

The Moray Council



ETM - Elgin Western Distributor Road DMRB Stage 2 Option Assessment Main Issues Report

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EXECUTIVE SUMMARY

Background

Following completion of the DMRB Stage 1 Assessment, STAG 1 Report and associated Main Issues Report, further work has been undertaken to assess the options, implications and benefits associated with a Western Distributor Road serving the south-west area of Elgin.

The second stage of the assessment process entails consideration of a number of variants within the pre-assessed corridors, allowing a preferred route to be identified. The final stage of the assessment process involves refinement of that preferred route to a level of detail enabling statutory consents to be obtained.

At this time, the second stage of work has been completed, and the findings from this work are documented in the following reports:

- A Stage 2 Option Assessment Report, prepared in accordance with the Design Manual for Roads and Bridges (DMRB) Stage 2 process;
- A Public Consultation Report, prepared following Exhibitions held in Elgin;
- A DMRB Stage 2 Option Assessment, Main Issues Report (this document), summarising the key findings from the assessment work carried out.

Alternative Options Considered

The assessment work undertaken at this time compares four options against a standard reference case. The options considered are:

- Existing Network Enhancements Option: This option is developed to evaluate the extent to which the existing road infrastructure could be developed to provide transport benefits;
- Urban (Inner) Route Option: This option assesses the implications of providing a distributor route for the south west quadrant of Elgin within the developed area;
- Rural (Outer) Route Option: This option assesses the implications of providing a distributor route for the south west quadrant of Elgin outside the developed area; and
- Rural (Inner) Route Option: This option again assesses the implications of providing a distributor route for the south west quadrant of Elgin outside the developed area, however, following the Stage 1 Assessment it was recognised that an alternative route alignment within the rural corridor could be explored with the aim of providing a more cost effective option.

The standard reference case is termed the Do-nothing scenario, which takes account of any committed improvement measures to the existing road network, including the provision of access to the housing proposed north of Edgar Road.



Key Findings: Environmental

Air quality, noise and vibration, ecology, landscape and visual impacts were assessed in relation to the Existing Network Enhancements and the Urban (Inner) Route, the results of which are summarised below

In general, the environmental impacts of the Existing Network Enhancements are less significant than those of the Urban (Inner) Route and Rural (Outer) Route, as its existing environment is already used for a transport corridor. Substantial adverse visual impacts may occur as a result of a new roundabout where the A96 meets Wittet Drive. However, these impacts could be reduced through planting to provide screening. In addition, substantial adverse noise impacts may occur at a number of properties adjacent to Wittet Drive as a result of traffic.

In general, the environmental impacts of the Urban (Inner) Route are less significant than those of the Rural (Outer) Route. However, adverse visual impacts may occur at a number of properties as a result of a new roundabout and embankment south of the Aberdeen to Inverness Railway Line. In addition, substantial adverse noise impacts may occur at a number of properties adjacent to Wittet Drive as a result of increased traffic volumes.

Whilst not assessed at Stage 2, the Rural (Outer) Corridor Option, based on the results of the Stage 1 environmental assessment, is considered in general to result in more environmental effects than the other options.

An assessment of the Rural (Inner) Route was not included within the environmental appraisal as the engineering complexities and associated scheme estimates revealed costs outweighed benefits.

Key Findings: Engineering

The four options have significantly different engineering implications, with the Existing Network Enhancements requiring the least extensive construction works, but being likely to result in the greatest impact on road users during construction.

The Urban (Inner) Route Option poses engineering challenges particularly at either end of Wittet Drive. At its northern end, junction provision with the A96 is constrained by topography and residential properties adjacent to the road. At its southern end, traversing the Aberdeen to Inverness Railway Line involves the stopping up of Wards Road and a substantial fill embankment to the south of the railway.

The Rural (Outer) Route requires the most extensive construction works including four significant structures but is likely to result in the least impact on road users during construction. A development from previous assessment work is the inclusion of a culverted embankment rather than a viaduct structure across the River Lossie flood plain which introduces a moderate cost saving.

The Rural (Inner) Route requires a lesser extent of construction works compared to the outer route and is likely to result in less of an impact on road users during construction than the urban based options. Whilst it minimises impact to the River Lossie flood plain, it severs the existing Riverside Caravan Park, there is a requirement to acquire residential properties adjacent to Palmer Cross development and the route traverses close to the south of the relatively new housing development at the northern end of Mayne Farm Road.



Key Findings: Traffic and Economics

All four options are effective to varying extents in providing reductions in congestion and journey times. Traffic volumes that would be removed from the A96 and A941 onto either the Rural (Outer) Route or the Rural (Inner) Route are relatively limited due their distance from the built up area. The Urban (Inner) Route performs better in this respect with a larger volume of traffic expected to make use of the new route and therefore be removed from the A96 and A941. Whilst not providing a new route, Existing Network Enhancements such as improvements to the A96 / Wittet Drive junction are shown to redistribute certain journeys onto other routes within the built up area consequently reducing traffic flows on the A96 and A941.

The scheme cost estimates for the four options, including preparatory costs, construction costs, utilities costs and risk and optimism bias allowances are:

- Existing Network Enhancements: £7.2m;
- Urban (Inner) Route: £12.7m;
- Rural (Outer) Route: £68.2m; and
- Rural (Inner) Route: £24.5m.

While all four options provide transport economic benefits, the cost of the Rural (Outer) and Rural (Inner) Routes results in these schemes not representing value for money. The Existing Network Enhancements and the Urban (Inner) Route do represent value for money. The economic performance of each of the options is summarised below in terms of Benefit to Cost Ratio (BCR):

Option	Benefit To Cost Ratio (BCR)
Existing Network Enhancements	1.2
Urban (Inner) Route	1.1
Rural (Outer) Route	<0.1
Rural (Inner) Route	0.2

Key Findings: Planning Objectives

All four options are considered to largely perform positively against the previously identified planning sub-objectives. In terms of the overall planning objective, while all four options are considered to support the provision of a quicker, safer and more reliable transport system in and around Elgin, and accommodate the traffic growth associated with future development, it is still considered that only the Rural (Outer) Route has the potential to directly support the physical implementation of future development, although delivery of development is likely to be impacted by other physical constraints. Both the Existing Network Enhancements and the Rural (Inner) Route are considered to be largely neutral in terms of the wider objectives set out in the Moray Local Plan Settlement Statement for Elgin. The Urban (Inner) Route supports wider objectives extending Wittet Drive with a new railway crossing and introducing a roundabout at the A96 Wittet Drive junction. While the Rural (Outer) Route has the potential to directly support objectives relating to supporting additional development, this option could also prejudice the objective of advancing the case for a bypass of Elgin, by preventing future development of the corridor for such a purpose and not fulfilling that purpose if multiple development accesses were to be incorporated.



Key Findings: Public Consultation

The public consultation Exhibition was well attended by the residents of Elgin with a significant number of questionnaire responses received both during and after the event. When asked about a preferred strategy, responses indicate the Rural (Outer) Route as joint favourite together with not taking any option forward. The least favoured 'Do Something' options is the Urban (Inner) Route.

Conclusions

The key engineering, environmental, traffic / economic, planning objectives and public consultation findings are summarised in the table below:

	Existing Network Enhancements	Urban (Inner) Route	Rural (Outer) Route	Rural (Inner) Route
Engineering / Operation	Moderate benefit	Moderate benefit	Minor benefit	Minor benefit
Environmental	Substantial adverse impact (visual)/ Slight adverse impacts/ / Substantial benefits	Substantial adverse impact (visual/ noise)/ Slight adverse impacts / Substantial benefits	Moderate adverse impacts/ Benefits (Stage 1 Assessment)	Not Assessed
Traffic / Economics	Value for Money	Value for Money	Not Value for Money	Not Value for Money
Planning Objectives	Minor benefit	Minor benefit	Minor negative impacts / minor benefits	Minor negative impacts / minor benefits
Public Consultation*	19% support	13% Support	25% Support	17% Support

*25% favour not progressing any of the options and 1% favour taking forward an option but have no preference.

Recommendations

Following completion of the Stage 2 Assessment work, it is recommended that:

- As the Rural (Outer) Route fails to demonstrate value for money, it is not possible to recommend this option for implementation.
- As the Rural (Inner) Route fails to demonstrate value for money, it is not possible to recommend this option for implementation.
- It is recommended the Urban (Inner) Route objectives be retained within the local plan whilst alternative short term measures are promoted, implemented and their congestion reducing performance monitored.
- It is recommended that commencement of detailed junction design and modelling will confirm the extent of existing network enhancements with greater certainty and establish which individual enhancements provide the greatest benefits.



1 INTRODUCTION

1.1 Background

Elgin is the commercial and administrative centre of Moray and is a major destination for regional and local trips. Residential and commercial development is anticipated to continue in future years in the south west quadrant of Elgin, therefore the need for improvements to the transport network in this area have been identified to meet current and future traffic demands.

The A96 trunk road and A941 district distributor roads are the most heavily trafficked roads in the south west quadrant of Elgin with notably high volumes of traffic at the A941 railway overbridge and A96 Alexandra Road. Whilst the A96 provides an essential function within the national strategic road network, both it and the A941 function as key transport links for localised journeys within Elgin itself. The proportional distribution of traffic which has a destination point within in Elgin is between 70 and 81 percent of all traffic approaching Elgin via either the A96 or the A941. Also, the Aberdeen to Inverness railway line runs parallel to the A96 severing Elgin and constrains connectivity in the area to the south of the railway where there are a limited number of crossing points for motorised and non-motorised road users.

The Moray Local Plan, published in 2008, details strategic interventions including an extension of Edgar Road towards Wittet Drive, a new railway bridge connecting Wittet Drive with the Edgar Road extension, a new roundabout between the A96 and Wittet Drive and a link road to the affordable housing site south of the railway line. The Moray Council subsequently commissioned Jacobs Consultancy to undertake scheme assessment work to develop options to address the aforementioned constraints.

1.2 Study Methodology

The Design Manual for Roads and Bridges (DMRB) assessment reporting is a staged process involving consideration of the likely Engineering, Environmental and Traffic and Economic effects of the alternative options described in section 2 of this report. This staged process also allows for public and statutory bodies to comment on proposals.

A Stage 1 Assessment was undertaken on the Existing Network Enhancements, Urban (Inner) and Rural (Outer) Corridor Options.

Prior to Stage 2, a decision was made to undertake a Value Engineering exercise on the Rural (Outer) Route following consideration of the considerable estimated scheme cost and minimal benefits reported in the Stage 1 Traffic and Economic Assessment. This resulted in a modified Rural (Outer) Route and development of a Rural (Inner) Route. These routes, as well as the Existing Network Enhancements and Urban (Inner) Route were then subject to a Stage 2 Engineering Assessment.

Having reviewed the merits of each Corridor Option, balancing engineering complexities and potential traffic and economic benefits, it was concluded that the Rural (Outer) and Rural (Inner) Corridor Options exhibited a significant number of disbenefits. A decision was therefore taken, as it was not considered best value, not



to progress Stage 2 Environmental Appraisal work for these two corridor options at this time. The Existing Network Enhancements and Urban (Inner) Route were however, subject to a Stage 2 Environmental Appraisal including for minor amendments made to the design following the Stage 1 Assessment. The Stage 2 Appraisal however, only included a pre - scoped set of headings taken from the DMRB guidance for Stage 2 Environmental Appraisals. These headings were considered to be priorities for the purpose of further appraisal.

Whilst the Rural (Outer) Corridor Option was assessed with respect to Traffic and Economics at Stage 1, the minor nature of change to the scheme in terms of subsequent impact on traffic assignment was assessed as being marginal. It was therefore concluded that there was no benefit in running the model for a Stage 2 Traffic and Economic Assessment and that Stage 1 results should be carried forward. The Existing Network Enhancements, Urban (inner) Route and Rural (Inner) Route were however, further assessed at Stage 2 in this respect.

1.3 Study Objectives

The study objectives are consistent with work undertaken as part of the Elgin Traffic Management scheme which comprises one overall objective and 7 sub-objectives. The overall objective is:

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

The sub-objectives are:

- To reduce average junction delay times by introducing junction time 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 routs in and around Elgin;
- To improve safety for all road users by reducing the number of road accidents 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.

1.4 Report Purpose

The reporting format adopted for the second stage of scheme assessment activities is as follows:



- A Stage 2 Main Issues Report, identifying key findings from the second stage of assessment work carried out;
- A Public Consultation Findings Report summarising the outcomes of a public exhibition held on 27th and 28th of February 2011; and
- A Stage 2 Scheme Assessment Report, providing technical detail in accordance with the reporting procedure set out in the Design Manual for Roads and Bridges (DMRB).

This report is the Stage 2, Main Issues Report, which presents a summary of key findings arising from the second stage of the DMRB assessment processes. Details of all findings are presented in the other reports noted above, which should be read in conjunction with this Main Issues Report.

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2 SUMMARY OF SCHEME DEVELOPMENT

2.1 Overview

The options assessed in this appraisal process were developed following a review of historical work that The Moray Council considered achieved project objectives and the introduction of additional options to close potential assessment gaps. That review led to the identification of four scenarios for assessment purposes as follows:

- 'Do-nothing' scenario: identified to provide a reference case against which each of the options involving infrastructure improvements can be assessed;
- 'Existing Network Enhancements' Option: identified to evaluate the extent to which congestion and journey time reductions can be delivered by adapting the existing road network infrastructure;
- 'Urban (Inner)' Option: this option is based on the alternative previously termed 'Option A' developed during historical studies; and
- 'Rural (Outer)' Option: this option is based on the alternative previously termed 'Option B' developed during historical studies.

The Stage 1 Assessment determined that the Rural (Outer) Option exhibited a high scheme cost estimate and minimal benefits. In light of this, a decision was made to undertake a Value Engineering exercise on the Rural (Outer) Route. This resulted in a modified Rural (Outer) Route and development of a Rural (Inner) Route which would be taken forward to the Stage 2 Assessment in addition to the Urban (Inner) Route and the Existing Network Enhancements.

- 'Rural (Inner)' Option: this option is a value engineered alternative to the 'Rural (Outer) Option shortening the scheme length and reducing the number of River Lossie crossing structures by adopting a route close to the periphery of the built up extremities of southwest Elgin.

In considering these alternatives it is important to note that each should be viewed as a indicative proposal at this time and whilst they have been developed for appraisal purposes they will be subject to significant refinement at later stages of the design development process. The options as described at this time should therefore not be taken to be definitive final proposals for the scenario concerned.

2.2 Do-Nothing Scenario

This scenario assumes no road network infrastructure improvements are brought into place beyond those already confirmed at this time. While it therefore takes account of some modifications to the existing road network, it only includes modifications already committed to for purposes beyond providing general reductions in congestion and journey times.

The locations of the network modifications included in this scenario are shown on Drawing JC0061A0/D/T/001 included in Appendix A to this report.



2.3 Existing Network Enhancements Option

This option was developed to evaluate the extent to which the existing road infrastructure could be developed to provide transport benefits. While, in essence, this is therefore a 'Do-minimum' approach to addressing the issues of concern, it should be noted that some of the measures proposed are likely to require the acquisition of land and the promotion of statutory orders to enable their implementation. The measures considered were identified following a review of previous studies undertaken, including;

- Elgin WDR Junction Assessments & Design - Halcrow Group Ltd 2008;
- Elgin Active Travel Audit - Halcrow Group Ltd 2009; and
- Elgin Traffic Review - Jacobs Consultancy 2009.

a) Trunk Road based elements include:

- Geometric improvements to Dr Gray's Roundabout incorporating amendments to accommodate a one-way arrangement on South Street;
- Dualling of the A96 Alexandra Road between the Tesco's and Halfords roundabouts including a review of pedestrian facilities in this area;
- Provision of a roundabout junction on the A96 in the vicinity of Wittet Drive:
 - Option U1 provides a roundabout centred on the existing A96 / Wittet Drive junction; and
 - Option U2 provides a roundabout in the vicinity of the existing priority junction between the A96 and Sheriffmill Road.

b) Local road network based elements include:

- Junction capacity improvements to enhance capacity/operations at the A941 / Edgar Road and A941 / Station Road junctions;
- Signalisation of the Moray Street / A941 Hay Street junction, relocating the existing controlled pedestrian facilities to align with pedestrian desire lines;
- Amendments to South Street to provide a one-way westbound route from Hay Street to West Road;

Elements of the Existing Network Enhancements Option that were considered at Stage 1 assessment have not been selected for further Stage 2 assessment. These are as follows:

- Re-design of the Tesco's Roundabout to three arms with an alternative access provisions to Tesco's; and
- Signalisation of Mayne Road / Wards Road Junction.

The measures proposed as part of this option are shown on Drawings JC0061A0/D/T/002 and JC0061A0/D/T/003 included in Appendix A to this report.



2.4 Urban (Inner) Route Option

This option assesses the implications of providing a distributor route for the south west quadrant of Elgin within the developed area, in keeping with the nature of the distributor routes already in existence in the three other quadrants.

This option includes a new crossing of the Aberdeen to Inverness railway line, which enables the access road from the western end of Edgar Road to the affordable housing site directly south of the railway line to be linked with Wittet Drive north of the railway line.

Specific elements of this option are:

- Extension of the access from Edgar Road to serve proposed housing zones northwards towards the Aberdeen-Inverness railway line;
- Provision of a link to meet proposed housing zones access road;
- Continuation of the route in a northerly direction towards the Aberdeen - Inverness Railway line;
- Provision of a new road bridge over the Aberdeen to Inverness railway line;
- Connection into the southern end of Wittet Drive with the consequential need to stop up the western end of Wards Road;
- Carriageway improvement and road marking works, including parking management, as necessary on Wittet Drive;
- Improvement measures to manage the operation of the junction between Wittet Drive and the B9010 Pluscarden Road, such as traffic signal control; and
- Provision of a new roundabout at the northern end of Wittet Drive to maintain a connection to the A96.
 - Option U1 provides a roundabout centred on the existing A96 / Wittet Drive junction; and
 - Option U2 provides a roundabout in the vicinity of the existing priority junction between the A96 and Sheriffmill Road.

The measures proposed as part of this option are shown on Drawing JC0061A0/D/T/004 included in Appendix A to this report.

2.5 Rural (Outer) Route Option

This option assesses the implications of providing a distributor route for the south west quadrant of Elgin outside the developed area. This option involves the provision of three crossings of the River Lossie and a new crossing of the Aberdeen to Inverness railway line linking Edgar Road to the A96 at Morrision Road junction.



Specific elements of this option are:

- Extension of the access from Edgar Road to proposed housing zones in a south westerly direction towards a proposed junction for future development and / or a future bypass. A local footpath is crossed approximately half-way between proposed junctions;
- Continuation of the route in a north westerly direction to cross the River Lossie approximately 400 metres south east of the B9010 Pluscarden Road. This section of the route crosses a local access road and a local footpath;
- Continuation of the route in a north-westerly direction crossing the B9010 Pluscarden Road where an at-grade roundabout is provided;
- Continuation of the route in a north-westerly direction through the River Lossie flood plain on a culverted embankment either side of a crossing over the Aberdeen to Inverness railway approximately 300 metres north west of the B9010 Pluscarden Road;
- Continuation of the route in a northerly direction to cross a local access road serving farms west of the distillery and a further crossing of the River Lossie approximately 300 metres south west of the distillery;
- Continuation of the route in a northerly direction from a further River Lossie to the west of the distillery through Riverside Caravan Park towards the A96 Morriston Road junction; and
- Provision of an at-grade roundabout on the A96 at the Morriston Road junction to link the new distributor road to the wider road network.

The measures proposed as part of this option are shown on Drawing JC0061A0/D/T/006 included in Appendix A to this report.

2.6 Rural (Inner) Route Option

Following conclusion of earlier stages of the assessment process it was recognised that an alternative route alignment within the rural corridor could be explored with the aim of providing a more cost effective option. A Rural (Inner) Route involving a shortened scheme length close to the periphery of the built up extremities of southwest Elgin was therefore developed.

Specific elements of this option are:

- Extension in a westerly direction of the proposed affordable housing site access road which emanates from the western extremity of Edgar Road.
- Continuation of the route in a north westerly direction to cross the B9010 Pluscarden Road and the Aberdeen to Inverness railway line;
- Continuation of the route in a northerly direction with an access provided for properties located on Bruceland Road west of the route;



- Continuation of the route in a northerly direction from a further River Lossie to the west of the distillery through Riverside Caravan Park towards the A96 Morriston Road junction; and
- Provision of an at-grade roundabout on the A96 at the Morriston Road junction to link the new distributor road to the wider road network.

The measures proposed as part of this option are shown on Drawing JC0061A0/D/T/007 included in Appendix A to this report.

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3 KEY FINDINGS: ENVIRONMENTAL

3.1 Existing Network Enhancements

Key environmental appraisal findings for the Existing Network Enhancements are:

- Four visual receptors are predicted to experience significant residual impacts (Moderate or greater). These are associated with the proposed roundabout between the A96 and Wittet Drive.
- With the Existing Network Enhancements in place, Moderate adverse noise impacts are predicted for 15 residential properties in the Design Year (2029) compared to the Do Nothing Scenario in the Year of Opening (2014). Five residential properties are anticipated to experience Substantial noise benefits; while a further 25 residential properties are anticipated to experience perceptible decreases in noise level with an associated Moderate noise benefit.

3.2 Urban (Inner) Route

Key environmental appraisal findings for the Urban (Inner) Route are:

- This proposed route is predominantly offline and results in the greatest habitat loss when compared to the Existing Network Enhancements option and Do Nothing Scenario. If water vole is found to be present, then without mitigation, negative impacts of moderate significance are predicted.
- Three visual receptors are predicted to experience significant residual impacts (moderate or greater) for visual receptors for the Urban (Inner) Route.
- With the Urban (Inner) Route in place, Substantial adverse noise impacts are predicted for 56 residential properties and three other sensitive receptors in the Design Year (2029) compared to the Do Nothing Scenario in the Year of Opening (2014). In addition, a further 250 residential properties and 3 other sensitive receptors are anticipated to experience perceptible increases in noise level with associated Moderate adverse noise impacts in the Design Year (2029) compared to the Do Nothing Scenario in the Year of Opening (2014). Four residential properties are anticipated to experience substantial noise benefits. A further seven residential properties are anticipated to experience perceptible decreases in noise level with an associated moderate noise benefit.

3.3 Rural (Outer) Route

As clarified earlier, Stage 2 Environmental Appraisal work has not been undertaken for the Rural (Outer) Route at this time. Key environmental assessment findings for the Rural (Outer) Route which were considered in the Stage 1 Assessment are:

- This option is considered likely to have no significant impacts on air quality, pedestrians, cyclists, equestrians and community effects, driver stress of vehicular travellers, and geology, land contamination and groundwater;



- This option impacts on the green field areas surrounding Elgin that contain known archaeological sites, and there is consequently potential for unknown sites to be affected;
- This option results in significant impacts associated with severance of areas of ancient woodland and the introduction of three crossings of the River Lossie, which is designated a salmonid river. The key potential environmental effects of this option include potential wildlife mortality as a result of species trying to cross the new road where it severs their traditional territory or foraging routes and run-off from roads leading to the pollution of local watercourses.
- The introduction of a number of structures crossing the River Lossie flood plain will result in intrusion on the mainly flat surrounding landscape;
- This option traverses close to the rural properties Bruceland House and Sunningdale, and it also severs the Riverside Caravan Park. The option affects a number of the Bruceland and Bilbohall Farms fields introducing severance to agricultural land;
- This option leads to increased traffic volumes in a rural environment and therefore increased noise for the few receptors in close proximity to the corridor; and
- This option involves three crossings of the River Lossie, requiring new drainage discharges. As its footprint is within the floodplain, it has the potential to reduce existing flood storage capacity without the adoption of a viaduct crossing and/or the introduction of compensatory measures. The scheme would also have to be developed in a manner to avoid any potential impact on the proposed Elgin Flood Alleviation Scheme and downstream flood risk.

3.4 Rural (Inner) Route

As clarified earlier, Stage 2 Environmental Appraisal work would not be undertaken for the Rural (Inner) Route at this time.



4 KEY FINDINGS: ENGINEERING

4.1 Existing Network Enhancements

Key engineering assessment findings for the Existing Network Enhancements are:

- The Existing Network Enhancements include generally straight forward engineering and traffic management measures to existing junctions.
- An enhancement introducing a roundabout in the vicinity of the existing A96 and Wittet Drive junction location involves significant geotechnical complexities and the built environment adjacent to the improvement constrains layout standards. Furthermore the introduction of a roundabout at the existing junction location would require the acquisition of adjacent private residential properties. An alternative roundabout location to the west of the existing A96 and Wittet Drive junction is considered within the Urban (Inner) Route which minimises the extents of geotechnical work but also requires the acquisition of private residential properties on Wittet Drive.
- The upgrading of the A96 at Alexandra Road to form an urban dual carriageway is constrained by adjacent infrastructure and properties necessitating retaining structures at the northern trunk road boundary. Road widening enhances road capacity however as the proposal is on the periphery of the south west study area, the benefits to the south western quadrant of Elgin are limited.
- The construction works associated with this option including Public Utility diversions are likely to result in disruption to road users, due to the on-line nature of this option.
- As the Existing Network Enhancements is an on-line improvement, it does not provide any relief in terms of traffic volumes using the A96, nor does it provide any distributor road function within the south-west quadrant of Elgin.
- The Existing Network Enhancements could potentially be delivered either as discrete individual junction capacity improvements, in small groups or as a single scheme depending on the financial constraints at a given point in time.

4.2 Urban (Inner) Route

Key engineering assessment findings for the Urban (Inner) Route are:

- Two alternative roundabout arrangements are considered to upgrade the existing A96 and Wittet Drive junction at the northern end of the Urban (Inner) Route. A roundabout at the existing A96 and Wittet Drive junction location involves significant geotechnical complexities and the built environment adjacent to the improvement necessitates the need for multiple accesses adjacent to the junction introducing departures from standard. Furthermore the introduction of a roundabout at the existing junction location would require the demolition of adjacent private residential properties. The detrimental impact to properties and geotechnical complexities suggest this proposal is an unfavourable solution.



- An alternative roundabout location to the west of the existing A96 and Wittet Drive junction is also considered. This four arm roundabout incorporating arms for the east and westbound A96, access to Sheriffmill Road and a realigned Wittet Drive link would meet current roundabout design standards. This proposed junction alternative would, however, require the demolition of private residential properties on the west side of Wittet Drive as the proposed link road connects back to Wittet Drive.
- Both roundabout options between the A96 and Wittet Drive have detrimental effects to a comparable number of individual residential properties, however, the option to the west of the existing junction involves less engineering complexities.
- In order to develop the necessary headroom across the Aberdeen to Inverness Railway Line, Wittet Drive will be constructed either side of the railway on an engineered embankment. The resultant height difference between Wittet Drive and Wards Road necessitates that Wards Road is stopped up.
- In order to cross the Aberdeen to Inverness Railway a structure is required which, whilst expected to be of standard construction, will make a significant contribution to the overall cost of this option.
- An assessment of Public Utility information made available indicates that there will likely be a requirement to divert plant currently located within the existing highway boundary and within the footprint of the offline route sections.

4.3 Rural (Outer) Route

Key engineering assessment findings for the Rural (Outer) Route are:

- The topography of the land along the route is mainly flat apart from a few distinct locations where the land can be considered more undulating. As a result of this, and the high alignment standards comparable with a 60mph speed limit required, the route exhibits significant volumes of cut and fill earthworks at multiple locations.
- The high alignment standard and meandering nature of the River Lossie results in three structures crossing the river, a single structure crossing the Aberdeen to Inverness railway line and a single structure for a local access road.
- A culverted embankment is required to cross the River Lossie flood plain. This flood plain extends from the second river crossing to the junction with the B9010 Pluscarden Road..
- The aforementioned River Lossie crossings, railway crossing, local access crossing, extensive length of culverted embankment and extensive earthworks all introduce engineering complexities and contribute to the significant cost of the option.
- Construction of the Rural (Outer) Route is likely to result in the least disruption to existing road users due to it being of-line in nature.
- An assessment of Public Utility information made available indicates that there will likely be a requirement to divert plant currently located within the existing highway boundary and within the footprint of the offline route sections.



- Whilst the Rural (Outer) Route will require significant purchase of agricultural land, impacts on residential property is limited to the Riverside Caravan Park located between the A96 junction and the northernmost River Lossie crossing.

4.4 Rural (Inner) Route

Key engineering assessment findings for the Rural (Inner) Route are:

- In general the Rural (Inner) Route reduces the engineering complexities associated with a rural route. The engineering standard is reduced to match an anticipated speed limit of 40 mph and as the route remains tighter to the periphery of urban Elgin, the length is significantly reduced.
- The topography of the land along this route is again mainly flat apart from a few distinct locations where the land can be considered more undulating. As a result of this the route still exhibits significant volumes of cut and fill earthworks at several locations.
- The Rural (Inner) Route alignment has only one structure crossing the River Lossie, a single structure crossing the Aberdeen to Inverness railway line and a single structure crossing the B9010 Pluscarden Road.
- Connectivity to the B9010 Pluscarden Road is not achievable due to the proximity of the railway crossing, River Lossie and the need to provide an appropriate gradient either side of the railway crossing.
- Whilst a single crossing of the River Lossie is required, the route has a limited impact on the River Lossie flood plain reducing the need for engineering measures to traverse such a constraint.
- Construction of the Rural (Inner) Route is likely to result in less disruption to existing road users compared to the urban based options, due to it being of-line in nature.
- An assessment of Public Utility information made available indicates that there will likely be a requirement to divert plant currently located within the existing highway boundary and within the footprint of the offline route sections.
- The Rural (Inner) Route will require a significant area of land to be purchased. In addition, the route does have a detrimental effect on private residential properties near Palmers Cross with the need to undertake demolition works.
- Impacts on residential property is limited to the Riverside Caravan Park located between the A96 junction and the northernmost River Lossie crossing.



5 KEY FINDINGS: TRAFFIC AND ECONOMICS

5.1 Existing Network Enhancements

Key Traffic and Economic Assessment findings for the Existing Network Enhancements are:

- The introduction of a roundabout at the A96 / Wittet Drive junction to facilitate right turn manoeuvres, and junction capacity improvements at Station Road / New Elgin Road and Edgar Road / New Elgin Road junctions have a beneficial effect managing traffic movements through the south west quadrant of Elgin.
- A new roundabout at the A96 / Wittet Drive junction opens an attractive alternative route for motorists travelling between the A96 and Edgar Road whilst also relieving pressure on the A96 approaching Dr Gray's roundabout. A reduction in traffic volumes at Dr Gray's roundabout may also potentially reduce accident numbers at this locus and improve road safety performance.
- Junction capacity improvements at the Station Road and Edgar Road junctions with New Elgin Road, which will require further detailed consideration in light of potential development in the vicinity, will facilitate improved traffic movements at these locations.
- The enhancements considered at the A96 Alexandra Drive and South Street provides limited benefits to traffic congestion in Elgin.
- The Existing Network Enhancements require the least capital investment, when compared with alternatives, of £7.2 million and the network enhancements demonstrate a benefit cost ratio of 1.2.
- The opportunity is likely to exist to introduce the scheme in phases.

5.2 Urban (Inner) Route

Key Traffic and Economic Assessment findings for the Urban (Inner) Route are:

- The Urban (Inner) Route attracts significant volumes of traffic travelling between the A96 and south of Edgar Road whilst providing additional capacity on road links within the city centre of Elgin.
- The Annual Average Daily Traffic (AADT) volume is predicted to be between approximately 6400 and 9200 vehicles in the opening year (2014) and between 6900 and 9600 vehicles in the design year (2029).
- The A96 trunk road between Wittet Drive and Dr Gray's roundabout in particular sees a reduction in traffic volumes which may reduce the accident numbers and improve the road safety performance at Dr Gray's roundabout.
- With the severance of Wards Road at its connection with Wittet Drive the B9010 Pluscarden Road and South Street corridor also becomes an attractive route for traffic travelling between Edgar Road and the city centre.



- The route requires a moderate capital investment of £12.7 million and demonstrates a benefit cost ratio of 1.1.
- The opportunity is likely to exist to introduce the scheme in phases.

5.3 Rural (Outer) Route

As clarified earlier in this report, Stage 2 Traffic and Economic Assessment work would not be undertaken for the Rural (Outer) Route at this time. Key Traffic and Economic Assessment findings for the Rural (Outer) Route which were considered in the Stage 1 Assessment are:

- The Rural (Outer) Route was observed to attract a proportion of traffic travelling between the A96 and the Edgar Road area. The AADT volume is predicted to be approximately 2000 vehicles in both the opening year (2014) and the design year (2029).
- The route therefore does provide some additional capacity on road links within the city centre of Elgin, however the overall volumes of traffic attracted to the route are relatively small as the routes connection to the A96 is too far west to be attractive to the high proportion of motorist undertaking internal journeys within Elgin.

The Value Engineering exercise undertaken on the Rural (Outer) Route following the Stage 1 Assessment allowed for a moderate cost saving to be realised. Key findings from this exercise are:

- The attracted proportion of traffic travelling between the A96 and the Edgar Road area remains unchanged at approximately 2000 vehicles in both the opening year (2014) and the design year (2029) as a result of the value engineering exercise.
- The route still requires a significant capital investment of £68.2 million and continues to demonstrate a very low benefit cost ratio of less than 0.1 indicating the route still does not demonstrate value for money.

5.4 Rural (Inner) Route

Key Traffic and Economic Assessment findings for the Rural (Inner) Route are:

- Similarly to the Rural (Outer) Route, the Rural (Inner) Route was observed to attract a proportion of traffic travelling between the A96 and the Edgar Road area. The AADT volume is predicted to be approximately 2700 vehicles in both the opening year (2014) and the design year (2029).
- Again, the route therefore does provide some additional capacity on road links within the city centre of Elgin, however the overall volumes of traffic attracted to the route are relatively small as the routes connection to the A96 is too far west to be attractive to the high proportion of motorist undertaking internal journeys within Elgin.



- The route requires a significant capital investment of £24.5 million and whilst better than the Rural (Outer) Route, still demonstrates a low benefit cost ratio of 0.2 indicating the route does not demonstrate value for money.

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6 KEY FINDINGS: PLANNING OBJECTIVES

6.1 Existing Network Enhancements

Key findings of the assessment of the Existing Network Enhancement option measured against the Elgin Traffic Management sub-objectives are:

- The option is considered to reduce junction delay times on the A96 and A941 by improving the operational efficiency of junctions;
- The option is considered to provide some benefits in minimising delay and disruption associated with modal conflict through the incorporation of formalised non-motorised user crossing facilities at a number of locations;
- This option is considered to provide some benefits in improving safety through the inclusion of formalised non-motorised user crossing facilities at a number of locations;
- The option is considered to be neutral in terms of effects on the management of parking in Elgin;
- The option is considered to encourage modal shift by providing improved facilities for non-motorised road users, and by providing benefits to public transport services by reducing congestion and journey times;
- The option is considered to be largely neutral in terms of adverse environmental impacts caused by motorised vehicular traffic in and around Elgin, in that while reductions in congestion will provide minor local benefits, future growth in traffic volumes will continue to focus on the existing road network; and
- The option is considered to be neutral in terms of supporting the integration of land use and transport.

The assessment of this option against the overall planning objective previously developed is therefore that it would enable the provision of a quicker, safer and more reliable transport system in and around Elgin, but while it would accommodate the traffic growth associated with future development, it would not directly support the physical implementation of future development.

In terms of the wider objectives set out in the Moray Local Plan Settlement Statement for Elgin, this option is largely neutral against most of these objectives, but is considered to support the objective of promoting economic activity.

6.2 Urban (Inner) Route

Key findings of the assessment of the Urban (Inner) Route measured against the Elgin Traffic Management sub-objectives are:

- The option is considered to reduce junction delay times on the A96 and A941 by the re-distribution of traffic from these routes;



- The option is considered to provide some benefits in minimising delay and disruption associated with modal conflict through the limited reduction of traffic on the A96 and A941;
- This option is considered to be neutral in terms of improving safety throughout the network as a whole;
- The option is considered to have a minor adverse effect on the management of parking in Elgin, due to the likely need to incorporate parking management on Wittet Drive;
- The option is considered to encourage modal shift to non-motorised modes by reducing modal conflict, and by providing benefits to public transport services by reducing congestion and journey times;
- The option may provide some benefits in terms of environmental impacts caused by motorised vehicular traffic in and around Elgin, although the traffic volume reductions may not provide significant environmental benefit;
- The option is considered to provide benefits in terms of supporting the integration of land use and transport.

The assessment of this option against the overall planning objective previously developed is therefore that it would enable the provision of a quicker, safer and more reliable transport system in and around Elgin, but that while it would accommodate the traffic growth associated with future development, it would not directly support the physical implementation of future development.

In terms of the wider objectives set out in the Moray Local Plan Settlement Statement for Elgin, this option is beneficial achieving these objectives to extend Wittet Drive with a new railway crossing and introduce a roundabout at the A96 Wittet Drive junction.

6.3 Rural (Outer) Route

Key findings of the assessment of the Rural (Outer) Route measured against the Elgin Traffic Management sub-objectives are:

- The option is considered to introduce only marginal reductions in junction delay times on the A96 and A941 by the re-distribution of traffic from these routes;
- The option is considered to be neutral in terms of minimising delay and disruption associated with modal conflict through the limited reduction of traffic on the A96 and A941;
- This option is considered to be neutral in terms of improving safety throughout the network as a whole;
- The option is considered to be neutral in terms of effects on the management of parking in Elgin;



- The option is considered to be neutral in terms of modal shift to non-motorised modes by reducing modal conflict, and by providing benefits to public transport services by reducing congestion and journey times;
- The option is considered to be largely neutral in terms of adverse environmental impacts caused by motorised vehicular traffic in and around Elgin.
- The option is considered to be neutral in terms of supporting the integration of land use and transport.

The assessment of this option against the overall planning objective previously developed is therefore that it would be neutral in terms of supporting provision of a quicker, safer and more reliable transport system in and around Elgin. However the route may accommodate a proportion of the traffic growth associated with future development, and have the potential to directly support the physical implementation of future development.

In terms of the wider objectives set out in the Moray Local Plan Settlement Statement for Elgin, this option is largely neutral against most of these objectives. It is considered to support the objective of promoting economic activity, and it also has the potential to support the objectives relating to the identification of land for housing, industrial/commercial, and business park uses. However, it is considered that it could prejudice the objective of advancing the case for a bypass of Elgin by preventing future development of the corridor for such a purpose and not fulfilling that purpose if multiple development accesses were to be incorporated.

6.4 Rural (Inner) Route

Key findings of the assessment of the Rural (Inner) Route measured against the Elgin Traffic Management sub-objectives are:

- The option is considered to introduce only marginal reductions in junction delay times on the A96 and A941 by the re-distribution of traffic from these routes;
- The option is considered to be neutral in terms of minimising delay and disruption associated with modal conflict through the limited reduction of traffic on the A96 and A941;
- This option is considered to be neutral in terms of improving safety throughout the network as a whole;
- The option is considered to be neutral in terms of effects on the management of parking in Elgin;
- The option is considered to be neutral in terms of modal shift to non-motorised modes by reducing modal conflict, and by providing benefits to public transport services by reducing congestion and journey times;
- The option is considered to be largely neutral in terms of adverse environmental impacts caused by motorised vehicular traffic in and around Elgin.
- The option is considered to be neutral in terms of supporting the integration of land use and transport.



The assessment of this option against the overall planning objective previously developed is therefore that it would be neutral in terms of supporting provision of a quicker, safer and more reliable transport system in and around Elgin. However the route may accommodate a proportion of the traffic growth associated with future development, and have the potential to directly support the physical implementation of future development although to a lesser extent than the Rural (Outer) Route due to the limited connections to the local road network achievable.

In terms of the wider objectives set out in the Moray Local Plan Settlement Statement for Elgin, this option is largely neutral against most of these objectives. It is considered to support the objective of promoting economic activity, and it also has the potential to support the objectives relating to the identification of land for housing, industrial/commercial, and business park uses.

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6.5 Summary of Key Findings

Table 6-A, shown below, presents a summary of the Key Findings for each Route Option with respect to the Engineering Assessment, Environmental Appraisal and a Traffic and Economic Assessment:

	Engineering Assessment	Environmental Appraisal	Traffic and Economic Assessment
Existing Network Enhancements	<ul style="list-style-type: none"> Measures are predominantly standard junction capacity improvements involving routine traffic engineering measures. Junction improvements will enhance pedestrian and cyclist facilities updating provision in line with current standards. Two roundabout variants are feasible at the A96/Wittet Drive junction. Located either at the north end of the existing A96/Wittet Drive junction or further west at Sheriffmill Road. Property acquisition is required to implement a new roundabout at the northern end of Wittet Drive. 	<ul style="list-style-type: none"> No significant impacts are anticipated in terms of air quality, ecology or noise. Beneficial impacts in terms of air quality and noise envisaged at a number of properties. Substantial adverse visual impacts may occur as a result of the new roundabout at the northern end of Wittet Drive. 	<ul style="list-style-type: none"> Reduced congestion in Elgin centre and improved journey times. Potential for developer funding contributions. Estimated scheme cost: £7.2 million. (Including risk and optimism bias) However, there is potential to introduce the scheme in phases. The ratio of transport economics benefits relative to costs is 1.2 for this proposal. A ratio greater than one indicates benefits exceed costs.
Urban (Inner) Route	<ul style="list-style-type: none"> 1.1 kilometres of existing and new single carriageway road. A new structure at the south end of Wittet Drive crosses the existing railway line. The introduction of this structure severs Wards Road at its western end necessitating the closure of its connections with Wittet Drive. Two roundabout variants are possible at the north end of the scheme: at the existing A96/Wittet Drive junction; or further west at Sheriffmill Road. The road is on embankment south of the railway line connecting to a reconfiguration of the access road to the proposed affordable housing to the west of The Wards Wildlife Site. Property acquisition is required to implement a new roundabout at the northern end of Wittet Drive and provide a crossing of the railway line. 	<ul style="list-style-type: none"> No significant impacts are anticipated in terms of air quality, ecology or noise. Beneficial impacts in terms of air quality and noise envisaged at a number of properties. Adverse visual impacts may occur as a result of the new roundabout. 	<ul style="list-style-type: none"> Reduced traffic in Elgin centre relieving congestion and improving journey times. A new A96 roundabout at Sheriffmill Road to the west of the existing A96/Wittet Drive junction provides opportunity to access the site east of Glen Moray Distillery which is zoned for housing development. Estimated scheme cost: £12.7 million. (Including risk and optimism bias) However, there is potential to introduce the scheme in phases. The ratio of transport economics benefits relative to costs is 1.1 for this proposal. A ratio greater than one indicates benefits exceed costs.
Rural (Outer) Route	<ul style="list-style-type: none"> 2.5 kilometres of new single carriageway road with significant earthworks on the River Lossie flood plain and multiple structures. Three structures crossing the River Lossie, a structure crossing the railway and a culverted embankment northeast of Allarburn farm. Road alignment standards adopted are appropriate for future bypass purpose. Three roundabouts at junctions connecting to the A96, B9010 Pluscarden Road and an extended Edgar Road. 	<ul style="list-style-type: none"> Moderate adverse impacts on ecology may occur as a result of the severance of woodland corridors. Moderate adverse impacts may occur on landscape and visual receptors. Beneficial impacts in terms of air quality and noise envisaged at a number of properties. <p><i>(From DMRB Stage 1 Assessment)</i></p>	<ul style="list-style-type: none"> Low predicted traffic volumes of 2,000 vehicles at opening year. Introduces a minor reduction in Elgin congestion, with limited journey time benefits. Estimated scheme cost: £68.2 million.(Including risk and optimism bias) The ratio of transport economics benefits relative to costs is less than 0.1 for this proposal. A ratio less than one indicates benefits are lower than costs.
Rural (Inner) Route	<ul style="list-style-type: none"> 1.6 kilometres of new single carriageway road predominantly on embankment. Alignment standards adopted are lower than the Rural (Outer) Route. New structures crossing the River Lossie, the railway and the B9010 Pluscarden Road. A roundabout at the A96 junction, but no connection to the B9010 Pluscarden Road. Property acquisition adjacent to Palmer Cross required. 	<ul style="list-style-type: none"> Not included within the environmental assessment at this stage as the engineering complexities and associated scheme estimates revealed costs outweighed benefits. 	<ul style="list-style-type: none"> Low predicted traffic volumes of 2,700 vehicles at opening year. Introduces a minor reduction in Elgin congestion with limited journey time benefits. Estimated scheme cost: £24.5 million. (Including risk and optimism bias) The ratio of transport economics benefits relative to costs is 0.2 for this proposal. A ratio less than one indicates benefits are lower than costs.

Table 6-A Summary of Key Findings



7 PARTICIPATION AND CONSULTATION

7.1 Introduction and Consultation Arrangements

The Main Issues Report submitted to The Moray Council following Stage 1 Assessment work recommended that a public consultation exercise should form part of the Stage 2 Assessment. This recommendation was based on the guidance for a Stage 2 Assessment included within TD 37/93 'Scheme Assessment Reporting' of the DMRB.

A public consultation exhibition was held locally in Elgin Library on the 27th and 28th January 2011 to allow the public to view the alternative options for an Elgin Western Distributor Road. The material on display at the exhibition was also available to view online on the Moray Council's website.

The exhibition aimed to engage the public and obtain feedback to inform the decision making process and was attended by staff from The Moray Council and Jacobs Consultancy who were there to explain the proposals, answer questions from the public and accept completed questionnaires. In addition to questionnaires completed at the exhibition, public responses received via post and online via The Moray Council's website by the 6th of February 2011 were also given cognisance.

As part of the consultation process, The Moray Council officials met with Community Council stakeholders prior to the exhibition to advise of the content and encourage participation.

This section of the report summarises the key findings from the questionnaire responses received. Further information on the consultation arrangements, comments and concerns raised by the public at the exhibition and a detailed analysis of the questionnaire responses received, are included in the Public Consultation Report, which is an accompanying document as part of the DMRB Stage 2 assessment.

7.2 Effectiveness of Consultation

Advertising of the exhibition was via a general press release by the Council on 17th January 2011. A media preview was also held, resulting in prominent articles in the Northern Scot and Press & Journal newspapers on Friday 28th January 2011, during the consultation. The Elgin Traffic Management homepage of The Moray Council's website also alerted readers of the upcoming exhibitions.

A total of 474 people were recorded in the visitor's book as having attended the exhibition throughout the two-day event and a total of 23 questionnaire responses were completed and submitted by attendees at the event. Following the exhibitions a further 179 questionnaire responses were received either electronically via The Moray Council's website or handwritten and posted to the Council's offices. In addition, 9 questionnaires with formal letter responses were received by the Council giving a total of 211 responses received by the 6th of February 2011 deadline. Of the 211, 203 were received from individuals with the remaining eight being on behalf of organisations.



7.3 Questionnaire Response

The exhibition questionnaire posed a series of questions in an attempt to initially determine background information about whom was filling the questionnaire out and then encourage comment regarding traffic problems experienced in Elgin and the proposals on display at the exhibition aimed at alleviating these problems.

7.3.1 Respondent's Background

Key findings from the questionnaires with regard to respondent's background are:

- Approximately 95% of the responses were returned by individuals. The remaining 5% were returned by either a group or organisation.
- Groups and organisations whom returned questionnaires include:
 - Ashley Bartlam Partnership;
 - Robertson Homes;
 - The Fairley's Solicitors;
 - Westfields Residents Association;
 - Glen Moray Distillery Ltd;
 - City & Royal Burgh of Elgin Community Council;
 - Douglas Williamson's Solicitors; and
 - Murchison Law, John and Christine Mitchell Solicitors.
- 96% of responses returned are from addresses within the extents of the IV30 Elgin postcode area.
- Only 4% of responses returned are from addresses outside the IV30 Elgin postcode area. These include 3 addresses from Forres, 2 from Fochabers and 1 from Lossiemouth and Buckie postcodes.
- 36 Wittet Drive properties are represented in the questionnaire responses.

7.3.2 Where Did Respondent View The Exhibition?

Key findings from the questionnaires with regard to where the public viewed the exhibition material are:

- 77% of people whom returned questionnaires viewed the exhibition material in person at Elgin Library;
- 18% of people whom returned questionnaires viewed the exhibition material online via the Council's website, a further 16% viewed online and also visited the exhibition in person; and
- 5% did not view the material prior to responding.



7.3.3 Respondent's View on the Extent That Traffic Congestion Affects Them

Key findings from the questionnaires with regard to respondent's view on the extent to which they consider traffic congestion in Elgin affects them at present are:

- 37% of responses stated that on weekdays they are regularly affected by congestion at certain times of the day whilst 15% of responses stated that they are regularly affected by congestion throughout the day. This means that 52% of respondents are affected by congestion in Elgin during weekdays. 9% of responses stated that they are never affected by congestion.
- For weekends, 27% of responses stated that they are regularly affected by congestion at certain times of the day whilst 16% of responses stated that they are regularly affected by congestion throughout the day. This means that 43% of respondents are affected by congestion in Elgin at the weekend. 11% of responses stated that they are never affected by congestion.

7.3.4 Respondent's View On: "The current road network in Elgin will be capable of dealing with future transport demands."

Key findings from the questionnaires with regard to respondent's view on the question: "*The current road network in Elgin will be capable of dealing with future transport demands.*" are:

- 74% of the responses disagree or strongly disagree with this statement;
- 21% agree or strongly agree with this statement; and
- 5% have no opinion on the statement.

This represents a clear majority indicating that they do not consider the current road network to be adequate to meet future demands.

7.3.5 Respondent's Preferred Strategy

Key findings from the questionnaires with regard to respondent's view on the preferred strategy are:

- 25% of the responses prefer to take forward the Rural (Outer) Route;
- 17% of the responses prefer to take forward the Rural (Inner) Route;
- 13% of the responses prefer to take forward the Urban (Inner) Route;
- 19% of the responses prefer to take forward the Existing Network Enhancements;
- 1% of the responses have no preference on which strategy to take forward; and
- 25% of the responses prefer not to progress any of the options.

As can be seen from the above results the Rural (Outer) Route is considered to be the most popular of the 'do something' options, however, an equal level of popularity is associated with not progressing any of the options. Of the 'Do Something' options, the least popular option is the Urban (Inner) Route.



7.3.6 A Bypass of Elgin

Though not an explicit question within the questionnaire, many people chose to use the free text section to set out their preference for a bypass of Elgin. This is supported by the significant (25%) number of respondents indicating that the Rural (Outer) Route would be preferred.

The issue of a bypass of Elgin was raised in questions and clarifications by many attending the exhibition, and set out below is a summary of technical points that we consider pertinent to this point.

The A96 is a trunk road controlled by Transport Scotland and any trunk bypass of Elgin would require to be promoted by them. The Strategic Transport Projects Review (STPR) sets out Transport Scotland's strategic investment plan for the next 20 – 25 years, and the bypass was not included within this.

The major reason for this stems from a technical assessment of potential usage. Number plate recognition surveys and road side interview surveys were undertaken in 2006 and 2007 to establish overall patterns of traffic flow and assignment involving the A96 and A941 at Elgin. The results demonstrate that under 30% of traffic that enters Elgin on the A96 has a destination that is beyond Elgin on either the A96 or A941.

This means that around three-quarters of the traffic has an origin or destination that is in Elgin. This is consistent with Elgin's role as a service centre for education, employment, health, shopping and leisure.

The proportion of traffic that would therefore be attracted onto a bypass would be relatively low. This would be further exacerbated by the long length of the bypass in comparison to the current route; needed to get around the urban area. This is likely to mean that the travel time via the current route or via the bypass would not be significantly different, particularly during off-peak periods. This would dilute the limited economic benefits, which would require to offset the significant construction costs in order to give a position benefit to cost ratio.



8 CONCLUSIONS AND DELIVERY RISKS

8.1 Existing Network Enhancements

The Existing Network Enhancements require the lowest capital expenditure of the 'Do Something' options at £7.2 million, and the main influences on this figure are the roundabout at the A96 trunk road junction and the dualling of Alexandra Drive between the Halfords and Tesco roundabouts. Traffic modelling suggests that strategic junction capacity enhancements alleviate congestion within the centre of Elgin where the majority of trips are either destined or originating. This reduction in congestion and improved journey times through junctions associated with the existing network enhancements generates a cost benefit ratio of 1.2 which indicates that the benefits marginally outweigh the cost associated with the option.

The localised enhancements of existing junctions introduces both moderate adverse noise impacts and perceptible noise reductions at properties depending on geographical location. The other environmental effects of this option are of slight adverse significance with the exception of substantial adverse impacts possible on visual receptors at some locations. However, mitigation in the form of planting would reduce this impact. There is a requirement to acquire residential properties adjacent to Wittet Drive to implement one of the two potential roundabout solutions on the A96 trunk road at the northern end of Wittet Drive.

Analysis of completed exhibition questionnaires by the public reveals that approximately 1 in 5 of the returns highlighted the Existing Network Enhancements as a preferred option. This option meets the planning objective to provide a new roundabout between the A96 and Wittet Drive and also contributes to the Elgin Traffic Management objective to provide a quicker, safer and more reliable transport system in and around Elgin. However, the option does not provide an extension of Edgar Road towards Wittet Drive nor does it provide a new railway bridge connecting Wittet Drive with an Edgar Road extension.

A potential benefit of this option is the possible phased introduction which may ameliorate financing delivery of the infrastructure improvements. Junction capacity improvements could be introduced incrementally across a number of financial years facilitating greater budgetary flexibility. Furthermore, as parts of the network enhancements improve the A96 trunk road, consideration should be given to exploring funding contributions from other stakeholders such as Transport Scotland. Where private developers have projects directly affecting junctions this would also appear to be a potential source of funding contribution to deliver existing network enhancements.

The simpler junction improvements forming the existing network enhancements could be delivered without statutory road orders and land or property acquisition procedures, however other elements such as a roundabout on the A96 at the northern end of Wittet Drive would require road orders and land or property acquisition during promotion. This introduces the possibility of a Public Local Inquiry (PLI) with the resulting cost implications and delays to delivery to particular elements of the existing network enhancement option.



8.2 Urban (Inner) Route

The Urban (Inner) Route requires a substantial capital expenditure of £12.7 million with the main influences on this figure being the roundabout between the A96 and Wittet Drive and new road infrastructure south of Wittet Drive including the associated railway bridge. Traffic modelling findings suggests that this route attracts in excess of 6000 vehicles per day as it is sufficiently close to the centre of Elgin where the majority of trips are either destined or originating. It also provides an attractive alternative to existing roads within central Elgin for motorists. Traffic attracted onto the Urban (Inner) Route generates a cost benefit ratio of 1.1 which indicates that the benefits marginally outweigh the costs associated with the option.

The increases in traffic arising from the extension of Wittet Drive across the Aberdeen to Inverness railway line results in substantial adverse increases in noise levels for some properties directly adjacent to Wittet Drive however a smaller number of other properties within Elgin will see perceptible benefits in noise reductions as traffic movements are redistributed. The route also introduces substantial visual impacts. However, mitigation in the form of planting would reduce this impact. Furthermore there is a requirement to acquire residential properties adjacent to Wittet Drive to implement one of the two potential roundabout solutions on the A96 trunk road at the northern end of Wittet Drive.

Public opinion favours this option least as it is perceived as the most disruptive to Wittet Drive residents despite the potential benefits to the wider population of Elgin. Approximately 1 in 8 of the exhibition questionnaires returned highlighted the Urban (Inner) Route as a preferred option.

This option meets all of the planning objectives; providing an extension of Edgar Road towards Wittet Drive, a new railway bridge connecting Wittet Drive with an Edgar Road extension, a new roundabout between the A96 and Wittet Drive, and a link to the affordable housing site. The option also contributes to a quicker, safer and more reliable transport system in and around Elgin.

The major risks and uncertainties associated with the Urban (Inner) Route are the construction impacts on residential properties and longer term increases in traffic affecting households adjacent to Wittet Drive and Mayne Farm Road. Whilst both roundabout options at the northern end of Wittet Drive adversely impact residential properties the option at the existing A96 Wittet Drive junction also entails substantial geotechnical works to extend the embankment slope to the north of the A96 whereas the option to the west has no such geotechnical complexities. In view of concerns raised by residents of Wittet Drive to previous similar proposals, it is likely that property owners would object to the statutory road orders and land or property acquisition procedures required to promote this option. This introduces the possibility of a PLI with the resulting cost implications and delays to delivery.

A potential benefit of this option is the possible phased introduction which may ameliorate financing delivery of the infrastructure improvement. The phases would be;

- Construction of a roundabout at the northern end of Wittet Drive;
- Traffic management proposals on Wittet Drive; and
- A crossing of the Aberdeen to Inverness railway line with connection to an extended Edgar Road.



8.3 Rural (Outer) Route

The Rural (Outer) Route attracts the highest capital expenditure of all the options considered at £68.2 million, and the level of expenditure arises due to the engineering complexities associated with three crossings of the River Lossie and its flood plain. Coupled with traffic model findings that the route attracts a relatively low volume of vehicle movements (less than 2,000 vehicles per day) as most traffic trips are in and around the centre of Elgin, the cost benefit ratio is less than 0.1 for the Rural (Outer) route which does not indicate that the intervention is value for money.

The route constitutes a new transport corridor within a rural landscape to the west of Elgin introducing environmental impacts and severing the existing Riverside Caravan Park.

Public opinion does however favour this option as it is seen as least disruptive to Elgin residents and constitutes an initial phase of a wider southern bypass of Elgin. Approximately 1 in 4 of the exhibition questionnaires returned highlighted the rural (outer) route as a preferred option.

Whilst the option does not actually meet specific planning objectives it broadly matches some of these aspirations, providing a new railway crossing on the western side of Elgin and introducing a roundabout on the A96 albeit not at its junction with Wittet Drive.

The major risk and uncertainty associated with the Rural (Outer) Route is availability of public finances from the Local Authority budget to fund the project. It is also probable that directly affected parties would object to the proposals, resulting in the need for a PLI.

The potential for cross-funding from land release for development has been considered, however the complex arrangement of the road alignment with other constraints such as the River Lossie and the Aberdeen to Inverness railway line together with flood plain issues, means that it is unlikely that significant land packages could be secured, and so this would have only marginal impact on funding.

8.4 Rural (Inner) Route

The Rural (Inner) Route requires a significant capital expenditure of £24.5 million which is influenced by crossings of the River Lossie, Railway line and the B9010 Pluscarden Road. Coupled with traffic model findings that the route attracts relatively low volumes of vehicle movements (less than 2,700 vehicles per day) as most traffic trips are in and around the centre of Elgin, the cost benefit ratio is 0.2 for the Rural (Inner) Route, a ratio which does not indicate that the intervention is value for money.

The route constitutes a new transport corridor on the periphery of the Elgin built environment and whilst it minimises impact to the River Lossie flood plain it severs the existing Riverside Caravan Park, there is a requirement to acquire residential properties adjacent to Palmer Cross development and the route traverses close to the south of the relatively new housing development at the northern end of Mayne Farm Road. Analysis of completed exhibition questionnaire by the public reveals that approximately 1 in 6 of the returns highlighted the Rural (Inner) route as a preferred option.



Whilst the option does not actually meet specific planning objectives it broadly matches some of the aspirations, providing a new railway crossing on the western side of Elgin and introducing a roundabout on the A96 albeit not at its junction with Wittet Drive.

The major risks and uncertainties associated with the Rural (Inner) Route are availability of public finances from the Local Authority budget to fund the project and the impact to residential properties adjacent to Palmers Cross and Mayne Farm Road. There is no opportunity to phase the construction of the Rural (Inner) Route with commitment of the full value of estimated expenditure required at the outset of the project. It is likely that property owners would object to the statutory road orders and land or property acquisition procedures required to promote this option which has potential to result in a PLI with the resulting negative publicity, cost implications and delays to delivery.

The potential for cross-funding from land release for development has been considered, however the complex arrangement of the road alignment with other constraints such as the River Lossie and the Aberdeen to Inverness railway line together with flood plain issues, means that it is unlikely that significant land packages could be secured, and so this would have only marginal impact on funding.

8.5 Do-Nothing Scenario

The Do Nothing option is required to access to the Grampian affordable housing site and complies with the planning objective to provide a link to the affordable housing site. This access road also forms an integral part of the Rural (Inner) and Urban (Inner) Routes.



9 RECOMMENDATIONS

9.1 Rural (Outer) Route

The Rural (Outer) route has the greatest public support with 1 in 4 preferring this option. However, as the Rural (Outer) Route fails to demonstrate value for money, it is not possible to recommend this option for implementation.

9.2 Rural (Inner) Route

The Rural (Inner) Route has a degree of public support, with 1 in 6 preferring this option, however the route requires the acquisition of properties adjacent to Palmers Cross and delivery difficulties are envisaged as statutory objections opposed to this proposal are likely. As the Rural (Inner) Route fails to demonstrate value for money, it is not possible to recommend this option for implementation.

9.3 Urban (Inner) route

The Urban (Inner) Route has a substantial estimated cost, however, economic analysis does demonstrate that it provides value for money and a phased introduction of the main elements is a potential means of managing overall delivery and accommodating budgetary constraints. The Urban (Inner) Route has the least public support, with 1 in 8 preferring this option. The Urban (Inner) Route has the greatest compliance with planning objectives, however, the need for property acquisition and significant public opposition suggests that implementation in the short to medium term is likely to be problematic.

With regard to the options for junction provision between the A96 and Wittet Drive, the roundabout to the west of the existing A96 / Wittet Drive junction is preferred as it reduces geotechnical risk. It is recommended that the detailed design should be developed to established precisely how many and exactly which properties would need to be acquired thus minimising those properties with potential blight.

It is recommended the Urban (Inner) Route objectives be retained within the local plan whilst alternative short term measures are promoted, implemented and their congestion reducing performance monitored.

9.4 Existing Network Enhancements

The Existing Network Enhancements directly address the Elgin Traffic Management objectives to provide a quicker, safer and more reliable transport system in and around Elgin. The option has the lowest estimated cost and economic analysis demonstrates it provides value for money and phased introduction of the main elements is a potential means of managing overall delivery and accommodating budgetary constraints. The existing network enhancements has a degree of public support, with 1 in 5 preferring this option, similar in scale to the doing nothing or the Urban (Inner) Route.

There is flexibility in deciding which individual enhancements are taken forward and it is recommended that this option is promoted as the short term measure to be taken forward. Commencement of detailed junction design and traffic modelling to develop enhancements and establish which individual enhancements provide the greatest benefits is recommended.



9.5 Do-Nothing Scenario

It is recommended that detailed design of the Do Nothing option should be progressed to facilitate the servicing of the affordable housing site.

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APPENDIX A DRAWINGS

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