		Neutral	Neutral	Neutral
	Minor benefit					
	Moderate benefit		Would address the significant visibility constraints on the junction and reduce the incidence of unexpected queuing on the trunk road.			
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Likely to be utility issues in this location. Land acquisition process could be required.
	Operational	There are no identified operational issues associated with this intervention.
	Financial	Land acquisition may increase cost by approximately £1.5m for the roundabout and right turn ghost island options.
	Public	This intervention is likely to receive support from the public on a localised basis.

APPRAISAL SUMMARY

This option addresses a largely localised issue at Wittet Drive, and performs well in terms of road safety but does not significantly impact on other criteria; either positively or negatively. The delivery of this option is linked with ongoing discussions to improve the junction at Wittet Drive through the provision of traffic signals. If this were to be implemented it would go some way to addressing the issues at this location. A further enhancement, as indicated in this intervention, would not offer signficant benefits at this time. It should however be examined as an integral part of any future western cross-railway link, as a connection into Wittet Drive would require a step-change in junction provision, beyond that of a simple traffic signal layout.

SCHEME 5	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
A96 ALEXANDRA ROAD	£1m to £2.5m or £5m to £10m	None anticipated.	Full cost.	None anticipated.	Cost range depends on final design and scope.

WORK SCOPE	DESCRIPTION
	• Investigate re-design of A96 / Tesco Roundabout including re-configuration to three arms. • Investigate geometric improvements to A96 / North Street junction and left turn only from North Street (except buses). • Re-design A96 / Halfords Roundabout to incorporate bus lane and / or car park access; • Investigate an additional eastbound lane on the A96 from Halford's Roundabout to Tesco's Roundabout; • Road signs and markings to reduce driver confusion; and • Improvements to pedestrian and cyclist facilities along and across Alexandra Road.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	Yes	One of the two most critical sections of the route. Improvements will have a visible impact on traffic in Elgin town centre.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	Yes	Improved traffic movement in the town centre will support accessibility to central facilities. Improved access to Elgin Bus Station improves regional connectivity.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	Yes	Proposed improvements would manage bus, vehicle, pedestrian, cyclist and junction conflicts on Alexandra Road.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact					
	Minor benefit		Improved safety due to improved pedestrian and cyclist facilities. The new road will be a better standard than the existing.		Improved integration due to bus station access improvements.	Improved access to public focal points such as the bus station, St Giles Shopping Centre, the Elgin Town Hall, and the central car parks.
	Moderate benefit	Relieving congestion on the A96 Alexandra Rd which has the second highest traffic flow on the A96 in Elgin. Better traffic flow will contribute to reduced emissions.		Benefits through improved journey times. Promotes accessibility of town centre businesses.		
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	The splitter island on the A96 westbound approach to Halfords Roundabout is to be removed and resurfacing of the roundabout to be carried out this financial year. Numerous known public utilities in the area. The built environment is heavily constrained. Need to maintain bus station access and A96 flow, alternative routes exist but their suitability needs to be assessed. Pedestrian crossing and bus lane review have been investigated by BEAR previously. Underpass, overbridge and fronting properties provide physical constraint.
	Operational	Bus Station access issues and consultation with bus service providers is required.
	Financial	Public utilities, structural design, land acquisition, final junction and link proposals can significantly increase cost into the 'major cost with complex
	Public	Significant public support anticipated for any improvement to stagnant traffic in the town centre, especially from the Business sector.

APPRAISAL SUMMARY

This scheme performs relatively well in terms of the STAG criteria and directly addresses the areas of constraint on the A96 through the provision of additional operational capacity. The intervention continues to concentrate traffic movements into the central area, and as such does not perhaps lend itself to providing enhancements to the network that would continue to provide improved conditions for a significant period of time. This suggests that improvements at the lower end of the investment scale could achieve an effective BCR, but further quantitative work, including modelling, would be required to establish this.

SCHEME 6	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
A96 EAST ROAD	£5m to £10m	None anticipated.	Majority.	Developer contribution possible.	Land acquisition is crucial to the scheme.

WORK SCOPE	DESCRIPTION
	• A96 / Pansport Road roundabout re-design and investigate possible signalisation; • A96 / Ashgrove Road new roundabout or signalisation at junction; • A96 / Linkwood Way signalisation and associated works or connection of stub arm of A96/Reiket Lane roundabout to Linkwood Place; • A96 East Road capacity improvements to existing roundabouts; • Pedestrian and cyclist facilities, including designated crossing points; • Link upgrade and review of all existing junctions as required; and • Road signs and markings to reduce driver confusion.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	Yes	One of the two most critical section of the route. Improvements will have a visible impact on traffic in Elgin town centre.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	Yes	Improved traffic movement in the area will support accessibility to numerous business and facilities in the area.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	Yes	Proposed improvements to manage vehicle, pedestrian, cyclist and junction conflicts on East Road.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact	Land take to facilitate link and junction improvements will convert gardens to hard surfaced areas. Increased noise levels at properties moved closer to road through widening.				
	No benefit or impact				Neutral	
	Minor benefit		Improved safety due to improved traffic flow, and new pedestrian and cyclist facilities. The new road will be of a better standard than the existing.			Improved access, pedestrian and cyclist provisions to work destinations and facilities serviced by A96 East Road. This includes east and south Elgin, East End Primary School and Andersons Elderly Home.
	Moderate benefit	Relieving congestion on A96 East Rd which has the highest traffic flow on the A96 in Elgin. Better traffic flow will contribute to reduced emissions.		Benefits through improved journey times. Promotes accessibility of south and east Elgin businesses, retail and industrial estates to the work force and consumer markets.		
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Pansport Junction amendments require land acquisition. A small retaining wall to the North East bounds church grounds and a retaining wall is found on the south west corner of the junction along the boundary of Anderson's Care Home. East Road holds the highest traffic flows observed on the A96 in Elgin. Extensive services lie beneath this section of the trunk road. It is anticipated that land acquisition through CPO will be required. Ashgrove Road junction improvements are a planning condition for nearby development.
	Operational	The use of UTC and ITS is not appropriate for the trunk road in this area by causing regular interruptions to A96 traffic flow. No other sections of the A96 in Elgin are signalised.
	Financial	Land acquisition and structural design will significantly impact the cost of this Transport Scotland funded scheme. Ashgrove Road works have been associated with planning conditions for a nearby development. Opportunity for developer the scheme to be developer funded.
	Public	Public opposition by parties affected by CPO but wider support anticipated for scheme due to the economic benefits.

APPRAISAL SUMMARY

This scheme performs relatively well in terms of the STAG criteria and directly addresses the areas of constraint on the A96 through the provision of additional operational capacity. The intervention continues to concentrate traffic movements into the central area, and as such does not perhaps lend itself to providing enhancements to the network that would continue to provide improved conditions for a significant period of time. This suggests that improvements at the lower end of the investment scale could achieve an effective BCR, but further quantitative work including modelling would be required to establish this. Any upgrading to Pansport roundabout should also consider link-based enhancements to Lesmurdie Road to gain most benefits of the upgrade and reduce loading on other junctions.

SCHEME 7	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
PEDESTRIAN & CYCLIST FACILITIES	£1m to £2.5m	Majority.	A96 related works contribution.	Developer contributions possible.	Cost range and cost share depends on route selection.

WORK SCOPE	DESCRIPTION
	• Improvement of existing and provision of new pedestrian and cyclist links and cyclist parking to the town centre, retail developments and schools in Elgin; • Investigate the provision of new pedestrian and cyclist crossing facilities over the railway line; • Review and re-design, where necessary, crossings on the A96 in Elgin; • Provision of an east to west cycle route through central Elgin; • Provision of destination / directional signing on cycle and pedestrian routes; and • Implementing DDA compliant walking and cycle routes where possible.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Improves safety for non-motorised users through provision of enhanced facilities. Improves traffic flow through modal shift.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Improves accessibility to main trip generators for pedestrians and cyclists.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Reduces conflict between motorised and non-motorised modes and movements.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact	Land acquisition costs and use of green space to form offline hard surfaced routes.				
	No benefit or impact					
	Minor benefit	Modal shift to sustainable transport.	Improved safety for non-motorised road users.	Improved accessibility to retail, educational and employment facilities in Elgin. Benefits through improved journey times due to modal shift.	Integrated cycle and pedestrian network to trip generators within Elgin and Moray.	
	Moderate benefit					Improved access to local facilities in Elgin, including benefits through DDA compliance.
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Public utilities, the constrained built environment, topography, land availability and the railway line are likely to constrain designs and add to scheme costs. Flood risk issues and the Flood Alleviation project may reduce route options.
	Operational	There are no identified operational issues associated with this intervention.
	Financial	Potential European Funding. Large stakeholder base, including railway authority, Moray Council, Transport Scotland and 3rd party developers, may complicate funding routes.
	Public	Cycling above the National Average. The local community and Moray Council actively promote walking and cycling. Support anticipated.

APPRAISAL SUMMARY

The enhancement of existing and provision of new facilities would provide an alternative to the car for many journeys through the promotion of active modes. The evidence from Forres suggests that there is general support for cycling as an effective alternative mode, with topography contributing to the good level of cycle usage. In order to make a signficant impact on the current performance issues, active modes would need to win a large proportion of the shorter distance journeys made within the town and its immediate environs. It is relatively unlikely that this would be possible and so this intervention does not form part of the overall framework, however it is noted that there may be potential for Elgin to engage in a 'velo-city' concept to act as a pathfinder trial for large scale cycle/pedestrian enhancements, should such an opportunity and funding stream arise.

SCHEME 8	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
TRAFFIC MANAGEMENT	Depends on adopted technology and land take.	Scope dependent.	Scope dependent.	Scope dependent.	Cost range depends on technology and land take.

WORK SCOPE	DESCRIPTION
	• Investigate the speed limit regime in Elgin; • UTC implementation at key junctions in congested areas; • ITS solutions in congested areas, for bus priority and demand management; and • Review and re-design of pedestrian and cyclist crossings on the A96 in Elgin

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Demand responsive transport network and designated crossing facilities for non-motorised users.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.		Neutral.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Signalisation to manage the conflict between various traffic movements at junctions. Bus priority to manage conflict between different transport modes. Crossing facilities to manage conflict between general traffic, cyclists and pedestrians.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact	Introduces regular stop and starts which may increase emissions. Uptake of land for road construction.		May increase journey times. Depending on technology used may be expensive.		
	No benefit or impact				Neutral.	Neutral.
	Minor benefit	Bus priority may promote use of buses in preference to cars.				
	Moderate benefit		Reduces conflicts and accommodates demand.			
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Possible conflicts with buried services. Additional lanes required for signalisation may be difficult to implement within the constrained built environment.
	Operational	Bus priority measures need to be supported by bus service providers and may require instrumentation of buses which could be costly. Introduces controlled queuing on all junction arms which may increase journey times for A96 through traffic but improve gaps for right turners.
	Financial	Funding may include developer and bus service provider contributions. The type of technology used and the land take through CPO would significantly impact the scheme costs. It is not possible to provide a cost range at this time.
	Public	Public objection to CPO anticipated.

APPRAISAL SUMMARY

An order has been passed to have a constant 30mph speed limit on the A96 through Elgin. UTC traffic signals were deemed inappropriate for the trunk road by members of the workshop team. The A96 through Elgin has no junction signalisation at present, and to impose signals would have a knock on effect on the local road network and introduce forced queuing for all arms at junctions, which would be significantly impacted by the lack of queue storage. The local transport policy has been to avoid signalisation in the past. Signalisation is likely to require increased land take which would significantly raise the cost of improvements. Bus priority and re-design of pedestrian/cyclist crossings are addressed in other schemes. This intervention is not expected to provide a useful part of the overall framework, therefore, this scheme will not be progressed further.

SCHEME 9	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
LOCAL BUS SERVICES	3RD PARTY DEPENDENT	Local infrastructure contribution.	Associated A96 works contribution.	Bus Service Provider contributions.	Funding and cost share requires consultation.

WORK SCOPE	DESCRIPTION
	• Bus priority including use of ITS solutions; • Investigate and promote a hierarchy of bus services to possibly include mini park and ride; • Timetabling suitable to commuter, leisure and retail demand and link between long distance services; • Bus station re-design or re-location; • Improved bus stop facilities, including real time passenger information systems; and

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Reliable bus services and secure attractive facilities.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Improved public transport access to all employment, educational, recreational and commercial facilities in Elgin and the wider community in Moray.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Encourage modal shift from private cars to buses. Address conflicts between buses, passengers and mainstream traffic.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact					
	Minor benefit	Modal shift to sustainable public transport.	Improved passenger safety and security through better facilities. Reduced traffic levels reducing likelihood of accidents.	Improved accessibility to retail, educational and employment facilities in Elgin. Benefits through improved journey times.		
	Moderate benefit				Integrated bus services and public transport links within Elgin and Moray.	Improved access to local facilities in Elgin for the wider Moray community. Potential for DDA compliant bus station / stop facilities and services.
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	Bus service providers are required to sign up to any suggested improvements, for example ITS solutions requiring instrumentation of buses would require service provider support and funding. Moving and re-designing the site are options both constrained by the existing built environment and logistics of the bus service routes. Some information regarding passenger services is commercially sensitive and may not be readily available.
	Operational	Bus station access to be maintained throughout works. Any diversions or proposals would need to be approved by bus operators.
	Financial	Opportunity for Moray Council to bid for funding in 2011. Developer contributions could be sought. Quality contract likely to be utilised.
	Public	Improved perception of bus services would encourage modal shift and sustainable transport.

APPRAISAL SUMMARY

This intervention provides for improvement to bus services and associated facilities such that it would improve accessibility and gain modal shift from the private car. While the intervention has the potential to perform well, it does rely on active involvement from the bus sector and potentially significant additional revenue funding to support services. The road network makes it unlikely that significant levels of bus priority could be provided, meaning that buses would have similar journey times to cars and no ability to bypass congestion. This means that fare levels and accessibility would be the primary reasons for modal shift. The level of investment to achieve this would be out-of-step with the benefits that could be achieved in terms of modal shift. Notwithstanding this, the relocation of the bus station could form part of a wider scheme. This issue should be given further consideration within the LTS and the Development Plan as well as informing the re-tendering of local bus services.

SCHEME 10	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
INTEGRATED RAIL & BUS	3RD PARTY DEPENDENT	Subject to consultation.	None anticipated.	Majority.	Funding and cost share requires consultation.

WORK SCOPE	DESCRIPTION
	• Provision and promotion of a railway station to bus station shuttle service; • Linked bus and rail timetabling suitable to demand; • Promotion of public transport services; and • Shuttle bus timetable to suit bus.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Improved reliability of all public transport services.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Linked rail and bus services catering for a larger combined market and providing access to a wider area than when considered independently. Regular and reliable public transport services promoting modal shift.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Integration of different transport modes.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact	Neutral due to prohibitive constraints.	Neutral.	Neutral.		
	Minor benefit	Modal shift to more sustainable transport modes, relieving roads of a small proportion of private cars.		Benefits through increased catchment and reduction in private car use.	Integration between different modes and the various catchments and areas served.	Improved accessibility to both rail and bus services. Improved links to educational, recreational, employment and retail facilities. Possibility to implement and promote DDA compliant public transport travel.
	Moderate benefit					
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	There are no significant technical issues anticipated with this scheme.
	Operational	Responsibility for provision, operation and promotion of rail/bus station shuttle service to be decided between Moray Council, the rail authority and existing bus service providers.
	Financial	Operating subsidy may be required.
	Public	Positive public perception anticipated as the scheme gives more transport options and the existing lack of integration has been a point of complaint.

APPRAISAL SUMMARY

There is little evidence at present that multi-modal public transport journeys are a key demand of the transport network, and the ability of the bus network to provide adequate opportunities for multi-modal connections is limited. The provision of a shuttle bus service would perhaps be an alternative to the provision of enhanced Park-&-Ride facilities. It would, however, rely on linking into an enhanced bus network to be of significant benefit in supporting multi-modal journeys.

SCHEME 11	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
RAIL FACILITIES	3RD PARTY DEPENDENT	Contribution subject to consultation.	Aberdeen-Inverness contribution.	Majority.	Funding and cost share requires consultation.

WORK SCOPE	DESCRIPTION
	• Railway station park and ride; • Timetabling suitable to commuter, leisure and retail demand; • Improved station facilities including car park extension; • Promotion of passenger and freight rail services; and • New rail freight upload/offload machine at existing disused sidings so that goods, materials and containers can be transported directly to/from a facility within Elgin.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Improved service timetabling and reliability.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Improved access to rail services for passengers and freight.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Promoting multi-modal journeys for passengers and haulage freight.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact					
	Minor benefit	Limited opportunity for modal shift due to rurality and type of goods hauled.	Benefits through reduced traffic volumes and lower probability of rail related accidents.	Improved accessibility to retail, educational and employment facilities in Elgin and towns and cities on the line. Benefits through modal shift and possible improved journey times for all modes.	Link between HGV and rail haulage. Improved services integrating and linking the various towns and cities along the Aberdeen - Inverness railway line.	Benefit through improved public transport links to towns and cities. Park and ride may assist in accommodating rural communities. Improved access to Elgin and Moray for long distance travel.
	Moderate benefit	Relieving HGV and private car use for long distance journeys. Reduced emissions compared to road transport.		Benefits due to use of rail freight for goods transport. Access to wider consumer markets served by the line.		
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	The scheme is dependent heavily on rail authority and service provider involvement. Access to the station and rail services would need to be maintained during the works. Rail equipment would be required. Improvements to services are constrained by the single track capacity. Proposals should complement Aberdeen to Inverness committed improvements (e.g. Invernet 2 - More frequent services between Inverness and Elgin; and STPR committed schemes);
	Operational	Service improvements are constrained by the single track capacity.
	Financial	Freight subsidy may be required. Rail operation costs may be prohibitive. Incentives may be required to promote rail freight use. Rail authorities and service provider contributions are pivotal to this scheme.
	Public	The Freight Facilities Grant rules may be perceived to play against promotion of the rail freight services. The price of rail services may be prohibitive to modal shift. Improvements to passenger services and facilities are anticipated to be welcomed by the public.

APPRAISAL SUMMARY

The announced investment programme in the Aberdeen to Inverness railway line will provide a step-change in passenger services that will make rail a viable alternative for many commuter journeys. One part of the intervention that may have benefits is to enhance Park-&-Ride opportunities at the rail station, and this could be taken forward through delivery of the LTS/Development Plan. In terms of rail freight facilities, there would be benefits in considering a joint system to make the most of the gauge enhancement and existing freight terminal area.

SCHEME 12	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
REIKET LANE	<£25k	Majority.	A96 related works contribution.	Developer contribution possible.	Low cost, quick win

WORK SCOPE	DESCRIPTION
	• Road signs and markings to promote use of the new distributor route linking A96 East to A941 South, to include signing of the junctions at either end and along Reiket lane, as required.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Advisory information for road users. Relieves traffic flows at A96 Pansport and A941 Laichmoray roundabouts.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	Promotes an alternative link between A941 & A96 avoiding the town centre.
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Relieves pressure on the road network in central Elgin by improving traffic distribution in Elgin.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact				Neutral.	Neutral.
	Minor benefit	Relieving city centre traffic volumes, better traffic flow contributes to lower noise & emissions.	Use of alternative route reduces number of vehicles in the town centre and therefore the likelihood of accidents. The new road is to a better standard than the existing.	Reduced journey times. Through traffic diverted away from Elgin centre. Improved access to developments in south Elgin.		
	Moderate benefit					
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	There are no identified technical issues associated with the delivery of this intervention.
	Operational	There are no identified operational issues associated with this intervention.
	Financial	This scheme is a low cost option, involving minimum financial risks.
	Public	Possibility of objection from people affected by increased traffic flow on Reiket Lane. However, the scheme should prove popular due to relief in traffic flows in the town centre and on the other residential roads that the traffic currently uses.

APPRAISAL SUMMARY

The significant investment by Moray Council in upgrading Reiket Lane bridge, and associated works has provided a high-quality distributor road for the SE sector of Elgin. This permits traffic between the A941 (south) and the A96 (east) to connect without impacting on the town centre and identified areas of conflict. While the benefits are minor in nature, the level of cost associated with implementing the intervention is low, and it provides a significant opportunity to make best use of existing infrastructure. It also fits well as an intervention within the overall future delivery plan.

SCHEME 13	ESTIMATED COST RANGE	MC COST SHARE	TS COST SHARE	3RD PARTY COST	COMMENT
ROAD SIGNS & MARKINGS	£25k to £100k	A941 and distributor road works contribution	A96 works contribution	Developer contributions possible	

WORK SCOPE	DESCRIPTION
	• Re-design of road signs and markings in Elgin for consistency and to reduce driver confusion at junctions; • Directional signs to include location of car parks and promote existing alternative routes avoiding congested areas; and • New yellow box road markings as required.

TRANSPORT OBJECTIVES	ELGIN TRAFFIC REVIEW OBJECTIVES	SIGNIFICANTLY CONTRIBUTES TO	COMMENTS
	1. Maintain a safe and reliable transport network in and to Elgin.	**Yes**	Reduces driver confusion and improves driver awareness of routes and junction form.
	2. Improve accessibility and connectivity to support economic growth in Elgin and Moray.	**Yes**	
	3. Manage the transport network in Elgin to reduce the conflict between various transport modes and movements.	**Yes**	Management measure to reduce conflict between different movements, particularly at junctions.

QUALITATIVE ASSESSMENT STAG 1	ASSESSMENT SCALE	ENVIRONMENT	SAFETY	ECONOMY	INTEGRATION	ACCESSIBILITY & SOCIAL INCLUSION
	Major cost or negative impact					
	Moderate cost or negative impact					
	Minor cost or negative impact					
	No benefit or impact	Neutral		Neutral.	Neutral.	Neutral.
	Minor benefit	Improved traffic flow through driver awareness of routes and movements.	Reduced driver confusion. Redistribution of traffic through signing of alternative routes.	Journey time benefits through traffic redistribution.		
	Moderate benefit					
	Major benefit					

DELIVERABILITY APPRAISAL	CRITERIA	COMMENTS
	Technical	None.
	Operational	None.
	Financial	Requires funding from both Transport Scotland and Moray Council to adopt a consistent signing and lining strategy in Elgin. Developer contributions may be possible.
	Public	Scheme anticipated to be popular with the commercial sector and the general public.

APPRAISAL SUMMARY

This intervention could provide some benefits at a relatively modest expenditure. It would be most effective if linked with the enhancement of traffic distributor links to reduce pressure on the central area. In implementing this strategy, it is important that there is an overall plan for the town in terms of directional signing and an agreed hierarchy of routes.