

D APPENDIX D

Economic Assessment – TEE, Cost To Government & EALI Report



D.1 TEE

D.1.1 General Methodology

The traffic and economic assessment comprises four elements:

- translation of travel time and vehicle operating costs calculated using the S-Paramics traffic models into monetary values using PEARS [Programme for the Economic Assessment of Roads Schemes]
- estimation of potential savings in accidents using NESAs
- estimation of delays during construction using QUADRO
- collation into standard TEE tables

It should be noted that at this stage the assessment does not include potential savings in maintenance (again, undertaken using QUADRO), although it does include delays during construction.

The resultant model outputs have been used to carry out an economic assessment of each of the design options, in terms of Net Present Value (NPV) and Benefit Cost Ratio (BCR). All results will be presented in 2002 prices and values.

D.2 Travel Time & Vehicle Operating Costs

D.2.1 S-Paramics Base Model

The travel time savings and vehicle operating cost savings were derived from the existing AM and PM Peak period local area S-Paramics models of Haudagain Roundabout:

- AM Peak (0700 – 1000hrs)
- PM Peak (1600 – 1900hrs)

The existing model comprises a network description that includes the roundabout and its approaches along with trip matrices reflecting traffic counts undertaken in 2004. The trip matrices are disaggregated into the five standard NESAs classifications:

- Cars
- LGV
- OGV1
- OGV2
- PSV/Coach

D.2.2 S-Paramics Future Year Do-Minimum Model

The future year base model network description was assumed to be identical to the base model.

D.2.3 S-Paramics Future Year Do-Something Model

Three design options were considered:

- Option 5
- Option 11
- Option 12.



D.2.4 Future Year Trip Matrices

As part of the operational assessment, the base models were growthed forward to a 2012 opening year and a 2027 future year design horizon.

As part of the future year trip matrix development, the matrices were adjusted to take account of any changes in demands as a result of the AWPR and/or the Third Don Crossing.

As the assessment was undertaken as a Fixed Trip Matrix (FTM) assessment, the matrices exclude any re-development of the surrounding area.

D.2.5 Annualisation of Benefits

Typically, a full 24hr model would be developed to reflect a typical weekday. Given the lack of detailed information outwith the peak periods, the benefits for the remainder of the day have been extrapolated from the peak period using ATC data on the A90(T) and A96(T) approaches:

- Site ATC 02001
- Site ATC 02010
- Site ATC 02004

Average weekday, Saturday and Sunday hourly traffic flows were derived from the ATC data and combined to produce extrapolation (or annualisation) factors. Model outputs from the S-Paramics model were then growthed up using the annualisation factors and collated to reflect the 8,760 hours of the year.

D.2.6 Summary

The outputs from the S-Paramics models were extracted and translated into monetary benefits using PEARS.

D.3 Accident Assessment

D.3.1 Accident Data

Local accident data was supplied by Aberdeen City Council. This indicated that there have been 57 personal injury accidents (PIAs) over the last 5 years. Many more accidents were recorded in the surrounding area, but are outwith the scope of the modelled network.

This includes PIAs at Haudagain Roundabout itself and 13 PIAs at the junction of North Anderson Drive/Middlefield Pace

D.3.2 NESAs Assessment

Separate NESAs models were developed for the Base and each of the Design options. The NESAs Node/Link diagrams are attached.

The recommended methodology is to adopt local accident rates and default costs in the Base and default rates and default cost in the design. Despite the high number of accidents recorded, given the high volumes of traffic using the network, the local accident rates are lower than the default values [Ref: *DMRB 15*, Table 6/6/1, August 2002].

This would result in an increase in accidents between the Base and Design which is counter intuitive. Consequently, default accident rates and default costs have been adopted in both Base and Design networks.



D.3.3 Summary

The results of the accident assessment indicate that each of the options will realise savings in accidents.

- Option 5 £0.64M
- Option 11 £1.01M
- Option 12 £2.57M

It should be noted that both Options 5 and 11 include new sections of carriageway. Consequently, both will incur accidents and partially offset the savings at Haudagain itself.

D.4 Construction & Maintenance

D.4.1 Construction

Delays during construction will be potentially quite significant. Discussions with Aberdeen City Council resulted in the following construction programmes:

- **Option 5:** Mainly offline alignment with only significant impact to traffic being in the construction of the tie-in junction at either end. The assessment assumes 16 weeks of 2 lane, two-way working.
- **Option 11:** As above but with additional works on Mugiemoor Road. The exact traffic management arrangements cannot be accurately predicted at this stage but the works are likely to require shuttle working while the new bridge is constructed. The assessment assumes 16 weeks of 2 lane, two-way working on North Anderson Drive and 20 weeks of shuttle working on Mugiemoor Road.
- **Option 12:** Again, the exact traffic management arrangements cannot be accurately predicted at this stage but the works are likely to require shuttle working while the new bridge is constructed to the west of the existing bridge. Given the larger earthworks involved, the assessment assumes 24 weeks of shuttle working on Mugiemoor Road.

A summary is given in the following Table.

D.4.2 Maintenance

Savings in delays during maintenance have not been assessed at this stage.



D.5 Results**D.5.1 Option 5 (Default Accident Rates & Costs)***TABLE 15A: ECONOMIC EFFICIENCY OF THE ROAD SYSTEM (in Market Prices)*

IMPACT	Table Ref.	TOTAL	Cars & Private LGV	Goods Vehs & Business LGV	Bus & Coach
CONSUMER USERS					
User Benefits:					
Travel Time (including junction delays)	(1)	138.43	121.97	-	16.46
Vehicle Operating Costs	(2)	4.94	4.94	-	-
Travel Time & Vehicle Operating Costs:					
During Construction	(3)	-0.04	-0.04	-	0.00
During Maintenance	(4)	0.00	0.00	-	0.00
Net Consumer User Benefits		143.33			
BUSINESS USERS					
User Benefits:					
Travel Time (including junction delays)	(5)	88.48	54.38	27.93	6.17
Vehicle Operating Costs	(6)	5.17	2.12	3.05	-
Travel Time & Vehicle Operating Costs:					
During Construction	(7)	-0.03	-0.02	-0.01	0.00
During Maintenance	(8)	0.00	0.00	0.00	0.00
Net Business User Benefits		93.62			
PRIVATE SECTOR PROVIDER IMPACTS					
Operating Costs	(9)	2.19	-	-	2.19
Other Business Impacts:					
Developer & Other Contributions	(10)	0	-	-	
Net Business Impact		95.81			
Total Present Value of TEE Impacts	(11)	239.14			

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002

Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%



TABLE 15B: PUBLIC ACCOUNTS

IMPACT	Table Ref.	TOTAL
LOCAL GOVERNMENT FUNDING		
Investment Costs (Capital Costs)	(12)	0
Operating Costs	(13)	0
Maintenance Costs:		
Non-Traffic(Group 1)	(14)	-
Traffic Related (Group 2)	(15)	-
Developer & Other Contributions	(16)	0
Net Impact		0.00
CENTRAL GOVERNMENT FUNDING		
Investment Costs (Capital Costs)	(17)	10.76
Operating Costs	(18)	0
Maintenance Costs:		
Non-Traffic(Group 1)	(19)	0.00
Traffic Related (Group 2)	(20)	0.00
Developer & Other Contributions	(21)	0.00
Indirect Tax Revenues	(22)	5.63
Net Impact		16.39
Present Value of Costs (PVC)		16.39

Maintenance Savings Not Calculated

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002

Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%



TABLE 15C: ANALYSIS OF MONETISED COSTS AND BENEFITS

IMPACT	Table Ref.	TOTAL
TEE IMPACTS		
Consumer User Impacts	(24)	143.33
Business User Impacts	(25)	93.62
Private Sector Provider Impacts	(26)	2.19
Accident Benefits	(27)	0.64
Present Value of Benefits (PVB)	(28)	239.78
Government Funding		
Present Value of Costs (PVC)	(23)	16.39
Overall Impact		
Net Present Value (NPV)	(29)	223.39
Benefit to Cost Ratio To Government	(30)	14.63
	(BCR_{GOVT})	
Benefit to Cost Ratio To Funding Authority	(31)	21.76
	(BCR_{FA})	

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002
Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%

Benefit Cost Ratio to Government (BCR_{GOVT}) includes Indirect Tax Revenue (ITR) based on the formula:

$$\bullet \quad BCR_{GOVT} = PVB/PVC_{inc. ITR}$$

Benefit Cost Ratio to Funding Authority (BCR_{FA}) excludes Indirect Tax Revenues (ITR) based on the formula:

$$\bullet \quad BCR_{FA} = (PVB - PVC_{inc. ITR} + PVC_{exc. ITR})/PVC_{exc. ITR}$$



D.5.2 Option 11 (Default Accident Rates & Costs)

TABLE 15A: ECONOMIC EFFICIENCY OF THE ROAD SYSTEM (in Market Prices)

IMPACT	Table Ref.	TOTAL	Cars & Private LGV	Goods Vehs & Business LGV	Bus & Coach
CONSUMER USERS					
User Benefits:					
Travel Time (including junction delays)	(1)	126.68	112.26	-	14.42
Vehicle Operating Costs	(2)	4.07	4.07	-	-
Travel Time & Vehicle Operating Costs:					
During Construction	(3)	-1.05	-1.01	-	-0.04
During Maintenance	(4)	0.00	0.00	-	0.00
Net Consumer User Benefits		129.70			
BUSINESS USERS					
User Benefits:					
Travel Time (including junction delays)	(5)	80.98	49.72	25.86	5.40
Vehicle Operating Costs	(6)	4.70	1.88	2.82	-
Travel Time & Vehicle Operating Costs:					
During Construction	(7)	-0.95	-0.63	-0.31	-0.01
During Maintenance	(8)	0.00	0.00	0.00	0.00
Net Business User Benefits		84.73			
PRIVATE SECTOR PROVIDER IMPACTS					
Operating Costs	(9)	1.80	-	-	1.80
Other Business Impacts:					
Developer & Other Contributions	(10)	0	-	-	
Net Business Impact		86.53			
Total Present Value of TEE Impacts	(11)	216.23			

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002

Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%



TABLE 15B: PUBLIC ACCOUNTS

IMPACT	Table Ref.	TOTAL	
LOCAL GOVERNMENT FUNDING			
Investment Costs (Capital Costs)	(12)	0	
Operating Costs	(13)	0	
Maintenance Costs:			
Non-Traffic(Group 1)	(14)	-	
Traffic Related (Group 2)	(15)	-	
Developer & Other Contributions	(16)	0	
Net Impact		0.00	
CENTRAL GOVERNMENT FUNDING			
Investment Costs (Capital Costs)	(17)	20.83	
Operating Costs	(18)	0	
Maintenance Costs:			
Non-Traffic(Group 1)	(19)	0.00	
Traffic Related (Group 2)	(20)	0.00	Maintenance Savings Not Calculated
Developer & Other Contributions	(21)	0.00	
Indirect Tax Revenues	(22)	4.58	
Net Impact		25.41	
Present Value of Costs (PVC)		25.41	

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002

Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%



TABLE 15C: ANALYSIS OF MONETISED COSTS AND BENEFITS

IMPACT	Table Ref.	TOTAL
TEE IMPACTS		
Consumer User Impacts	(24)	129.70
Business User Impacts	(25)	84.73
Private Sector Provider Impacts	(26)	1.80
Accident Benefits	(27)	1.01
Present Value of Benefits (PVB)	(28)	217.24
Government Funding		
Present Value of Costs (PVC)	(23)	25.41
Overall Impact		
Net Present Value (NPV)	(29)	191.83
Benefit to Cost Ratio To Government	(30)	8.55
	(BCR_{GOVT})	
Benefit to Cost Ratio To Funding Authority	(31)	10.21
	(BCR_{FA})	

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002

Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%

Benefit Cost Ratio to Government (BCR_{GOVT}) includes Indirect Tax Revenue (ITR) based on the formula:

- $BCR_{GOVT} = PVB/PVC_{inc. ITR}$

Benefit Cost Ratio to Funding Authority (BCR_{FA}) excludes Indirect Tax Revenues (ITR) based on the formula:

- $BCR_{FA} = (PVB - PVC_{inc. ITR} + PVC_{exc. ITR})/PVC_{exc. ITR}$



D.5.3 Option 12 (Default Accident Rates & Costs)

TABLE 15A: ECONOMIC EFFICIENCY OF THE ROAD SYSTEM (in Market Prices)

IMPACT	Table Ref.	TOTAL	Cars & Private LGV	Goods Vehs & Business	Bus & Coach
CONSUMER USERS					
User Benefits:					
Travel Time (including junction delays)	(1)	143.67	127.57	-	16.10
Vehicle Operating Costs	(2)	6.81	6.81	-	-
Travel Time & Vehicle Operating Costs:					
During Construction	(3)	-1.20	-1.16	-	-0.04
During Maintenance	(4)	0.00	0.00	-	0.00
Net Consumer User Benefits		149.28			
BUSINESS USERS					
User Benefits:					
Travel Time (including junction delays)	(5)	82.64	49.69	26.93	6.02
Vehicle Operating Costs	(6)	5.54	2.16	3.38	-
Travel Time & Vehicle Operating Costs:					
During Construction	(7)	-1.11	-0.73	-0.37	-0.01
During Maintenance	(8)	0.00	0.00	0.00	0.00
Net Business User Benefits		87.07			
PRIVATE SECTOR PROVIDER IMPACTS					
Operating Costs	(9)	2.45	-	-	2.45
Other Business Impacts:					
Developer & Other Contributions	(10)	0	-	-	
Net Business Impact		89.52			
Total Present Value of TEE Impacts	(11)	238.80			

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002
Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%



TABLE 15B: PUBLIC ACCOUNTS

IMPACT	Table Ref.	TOTAL
LOCAL GOVERNMENT FUNDING		
Investment Costs (Capital Costs)	(12)	0
Operating Costs	(13)	0
Maintenance Costs:		
Non-Traffic(Group 1)	(14)	-
Traffic Related (Group 2)	(15)	-
Developer & Other Contributions	(16)	0
Net Impact		0.00
CENTRAL GOVERNMENT FUNDING		
Investment Costs (Capital Costs)	(17)	17.79
Operating Costs	(18)	0
Maintenance Costs:		
Non-Traffic(Group 1)	(19)	0.00
Traffic Related (Group 2)	(20)	0.00
Developer & Other Contributions	(21)	0.00
Indirect Tax Revenues	(22)	7.20
Net Impact		24.99
Present Value of Costs (PVC)		24.99

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002

Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%



TABLE 15C: ANALYSIS OF MONETISED COSTS AND BENEFITS

IMPACT	Table Ref.	TOTAL
TEE IMPACTS		
Consumer User Impacts	(24)	149.28
Business User Impacts	(25)	87.07
Private Sector Provider Impacts	(26)	2.45
Accident Benefits	(27)	2.57
Present Value of Benefits (PVB)	(28)	241.37
Government Funding		
Present Value of Costs (PVC)	(23)	24.99
Overall Impact		
Net Present Value (NPV)	(29)	216.38
Benefit to Cost Ratio To Government	(30)	9.66
	(BCR_{GOVT})	
Benefit to Cost Ratio To Funding Authority	(31)	13.16
	(BCR_{FA})	

This analysis is based on LOCAL traffic growth
and LOCAL economic Growth

Costs are in 2002 prices in multiples of a Millions of pounds and are discounted to 2002

Evaluation Period is 15 years

First Scheme Year is 2012

Current Year is 2005

Discount Rate is 3.5% for first 30 years, thereafter 3.0% for 46 years, thereafter 2.5%

Benefit Cost Ratio to Government (BCR_{GOVT}) includes Indirect Tax Revenue (ITR) based on the formula:

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Benefit Cost Ratio to Funding Authority (BCR_{FA}) excludes Indirect Tax Revenues (ITR) based on the formula:

- $BCR_{FA} = (PVB - PVC_{inc. ITR} + PVC_{exc. ITR})/PVC_{exc. ITR}$



D.6 EALI





Aberdeen City Council, NESTRANS and Transport
Scotland
HAUDAGAIN A90/A96 JUNCTION IMPROVEMENTS



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Economic Development Report
DRAFT FINAL REPORT
May 2008

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1 INTRODUCTION

Background and Remit

- 1.1 Roger Tym & Partners forms part of the consultants consortium led by SiAS appointed by Aberdeen City Council (on behalf of NESTRANS & Transport Scotland) to prepare an economic development and impact report for the A90 & A96 Haudagain roundabout junction improvement, in Aberdeen. This report includes a review of baseline information, and assessment of the potential economic, development, and business impacts deriving from the alternative junction and road improvement options.
- 1.2 This separate Economic Development Report provides appropriate economic baseline and contextual information as direct input into the overall STAG 2 appraisal work programme. This information provides a broad economic and land use assessment of Aberdeen City, with particular emphasis being placed upon the A90-A96 Haudagain junction and its immediate surrounding areas.
- 1.3 In addition, this Economic Development Report provides the required appraisal and analysis aspects of the subsequent Economic Activity and Locational Impacts (EALI) of the implementation of the Haudagain junction improvement, within the immediate local wards, Aberdeen City, the wider area, and at the Scottish level.

Structure of the Report

- 1.4 Following this brief introductory section, the report is structured as follows:
 - Section 2 - Socio-Economic Context;
 - Section 3 - Policy Context;
 - Section 4 - Stakeholder Consultation;
 - Section 5 - Business Survey Analysis; and
 - Section 6 -Conclusions

2 SOCIO-ECONOMIC CONTEXT

Introduction

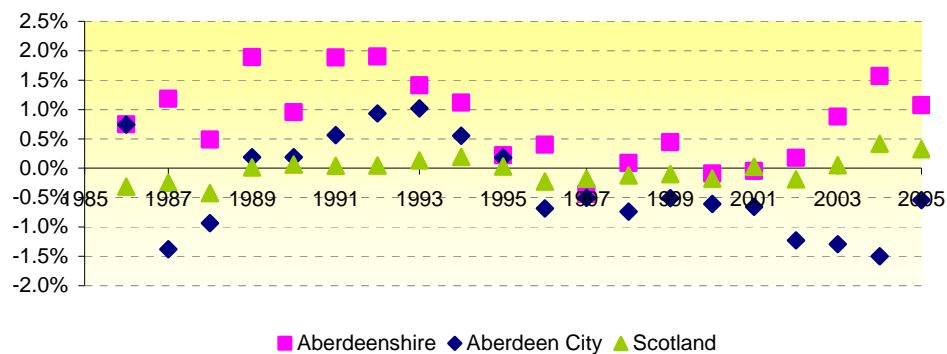
- 2.1 This section provides an overview of the socio-economic context and examines in further detail the economic characteristics and performance of the Aberdeen and Aberdeenshire (i.e. City and Shire) areas. Although, much of the information and statistics may have been derived from a range of sources, it seeks to provide a broad overall assessment of the socio-economic context of the A90-A96 Haudagain area.

Socio-Economic Profile

Population

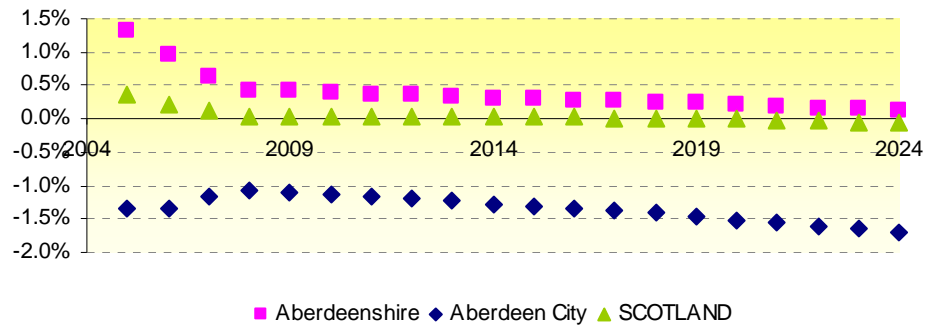
- 2.2 According to the GRO for Scotland, the population in Aberdeenshire was estimated at 238,770 in 2006 with a further 202,090 resident in the City of Aberdeen.
- 2.3 From 2001 to 2006, the population in Aberdeen City decreased by 4.6% while Aberdeenshire experienced an increase of 5.2% during the same time period. There was a small negative natural population change in Aberdeen City and a larger positive change in Aberdeenshire. The population change can be explained by large out-migration from Aberdeen City, -9,384 people and an in-migration to Aberdeenshire of +10,723 people.
- 2.4 In contrast to Aberdeen City, Aberdeenshire has experienced an increase in population almost every year since 1986, illustrated Figure 2.1 and 2.2 below. The population in Aberdeenshire is projected to continue to grow at a faster rate than in the rest of Scotland for every year up to 2024 while the population in Aberdeen City is projected to continue to decline over the same period [Note. Population figures were relevant at the time of undertaking this report but may be subject to future review].

Figure 2.1 Yearly Change in Population, 1986-2005



Source: ONS midyear population estimates

Figure.2.2. Population Projections, 2004-based (% change p.a.)



Source: GRO in Scotland

Employment and Earnings

- 2.5 Generally, Aberdeen City and Aberdeenshire perform well compared to Scotland. Economic activity is higher than the Scottish average, unemployment lower, higher average earnings are higher, and a larger share of the population has higher educational and related qualifications.
- 2.6 Working age population is higher in Aberdeen City (65.8%) than in Aberdeenshire (62.2%) while the share of economically active is lower and unemployment is higher (see table 2.1).
- 2.7 A larger proportion of residents in Aberdeen City have the highest qualification, NVQ4 (34.1%) compared to Aberdeenshire however, there are also a higher proportion of people without any formal qualifications.

Table 2.1 Socio-Economic Indicators

Economic Indicators	Aberdeen	Aberdeenshire	Scotland
Total Population (2006)	202,090	238,770	5,094,800
Working Age Population (2005)	65.8%	62.2%	62.6%
Economically Active (Jul 05-Jun 06)	82.1%	83.6%	79.5%
Unemployed (Jul 05 - Jun 06)	4.8%	3.4%	5.55
Weekly Earnings by workplace 2006	£481.00	£435.60	£432.00
Weekly Earnings by residence 2006	£459.50	£468.10	£431.40
NVQ4 and above	34.1%	30.7%	30.6%
No qualifications	12.5%	9.6%	14.7%
Average number of cars or vans/household 2001*	0.91	1.30	0.93

Source: ONS (NOMIS) * 2001 Census

- 2.8 Average gross weekly earnings are relatively high, £481 for people working in Aberdeen City and £435.6 for people working in Aberdeenshire, compared to the

Scottish average of £432. Average Earnings by residence on the other hand is higher for people in Aberdeenshire than for people in Aberdeen City, indicating that these people commute to outside Aberdeenshire for higher paid jobs, possibly into Aberdeen City.

Occupational Profile

- 2.9 Table 2.2 shows that Aberdeen City has the largest share of managers and professionals while Aberdeenshire has the largest share of people in skilled occupations. Compared to Scotland Aberdeenshire performs particularly well with a higher a proportion of people employed in skilled, professional and managerial jobs and a lower number of employees in low skilled occupations.

Table.2.2. Employment by Occupation (July 2005-June 2006)

	Aberdeen City	Aberdeenshire	Scotland
Managers and Professionals	43.9	40.7	39.8
Skilled Occupations	19.0	24.9	23.4
Low-skilled Occupation	37.1	34.4	36.6

Source: ONS Annual Population Survey

Gross Value Added

- 2.10 Gross Value Added (GVA) is effectively the measure of economic output by businesses and should not be confused with household incomes. GVA is defined as the total contribution to the local / sub-regional or national economy of each individual, individual producer or economic sector. GVA, which has now generally replaced the more commonly known Gross Domestic Product (GDP), is effectively GDP at market prices less taxes plus subsidies on products. Together, GVA and GDP data are produced and used by the Office of National Statistics (ONS) to provide measures of total economic activity and economic growth at a regional and national level, respectively.
- 2.11 In terms of both GVA per head and GVA per worker Aberdeenshire and Aberdeen City perform better than for Scotland in general.

Table.2.3. GVA: Aberdeen City and Aberdeenshire, 2004

	Aberdeen City and Shire	Scotland
GVA per head	£21,638	£16,334
GVA per worker	£39,975	£35,946

Source: Aberdeen City and Shire Economic Review 2007

Areas of Relative Deprivation

- 2.12 The Scottish Index of Multiple Deprivation (SIMD) is the Scottish Executives official tool for identifying small area concentrations of multiple deprivations across Scotland.¹ Analysis of the SIMD statistics shows that some of the areas close to the

¹ The SIMD provides a relative ranking of 6,505 small areas (data zones) across Scotland from the most deprived (ranked one) to the least deprived (ranked 6,505). The SIMD 2006 is based on 37 indicators in seven 'domains: income; employment; health; education; geographic access to services and housing and a crime domain. The crime domain is a collection of selected recorded crimes linked to deprivation.

Haudagain junction are among the most deprived in Scotland. The data zones presented in the table below are around the study area. There is a marked difference between areas to the east of the A90 and those to the west. Data zones west of the A90 have serious problems in terms in terms deprivation measures and social exclusion whereas the areas to east don't suffer the same levels of deprivation.

Table.2.4. Deprivation in 2006

Data Zones*	SIMD rank	Income rank	Employment rank
West of the A90			
S01000209	35	27	145
S01000198	319	337	445.5
S01000208	173	268	189
East of the A90			
S01000201	2301	2664	2079
S01000221	1573	1372	1790
S01000213	1477	1760	1397

Source: Scottish Executive. * For a map of data zones, see Appendices.

Analysis by Industrial Sector

- 2.13 Agriculture has previously been a strong sector in Aberdeenshire but full-time jobs have been lost over recent years. However, the number of seasonal/casual jobs increased from 2005 to 2006, resulting in an increase of total labour employed.²
- 2.14 New quotas have set restrictions on the fishing industry, resulting in a continued decline in vessels and employment in this sector. Between 2004 and 2005, there was a 9% decline in fishermen in North East Scotland, to a total of 1,448.³
- 2.15 The energy sector is benefiting from an upturn in global demand and the consequent increase in oil prices. Around 40,000 people work in the energy sector in Aberdeen City and Shire. The offshore element of this industry increases demand for services at Aberdeen Airport and energy related traffic has helped increase activity at the airport. Revenues from the energy industry have also contributed in making Aberdeen an important retailing centre attracting customers from outside of the city.⁴
- 2.16 Traffic to and from the airport flows through Haudagain junction. Aberdeen Airport is the 3rd largest in Scotland in terms of terminal passengers, experiencing passenger growth of 8.3% in 2005, and 5% growth in 2004. The airport handled 2,852,000 passengers in 2005 and 4000 tonnes of cargo in 2006.⁵
- 2.17 The energy and financial services sectors are relatively more important to Aberdeen than to Aberdeenshire and Scotland. In contrast, manufacturing and construction are relatively large sectors in Aberdeenshire. Relative sector shares of employment are shown in Figure 2.3 below.

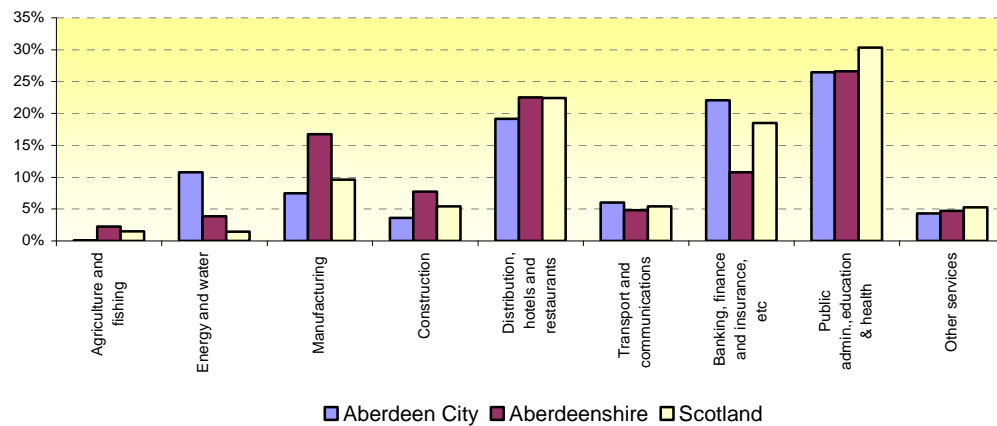
² Aberdeen City and Shire Economic review 2007

³ Aberdeen City and Shire Economic review 2007

⁴ Aberdeen City and Shire Economic Review 2007

⁵ Aberdeen City Council 2007 City Focus

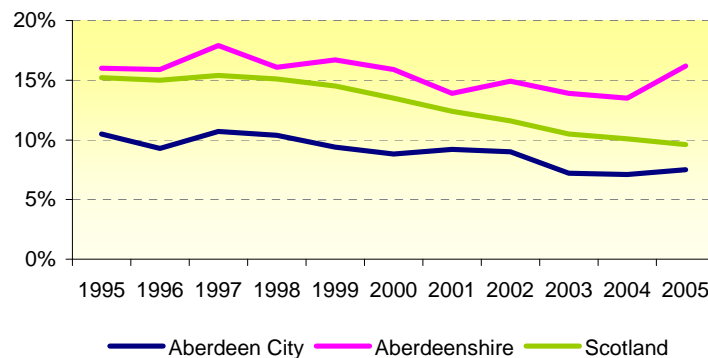
Figure 2.3 Employees per sector, 2005



Source: ABI

- 2.18 The manufacturing sector is significantly more important to Aberdeenshire than to the Aberdeen economy. Above 15% of employees work in manufacturing in Aberdeenshire compared to 7% in Aberdeen. Figure 2.4 illustrates that over the last ten years the manufacturing sector has not experienced the same decline as in the rest of Scotland.

Figure 2.4 Manufacturing Employee Jobs, 1995-2005



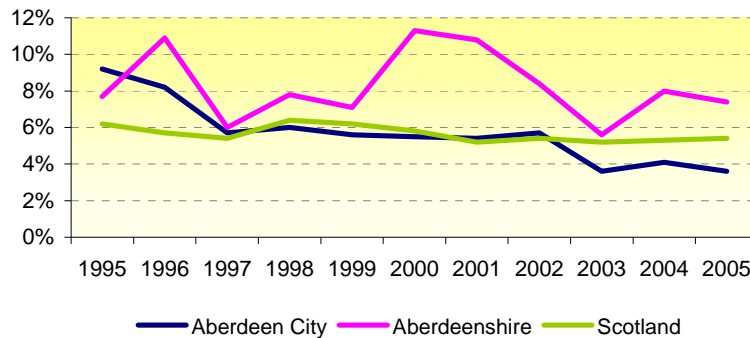
Source: ONS

- 2.19 UK total orders and output volumes in the engineering sector have improved and as a result this has led to increased recruitment and sometimes skill shortages in the North East. Scottish Engineering Quarterly for 2007 showed an increase in optimism in the sector.⁶
- 2.20 Food and fish processing is another important manufacturing sector in the region. The food processing industry grew by 17.2% in 2004 and 2005 and manufacturers expect turnover and employment to increase over the next 5 years.⁷
- 2.21 Figure 2.5 shows that, during the last ten years the construction sector has experience a relatively large decline in Aberdeen City while in Aberdeenshire it has been growing at a level higher than the Scottish average.

⁶ Aberdeen City and Shire Economic review 2007

⁷ Aberdeen City and Shire Economic review 2007

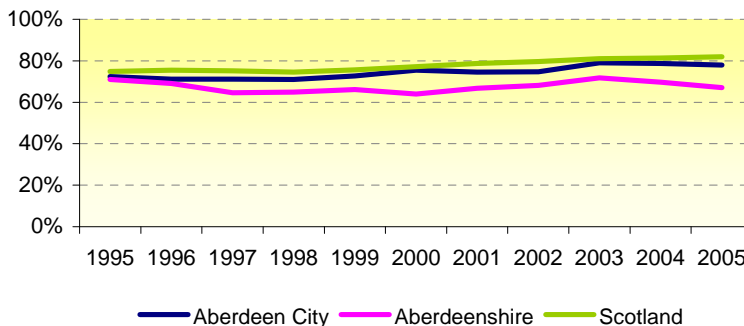
Figure.2.5. Construction Employee Jobs, 1995-2005



Source: ONS

- 2.22 Construction employment currently accounts 4.9% of Aberdeen City and Shire's total workforce and the construction sector has earlier been constrained by recruitment shortages but fewer firms are now experiencing difficulties recruiting staff. The sector is expected to grow in the future with the planned construction of the Aberdeen Western Peripheral Route as well as construction of new housing, retail developments, construction of a school building and a refurbishment programme.⁸
- 2.23 The service sector in Aberdeen City provides 78% of all jobs, in Aberdeenshire it accounts for 67% of all employee jobs in the region.⁹ The services sector is relatively more important to Aberdeen City than Aberdeenshire. Figure 4 illustrates that during 1995 to 2005, this sector accounted for a smaller proportion of jobs in the two areas than the Scottish average. In Aberdeen City, other than public administration and financial services this sector is to a large degree dependent on the oil and gas industry. The energy sector generates significant wealth in the local economy and contributes to high consumer spending.¹⁰

Figure.3 Service Employee Jobs, 1995-2005



Source: ONS

Summary

- 2.24 Overall, the Aberdeen City and Aberdeenshire economies have performed well in recent years. Employment has been robust; average pay, GVA per head and GVA per worker is higher than the Scottish average; and the number of people in highly skilled, professional and managerial positions is high compared to Scotland.

⁸ Aberdeen City and Shire Economic review 2007

⁹ This sector includes jobs in public administration, health, education, financial services, other business services, IT, retail, restaurants, hotels, distribution, transport, communication and tourism.

¹⁰ Aberdeen City and Shire Economic review 2007

- 2.25 It is the dynamics of each of the economies that are of most interest, particularly in relation to each other. Key features are that:
- The population of Aberdeenshire is growing in contrast to a declining population in Aberdeen City [Note. Population figures were relevant at the time of undertaking this report but may be subject to future review].;
 - Manufacturing and construction jobs are increasing in Aberdeenshire at a much higher growth rate than Aberdeen City;
 - Aberdeen City employs a higher proportion of workers in the service sector which attracts commuters from Aberdeenshire;
 - Some of the neighbourhoods west of Haudagain junction are amongst the most deprived in Scotland; and
 - Aberdeen Airport is the 3rd largest in Scotland in terms of terminal passengers, it experienced passenger growth of 8.3% in 2005, and 5% growth in 2004.
- 2.26 Traffic to and from Aberdeen Airport also flows through Haudagain junction. The airport is important for businesses, particularly for the oil and gas sector.
- Around 40,000 people work in the energy sector in Aberdeen City and Shire. Energy related traffic has helped increase activity at the airport, and revenues from the energy industry have also contributed in making Aberdeen an important retailing centre attracting customers from outside the city.¹¹
 - The airport handled 2,852,000 passengers in 2005 and 4000 tonnes of cargo in 2006.¹²

¹¹ Aberdeen City and Shire Economic Review 2007

¹² Aberdeen City Council 2007 City Focus

3 POLICY CONTEXT

Introduction

- 3.1 This section examines the wide ranging and diverse number of policies and initiatives currently being pursued and implemented, which impact upon and affect the A90-A96 Haudagain roundabout and junction. This assessment primarily considers:
- National Planning Framework for Scotland;
 - National Planning Policy Guidelines (NPPG);
 - Scottish Planning Policy (SPP) statements, which will gradually replace NPPG;
 - Aberdeen and Aberdeenshire Structure Plan;
 - Aberdeen City Local Plan; and
 - Other Policies, Programmes and Initiatives.

National Planning Framework

- 3.2 The National Planning Framework for Scotland is a planning document that analyses the underlying trends in Scotland's territorial development, the key drivers of change and the challenges. It is one of the factors taken into account in coming to decisions on policy and spending priorities as well as providing a context for development plans and planning decisions.
- 3.3 The framework sets the strategic context to the year 2025, and for the Haudagain junction improvement. Transport policy is based on supporting promotion of economic growth, promoting social inclusion and accessibility, while ensuring the development of transport is sustainable and minimises environmental impact of travel.
- 3.4 The Haudagain junction improvements will further the strategic development of the Aberdeen-Edinburgh-Newcastle corridor, identified as offering opportunities to develop knowledge economy links based on the expertise associated with energy and offshore industries and Aberdeen, Dundee, St Andrews, Edinburgh and Newcastle universities. Investment and improvements to the Haudagain roundabout will help to reduce road journey times and help realise this potential.

National Planning Policy Guidelines

- 3.5 National Planning Policy Guidelines (NPPG) provides key statements of Scottish Executive planning and land use policy. Although these are partially being replaced by the new Scottish Planning Policies (SPP), all the existing NPPG will continue to retain significant relevance to the policy decision making process until such time as they are formally replaced.
- 3.6 There is a wide and diverse range of NPPG statements that are applicable to the project's study area. These comprise (excluding replacement SPP):
- NPPG 5 - Archaeology and Planning;
 - NPPG 6 - Renewable Energy Developments;
 - NPPG 9 - The Provision of Roadside Facilities on Motorways and Other Trunk Roads in Scotland;
 - NPPG 10 - Planning and Waste Management;
 - NPPG 11 - Sport, Physical Recreation and Open Space;

- NPPG 14 - Natural Heritage;
- NPPG 15 - Rural Development;
- NPPG 16 - Open Cast Coal and Related Minerals;
- NPPG 17 - Transport and Planning (and SPP 17 Addendum); and
- NPPG 18 - Planning and the Historic Environment.

Scottish Planning Policies

- 3.7 Scottish Planning Policies (SPP) provides statements of Scottish Executive policy on nationally important land use and other planning matters.
- 3.8 Although there are an increasing number of SPP statements being prepared, which will be directly relevant to this project, many of the key policies are contained within:
- SPP 1 - The Planning System;
 - SPP 2 - Economic Development;
 - SPP 3 - Planning for Housing;
 - SPP 7 - Planning and Flooding;
 - SPP 8 - Town Centres and Retailing; and
 - SPP17 - Planning for Transport.

Aberdeen and Aberdeenshire Structure Plan

- 3.9 The Aberdeen and Aberdeenshire Structure Plan aims to integrate the linkages between land use and transport across the City and Shire through policies that will facilitate a positive input to the economy, environment and promote social inclusion.
- 3.10 The Haudagain junction improvement is in accordance with:
- Policy 30 - Main Communications Network within the North East and beyond;
 - Policy 31 - Connecting Communities within the North East; and
 - Policy 32 - Transport Infrastructure: Safeguarding Land and Minimising Environmental Impacts.
- 3.11 The transport network proposals comply with the above policies by improving the transport infrastructure, through contributing to a modern transport system and by reducing congestion and vehicle exhaust emissions.

Aberdeen City Local Plan

- 3.12 The Town and Country Planning (Scotland) Act 1997 requires that all decisions on any planning applications and development control matters should be made in accordance with current (local and structure plan) development plan policy unless there are other relevant material considerations that indicate otherwise.
- 3.13 The Finalised Aberdeen Local Plan 2004: Green Spaces New Places sets out the Council's current and emerging detailed policies and proposals to guide and control development and land use across the City. The plan is to be subject to a public inquiry during 2006.
- 3.14 In respect of the Haudagain roundabout junction, whilst there are emerging proposals under consideration for improvement through this exercise, the 2004 Local Plan does not specifically identify under Policy 72 (Land for Transport Proposals) any further land in the immediate vicinity of the junction to accommodate such improvements. The potential implementation of any junction improvements at

Haudagain may necessitate a future alteration to both the Local Plan and the Middlefield Masterplan.

Other Policies, Programmes and Initiatives

- 3.15 A range of other policies and programmes currently exist and are appropriate to the area surrounding the Haudagain roundabout and junction. These comprise various strategies and initiatives including the: Regional and Local Transport Strategy and Plan, the Middlefield Regeneration Masterplan, Aberdeen Community Plan and a variety of other local policies and initiatives.

NESTRANS Regional Transport Strategy

- 3.16 North East Scotland Transport Partnership (NESTRANS) have responsibility for the development and delivery of the regional transport strategy for the Aberdeen City and Aberdeenshire region that meets current and future challenges. The finalised regional transport strategy was published in March 2007.
- 3.17 The Haudagain junction is identified in the strategy as a strategic road that requires improvements to capacity, under the 'internal connections strategy'. This has been identified and highlighted as a key priority for action.

Local Transport Strategy

- 3.18 The Draft Local Transport Strategy (LTS) offers the City Council's vision for transport in the City over the years 2007 to 2012. It sets out a number of choices facing the City in tackling issues such as traffic congestion, air pollution, the reliability of public transport and concerns about road and traffic safety.
- 3.19 The strategy includes the implementation of the scheme of transport initiatives that at present include improvements to the A90 Haudagain junction. This is consistent with the achievement of the five national and LTS key objectives of: economic, safety and security, accessibility, environmental, and integration.

Middlefield Regeneration Masterplan

- 3.20 The Middlefield Regeneration Masterplan was prepared on behalf of the Aberdeen City Council and published in Draft in February 2007, and acts as one of six masterplans prepared for key regeneration areas across the City. It is the noted intention of the City Council, to formally adopt the Masterplan as Supplementary Planning Guidance, once it has been finalised and duly approved by Council.
- 3.21 The Middlefield Masterplan (Draft) has been developed to date, on the basis of two development scenarios that reflect the three options under review as part of the current Haudagain junction improvement scheme and STAG appraisal. The preferred option identified by the Middlefield Masterplan is shown to comprise a new relief road linked to the improvement of the Haudagain roundabout.
- 3.22 This option provides an opportunity for the creation of a new commercial development situated on the island of land between the new relief road and the existing A90/A96 junction. It is viewed as having potential to create new and improved facilities (and possibly new employment) in the Middlefield area, as well as acting as a source for the generation of potential capital investment.

Aberdeen Community Plan

- 3.23 The Aberdeen Community Plan outlines a vision for the future social, economic and environmental design for Aberdeen. Central to the plan's vision for a sustainable City is an integrated transportation system. The Haudagain junction improvements would further the plan's four key transportation aims of: integration; accessibility; choice; and partnership.

4 STAKEHOLDER CONSULTATION

Scope of Consultation

- 4.1 A series of key stakeholder consultations were undertaken in July 2007, to determine the consultees' current views of the proposed junction and road improvements in terms of economic development and planning issues.
- 4.2 These comments related specifically to Haudagain roundabout junction and associated improvements, although during the course of these key consultations some aspects of potential associated improvements elsewhere in Aberdeen were raised.
- 4.3 A list of the key stakeholders consulted is provided in Appendix 2.

Summary of Key Issues from Consultation

- 4.4 The following provides a summary of the key issues raised by each of the individual stakeholder organisations during the consultation process.

Aberdeenshire Council, Aberdeen & Aberdeenshire Structure Plan Team

- No material difference to the interests of either land use planning in Aberdeenshire, or to the Structure Plan, from three options outlined.
- None of the options address fundamental issue about access to the North West from Anderson Drive, and overall capacity of Auchmill Road and Anderson Drive.
- Recognise the need for intervention but remain to be convinced of the wider benefits of the proposed options, and effects they will have on strategic interests.
- With limited access into the City from the proposed AWPR, concern that the congestion at Kingswells and at Haudagain will persist until an additional link from the west is provided.
- Believe that officers at Aberdeen City Council are considering major urban expansion into Greenfield area between Kingswells and Bucksburn, over the next 25 (strategic) years.
- Such a spatial strategy would provide an opportunity to fundamentally change the overall accessibility of this part of the City and Shire.

Aberdeen City Council

- Significant development constraints in Northern parts of City including the Bridge of Don, Dyce and the Airport. These would be alleviated via individual and collective proposed transport and accessibility improvements. This would comprise at first the Haudagain, followed by Third Don Crossing, AWPR etc.
- These major improvements would assist in the full realisation of the City's development potential, with the prospect of economic growth and opportunities as a direct result.
- Site re-development opportunity at former Davidson's Mill on adjoining Mugiemoor Road, as identified in supplementary planning guidelines. Haudagain roundabout and any new changes to traffic flows and movement will have implications for this mixed use scheme.
- Middlefield Regeneration Masterplan - in draft subject to Council approval through means of a supplementary planning guidance. Implementation of the preferred option will to a degree be dictated by the Haudagain preferred option.

- The timing and conclusion of the Haudagain STAG exercise and its impact on Middlefield regeneration was emphasised as crucial - City Council is therefore very keen to find out ASAP which option approach is to be preferred.
- Queries as to which of the three current options being considered provides the greatest capacity in the network - what are the key findings from the traffic modelling.
- Request as to whether any 'market' testing or feasibility has been done to assess viability of potential commercial development island - this would require to be examined in light of planning policy terms, particular if this should be retailing use.
- This was followed by queries over testing of development scenarios for differing types and scale of development, and implications for network capacity.
- Options 5 and 11 would create link road and development opportunity - with possibility of the receipts being used by City Council to fund local community and City regeneration.
- At the same time, subject to development, the creation of a link road may in fact create a physical barrier and divide to the local community.
- Issues discussed involving need for developer contributions - associated to the link road, commercial development site and opportunities for local sourced employment.
- Indicative timetable for any improvements, recognising that the scheme is still required to be approved etc.

Aberdeen and Grampian Chamber of Commerce

- Indicative timetable for any improvements, recognising that approval needed etc
- Interest expressed in what is envisaged in the provision of a package of public transport, cycling and walking improvements and interventions, and what implications this may have for operation and effectiveness of transport movements and overall network.
- Strategic options for northern side of the River Don - dualling of the Parkway. Need to consider options for movement along Mugiemooss Road towards Dyce, over the Persley Bridge and the possibility of a Third Don Crossing.
- The three options don't really address the issue of capacity to the north of Haudagain and the River Don, where the greatest pressure and constraint exists - need to be much more forward thinking, and looking to beyond the future.
- Key developments being constrained - Airport expansion; growth of Ellon; Exhibition and Conference Events; and Science Park and Energy Corridor;
- City and Shire needs the phased addressing of transport network capacity issues, starting with Haudagain, followed thereafter by the AWPR etc.
- Each option raises new issues in terms of traffic movements, and thus a balance needs to be struck involving signals, restrictions on traffic direction to ensure that any option works, and fits into existing and proposed public transport measures.
- Radical options could still be considered, via utilising two lanes at peak time on upgraded bridge over Don (replacement for Persley perhaps) and linking up with Dyce Road - all taking place to address the issue of traffic coming to/from the north.
- Very welcoming and supportive of need for improvements, to do something, and potential this may create to achieve City regeneration.
- Importance of consultation and business/community engagement.

- Chamber of Commerce is keen to see optimisation and enhancement of existing network capacity, with recognition that longer term agreement will need to be struck with transport consumer to encourage 'cultural' change away from private vehicle to alternative modes.
- What are policy, maintenance and funding implications of de-trunking of the A90 North Anderson Drive corridor, and any subsequent improvements being made?

Scottish Enterprise Grampian

- Helpful to see the broad outline of each technical option.
- Will wish to reserve any formal judgment on individual merits of each option until a later date, or until further detail is available on cost-benefits of each option and the finer details of each- noted, as the associated facilities for public transportation, pedestrians and cyclists.
- Particularly keen to emphasis the economic development and related importance and implications of operation of the Haudagain roundabout/junction, and resultant benefits to accrue from anticipated future improvements.
- The main wish is to secure maximum effectiveness and level of utilisation of existing transport network in the City; and
- Provide an indication of programme for implementation of improvements, recognising the study is yet to be concluded, considered and then funding approved.

The Institute of Directors in Scotland

- Representative of IOD Aberdeen Branch, drawing out attention to comments made in the earlier period of STAG consultation.
- Haudagain roundabout is a major issue and problem in the City and Shire - resulting in the loss of time, environmental pollution from traffic emissions, fuel consumption and productivity loss. £15m-£30m per year is lost to the economy.
- Failing to recognise importance of 'perceptions', accessibility, competitiveness in global economy - particularly large numbers of international energy companies contributing a significant percentage of the business in economy - all regularly experience traffic congestion in the City.
- Low cost option for improvements should be avoided - what about an underpass or flyover construction?
- Extra junctions and traffic signals will merely exacerbate the traffic congestion.
- Would wish to see grade separated junction with 2 uninterrupted lanes in each direction, plus any dedicated public transport lanes, running along Great Northern Road, North Anderson Drive and Auchmill Road.
- Larger roundabout would be more preferable, with a simultaneous dualling of Mugiemoos Road to the A90(N) and A90(S).
- Removal of congestion at Haudagain is essential, although it is recognised that this may well have a displacement or redistribution of traffic movement elsewhere in the City.
- Regeneration of Middlefield community or Major transportation improvements - what is to be the clear priority?
- Indicative timetable for any improvements - subject to necessary approvals etc

5 BUSINESS SURVEY

Introduction

- 5.1 This section outlines the findings of a business survey undertaken as part of the study. The purpose of the survey was to provide a profile of businesses within the catchment area and to gain an understanding of business trends and prospects, and how the transport infrastructure improvements proposed might affect these prospects and/or activities. It also sought to provide evidence and reasoned justification from analysis of the survey responses to support the individual options and improvements being considered.
- 5.2 A structured survey of approximately 250 local businesses across the Aberdeen City and Aberdeenshire area was undertaken during July and early August 2007. The survey sample included a broad representation of all businesses by industry, by size, and spatially across the study area.
- 5.3 The business survey questionnaire and letter of introduction were initially sent by post to each identified local business, this was followed up by email and telephone contact to increase participation. Spare copies and stamped address envelopes were also made available at this stage in case questionnaires had not been completed or mislaid. In this way, we have sought to achieve a higher level and quality of response whilst also providing the opportunity to comment.

Business Survey Findings

Survey Respondents

- 5.4 The survey questionnaire was sent to a cross-section of approximately 250 local businesses, 35 businesses replied. The overall response rate for the survey was 14%. The majority of respondents completed the questionnaire; eight businesses replied stating they did not want to fill in the questionnaire.
- 5.5 Analysis of the survey responses by nature of business activity shows that 74% of the respondents are actively involved in the service sector, 15% in the manufacturing and the remaining 11% involved in the oil and gas industry. This indicates that the businesses most likely to be affected by the transport improvement options are from the service sector and reflects the industrial structure of the economy.

Table 5.1: Number of respondents by industry sector

Industry Sector:	Total No.	Total %
Oil & Gas	3	11%
Manufacturing	4	15%
Service	20	74%
Total	27	100%

Employment

- 5.6 By utilising the data provided by each of the respondents on employment levels (Table 5.2) it has been possible to categorise each of the responses by size of business (i.e. small, medium and large). The survey showed that the vast majority of the respondents employ less than 10 staff representing small businesses.

Table 5.2: Total number of respondents by business size

	Small (1-49 employees)	Medium (50-249 employees)	Large (250+ employees)
Nos.	20	4	3
%	74%	15%	11%

- 5.7 Analysis by industry sector reveals that small businesses were the most represented size of business for the manufacturing sector and service sector (Table 5.3). Oil and gas sector businesses were evenly represented over the three business size classifications.

Table 5.3: Business size by industry sector

	Oil & Gas		Manufacturing		Service	
Small	1	33%	4	100%	15	75%
Medium	1	33%	0	0%	3	15%
Large	1	33%	0	0%	2	10%
Total	3	100%	4	100%	20	100%

Business Turnover

- 5.8 The survey also sought to obtain details on the approximate level of annual turnover of the firms approached. To ensure that a certain degree of confidentiality could be maintained, the respondents were asked to categorise their business in one of five broad financial bands set out in Table 5.4.
- 5.9 The survey indicates that the nearly all the businesses that responded generate on average an annual business turnover of greater than £100,000, with the majority generating over £1million. The greatest proportion of respondents reported a turnover of between £1million and £5million. A third of the businesses in the service sector and all of those involved in oil and gas stated a turnover in excess of £5 million.

Table 5.4: Level of turnover by industrial sector

	Oil & Gas		Manufacturing		Service	
<£100K	0	0%	0	0%	2	12%
£100K- £500K	0	0%	1	25%	1	6%
£500K- £1M	0	0%	1	25%	1	6%
£1m- £5M	0	0%	2	50%	7	41%
>£5M	1	100%	0	0%	5	35%
Total	1	100%	4	100%	16	100%

Business Trends and Future Prospects

Satisfaction with Trade

- 5.10 Satisfaction with the present level of business trade was considered by over three-quarters of respondents to be either very good or good. Only a small number of respondents (8%) stated trade was poor. The greatest proportion of respondents experiencing poor trading is in the manufacturing sector. In contrast, all respondents from the oil and gas industry report very good trading conditions.

Table 5.5: Level of satisfaction in business trade by industry sector

	Very Good	Good	Fair	Poor
Oil & Gas	100%	0%	0%	0%
Manufacturing	0%	33%	33%	33%
Service	21%	58%	16%	5%
Total	28%	48%	16%	8%

Pattern of Turnover

- 5.11 Over two-thirds (68%) of businesses experienced increasing turnover over the previous three years, while an equal proportion of firms reported stable and declining turnover. On examining the pattern of turnover by business size, medium sized businesses have experienced more growth in turnover followed by large then small firms.

Table 5.6: Pattern of turnover by business size

	Increase	Stable	Decline
Small	61%	17%	22%
Medium	100%	0%	0%
Large	67%	33%	0%
Total	68%	16%	16%

- 5.12 Over the previous three years turnover predominately increased in all three industry sectors, although around a fifth of respondents in the manufacturing and service sector reported a decline in turnover.

Table 5.7: Pattern of turnover by industrial sector

	Increase	Stable	Decline
Oil & Gas	100%	0%	0%
Manufacturing	75%	0%	25%
Service	61%	22%	17%
Total	68%	16%	16%

Pattern of Employment

- 5.13 All medium sized firms stated their pattern of employment had been increasing whereas all large sized firms reported their pattern of employment had been stable. Over a half (53%) of small firms reported their pattern of employment had been increasing and a small proportion (6%) stated it had been declining.

Table 5.8: Pattern of employment by business size

	Increase	Stable	Decline
Small	53%	41%	6%
Medium	100%	0%	0%
Large	0%	100%	0%
Total	54%	42%	4%

- 5.14 Analysed by industry sector two thirds of respondents from the oil and gas and manufacturing sector reported increasing patterns of employment over the previous three years. Employment patterns as reported by service sector respondents were equally split between increasing and stable.

Table 5.9: Pattern of employment by industrial sector

	Increase	Stable	Decline
Oil & Gas	67%	33%	0%
Manufacturing	67%	0%	33%
Service	50%	50%	0%
Total	54%	42%	4%

Movement of Goods and Services

- 5.15 Highlighting the importance of access and mobility the majority of respondents stated that the movement of goods was important for their business. Congestion on or around the strategic road network was considered a cause of a delay or failure in deliveries by the vast majority of businesses. Businesses that use the road network most frequently, and perhaps for shorter journeys, consider congestion to be a bigger problem.

Table 5.10: Importance of movement of goods and impact of congestion by industry sector

	Is the movement of goods important for business?		Does congestion impact on movement of goods?	
	Yes	No	Yes	No
Oil & Gas	67%	33%	50%	50%
Manufacturing	100%	0%	100%	0%
Service	75%	25%	87%	13%
Total	77%	23%	85%	15%

- 5.16 Haudagain junction improvements were perceived as very beneficial by the majority of respondents for the movement of goods. The impact on costs associated with journey time reliability, late deliveries, and the cost of outwards goods were perceived as being of most benefit. It was considered that the least beneficial impact would be on the cost associated with the movement of inward goods.

Table 5.11: Perceived impact on movement of goods

	Very Beneficial	Beneficial	Moderately Beneficial	Slightly Beneficial	Non Beneficial
Cost of inward goods	24%	6%	18%	6%	47%
Cost of outward goods	35%	12%	18%	12%	24%
Cost of delays from road congestion	52%	19%	10%	5%	14%
Cost associated with late deliveries	43%	19%	10%	0%	29%
Journey time reliability	65%	10%	10%	5%	10%

- 5.17 Each respondents from the oil and gas sector believed improvements to Haudagain junction would provide a very beneficial impact on business trips. Around three quarters (72%) and two-thirds of respondents from the service and manufacturing sectors respectively, believed improvements to Haudagain junction would provide either a very beneficial or beneficial impact on business trips.

Table 5.12: Impact on business trips by industry sector

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Oil & Gas	100%	0%	0%	0%	0%
Manufacturing	33%	33%	33%	0%	0%
Service	44%	28%	6%	11%	11%
Total	48%	26%	9%	9%	9%

Analysis of Options

Impact on Movement by Business Size and Industry Sector

Cost of bringing in supplies for processing or goods for sale

- 5.18 Respondents stated that Option 12 was the option most likely to provide a very beneficial (13%) and beneficial (17%) impact on costs for supplies for processing or goods for sale. However approximately half of all respondents believed each of the options would provide no beneficial impact on costs for supplies for processing or goods for sale.

Table 5.13: Impact on Costs for supplies for processing or goods for sales

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	4%	13%	22%	9%	52%
Option 11	4%	13%	29%	8%	46%
Option 12	13%	17%	13%	8%	50%

Costs for Moving Produced Goods

- 5.19 Around a third (32%) of respondents stated Option 11 would provide a moderately beneficial impact on the cost of moving produced goods. However Option 12 was the option most respondents believed would provide a very beneficial impact (16%) on the cost of moving produced goods.

Table 5.14: Impact on Costs for moving produced goods

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	8%	17%	8%	25%	42%
Option 11	4%	8%	32%	16%	40%
Option 12	16%	12%	8%	20%	44%

Cost of Staff Travelling to Meet Clients or Visit other Locations

- 5.20 Almost a half of all respondents (44%) believed Option 12 would present either a very beneficial or beneficial impact on the costs of staff travelling to meet clients/ visit other locations.

Table 5.15: Impact on Costs of staff travelling to meet clients/ visit other locations

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	13%	17%	21%	25%	25%
Option 11	8%	16%	44%	4%	28%
Option 12	24%	20%	8%	20%	28%

Costs for Clients or Suppliers Visiting

- 5.21 The same proportion of respondents (44%) believed Option 12 would deliver either very beneficial or beneficial impacts associated with the visiting cost for clients/ suppliers. However approximately a third of all respondents stated each option would provide no beneficial impact on the costs for clients/ suppliers.

Table 5.16: Costs for clients/ suppliers visiting

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	13%	17%	21%	17%	33%
Option 11	8%	16%	40%	0%	36%
Option 12	24%	20%	8%	16%	32%

Impact on Efficiency Gains

- 5.22 There was a mixed response to how each option would impact on efficiency gains. The majority of businesses believed each option would provide no beneficial impact on their efficiency gains. Over half of respondents did consider there to be at least some beneficial impact.

Table 5.17: Impact on efficiency gains (better organisation of production / sales)

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	13%	17%	8%	21%	42%
Option 11	8%	12%	20%	20%	40%
Option 12	16%	8%	16%	16%	44%

Impact on Recruitment and Retention of Staff

- 5.23 Over a fifth of respondents stated Option 12 would have a very beneficial impact on recruitments and staff retention. Around a third of all respondents believed each of the options would provide no beneficial impact on recruitment and staff retention. The majority response for Options 11 and 5 was that there would be a slight to moderate beneficial impact.

Table 5.18: Impact on recruitment and retention of staff

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	13%	13%	13%	30%	30%
Option 11	4%	8%	33%	21%	33%
Option 12	21%	8%	13%	21%	38%

Impact on Access to Lower cost Suppliers/ Goods

- 5.24 Around a half of all respondents stated that each of the options would provide no beneficial impact relating to access to lower cost suppliers or goods. However over a fifth (21%) of respondents believed Option 12 would provide either a very beneficial or beneficial impact on access to lower cost suppliers or goods.

Table 5.19: Impact on Access to lower Cost Suppliers/ Goods

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	4%	13%	13%	22%	48%
Option 11	0%	4%	29%	13%	54%
Option 12	8%	13%	8%	17%	54%

Impact on Access to Labour Pools not Currently Available

- 5.25 More respondents believed Option 5 and Option 12 would provide very beneficial or beneficial impacts related to accessing labour pools than for Option 11. However a larger proportion of respondents considered Option 11 to be moderately beneficial.

Table 5.20: Impact on Access to Labour Pools not currently available

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	13%	9%	17%	22%	39%
Option 11	4%	4%	33%	13%	46%
Option 12	17%	4%	17%	17%	46%

Impact on Providing Better Access for Customers

- 5.26 Half of all respondents stated Option 12 would provide either a very beneficial or beneficial impact on the provision of better access for customers, compared to around a third of respondents for Options 5 and 11.

Table 5.21: Impact on Providing Better Access for customers

	Very beneficial	Beneficial	Moderately beneficial	Slight beneficial impact	No beneficial impact
Option 5	17%	17%	17%	22%	26%
Option 11	8%	25%	33%	4%	29%
Option 12	25%	25%	13%	13%	25%

Effect of Impacts on Level of Output

- 5.27 Around a quarter of respondents believed each of the options would have a major impact on their level of output. A similar number of respondents believed that Options 11 and 12 would have a moderate impact on their level of output (21% and 22% respectively). However a sizeable proportion of respondents believed each of the option would have a moderate impact on their level of output.

Table 5.22: Impact on Level of Output

	Major	Moderate	Minor
Option 5	26%	9%	65%
Option 11	25%	21%	54%
Option 12	26%	22%	52%

Effect of Impacts on Sales

- 5.28 The majority of respondents stated each of the three options would have a minor impact on their sales. Option 5 appears to be slightly favoured by respondents in terms of providing a major (14%) or moderate (24%) impact on sales.

Table 5.23: Impact on Sales

	Major	Moderate	Minor
Option 5	14%	24%	62%
Option 11	14%	18%	68%
Option 12	10%	19%	71%

Effect of Impacts on Margins

- 5.29 Respondents believed none of the three options would provide a major influence on their margins. However Option 12 is slightly favoured in providing either a major or moderate impact.

Table 5.24: Impact on Margins

	Major	Moderate	Minor
Option 5	9%	23%	68%
Option 11	5%	32%	64%
Option 12	9%	32%	59%

Effects of Impacts on Employees

- 5.30 Option 12 is believed by over a third of all respondents to be the option most likely to provide a major or moderate impact on employees. However the majority of respondents believed each option would provide only a minor positive impact on their employees.

Table 5.25: Impact on Employees

	Major	Moderate	Minor
Option 5	20%	10%	70%
Option 11	14%	14%	72%
Option 12	15%	20%	65%

Summary of Impact on Future Business Prospects

Baseline Situation

- 5.31 The business community is currently experiencing an upturn in business performance with the majority of the businesses reporting a stable or rising turnover. The few businesses that reported declining turnover are small businesses employing less than ten employees and tend to be in the manufacturing sector.
- 5.32 There is a similar position with the majority of businesses in terms of employment; generally employment has been increasing. Medium sized firms appear to be doing particularly well with all medium sized firms increasing their workforce over the previous three years.

Access and Mobility

- 5.33 Congestion on or around the strategic road network was considered a cause of a delay or failure in deliveries by the vast majority of businesses. Interestingly, all manufacturing firm responded by saying that congestion impacted on the movement of goods, whereas for the oil and gas sector the movement of staff and clients was considered more important. Businesses that use the road network most frequently, and perhaps for shorter journeys, consider congestion to be a bigger problem.

- 5.34 Haudagain junction improvements were perceived as very beneficial by the majority of respondents for the movement of goods and in reducing the cost of business trips. Businesses expected the positive impact on costs associated with journey time reliability to be more beneficial than the impact on the cost of moving goods or services.

Analysis of Options

- 5.35 Analysis of the survey in terms of the three options reveals an interesting pattern. The pattern of responses for the following areas was similar for the three options:
- Impact on suppliers and the movement of goods and services, and access to lower cost inputs to production;
 - Travel cost of staff, staff recruitment, retention and access to labour pools;
 - Access to customers; and
 - Efficiency gains

- 5.36 The response for each option in relation to the above factors is summarised below:

- 'Option 5' - The expected impact was more evenly spread across the range from 'no beneficial impact' to 'very beneficial impact' than the other two options.¹³
- 'Option 11' - Excluding respondents that expect no beneficial impact, the general pattern was that the highest proportion of respondents expected this option to have a moderate impact.
- 'Option 12' - The expected impact for this option was much more divided than for the other two options. Businesses were much more polarised in their expectations, they either expected no beneficial impact or for the junction improvements to be highly beneficial.

Impact on Output and Employment

- 5.37 Overall, the majority of businesses agreed with the junction improvements being proposed for Haudagain. There was no option where the majority of businesses were not in favour of implementation. The key points extracted were the extent to which they thought the options would have a major or moderate positive impact on output and margins, and to a lesser extent on employment. It can therefore be seen that most businesses predict a positive outlook for business prospects under all three options.
- 5.38 The expected impact on output and employment for each of the options is set out below:

Output

- 'Option 5' - The majority of businesses (65%) expect a minor positive impact on output. A relatively high proportion of businesses (26%) expect a major positive impact, and relatively few (9%) expect a moderate impact.
- 'Option 11' - Expected impact of Option 11 on output is more evenly spread. A quarter of businesses predict a major positive impact; 21% of businesses predict a moderate impact; and 54% of businesses predict a minor positive impact.
- 'Option 12' - Expected impact of Option 12 on output is similar to Option 11. 26% of businesses predict a major positive impact; 22%

¹³ Across the range of 5 entries from 'no beneficial' impact to 'very beneficial' impact.

of businesses predict a moderate impact; and 52% of businesses predict a minor positive.

Employment

- 'Option 5' - The majority of businesses (70%) expect a minor positive impact on employment. A relatively high proportion of businesses (20%) expect a major positive impact, and relatively few (10%) expect a moderate impact.
- 'Option 11' - 14% of businesses predict a major positive impact on employment; 14% of businesses predict a moderate impact; and 73% of businesses predict a minor positive impact.
- 'Option 12' - Expected impact of Option 12 on employment is similar to Option 11, however the proportion of businesses predicting a moderate or major positive impact is higher. 15% of businesses predict a major positive impact; 20% of businesses predict a moderate impact; and 65% of businesses predict a minor positive impact.

6 CONCLUSION

- 6.1 In drawing together the conclusions of this Economic Development Report, we seek to provide a context for and an appraisal of economic activity and locational impacts (EALI) of the proposed transport network improvement options for Haudagain Junction, Aberdeen. This report also provides an initial basis for the completion of the requisite STAG AST 2 tables as per STAG Guidance.
- 6.2 Haudagain junction plays an important and strategic role in the functioning of the Aberdeen City and Aberdeenshire economies. The importance of the junction for airport related traffic, and the dynamics of the economy mean that traffic flows will continue to increase along the A90 and A96, and future economic performance of the local and wider area will potentially be impacted by the quality of transport infrastructure.
- 6.3 Set in the context of an expanding economy, transport infrastructure in the area is currently a constraint on economic growth. The Institute of Directors in Scotland consider Haudagain roundabout as a major issue and problem in the City and Shire - resulting in the loss of time, environmental pollution from traffic emissions, fuel consumption and productivity loss. Their view is that £15m-£30m per year is lost to the economy.
- 6.4 The Aberdeen and Grampian Chamber of Commerce considered key developments in the city are currently being constrained - Airport expansion; growth of Ellon; Exhibition and Conference Events; and Science Park and Energy Corridor.
- 6.5 Aberdeen City Council is of the view that significant development constraints exist in northern parts of the City including the Bridge of Don, Dyce and the Airport. These would be alleviated via individual and collective proposed transport and accessibility improvements. This would comprise at first Haudagain, followed by a Third Don Crossing, the Aberdeen Western Peripheral Route etc. These major improvements would assist in the full realisation of the City's development potential, with the prospect of economic growth and opportunities as a direct result.
- 6.6 It is concluded from consultations, the survey findings and analysis that there is a general level of favour and agreement amongst stakeholders and the business community for the individual transportation network improvement options outlined in this report. Consultees were generally welcoming and supportive of the need for improvements and potential this may create to achieve City regeneration.
- 6.7 The majority of businesses responding to the survey agreed with the transportation network improvement options being proposed. There was no single option where the majority of businesses were not in favour of implementation.
- 6.8 It was generally considered that upgrading of Haudagain junction would help sustain business performance, reduce costs, improve margins and increase output. The impact on costs associated with journey time reliability, late deliveries, and the cost of outwards goods were perceived as being of high benefit. Labour market impacts and the reduction in journey times for staff travelling to and from work were considered to be the areas to receive the greatest benefit.
- 6.9 Key points to note are the extent to which the local businesses thought that the individual options would have a positive impact on turnover, output and overall levels of employment.
- 6.10 In respect to output:
 - 35% of businesses surveyed expected **Option 5** to have a major or moderate impact;
 - 46% of businesses expected **Option 11** to have a major or moderate impact; and

- 48% of businesses expected **Option 12** to have a major or moderate impact.
- 6.11 In respect to employment:
- 30% of businesses expected **Option 5** to have a major or moderate impact
 - 28% of businesses expected **Option 11** to have a major or moderate impact; and
 - 30% of businesses expected **Option 12** to have a major or moderate impact.
- 6.12 Middlefield and Logie, immediately adjacent to and surrounding Haudagain junction, is designated a regeneration area. The area is generally run down and has suffered from a bad reputation which has acted to deter businesses from setting up in the locality. Currently there are derelict shops in the centre and a lack of good quality local shops and commercial facilities.
- 6.13 Household income in Middlefield is amongst the lowest in the region. 78% of households have an income of less than £25,000 compared to an Aberdeen average of 56%; and only 2% of households have an income of above £55,000 compared to the Aberdeen average of 12%. Unemployment is high at around 5% (Aberdeen average is 2%) and the percentage of economically active people is a particularly low 57%¹⁴.
- 6.14 Although there is currently a draft Middlefield Regeneration Masterplan, little has been done in terms of 'market' testing or feasibility to assess the viability of potential commercial development and how the junction improvements link to development opportunities. Transport infrastructure improvements have the potential to create new and improved facilities (and possibly new employment) in the Middlefield area, as well as acting as a pull factor for the generation of capital investment.
- 6.15 Middlefield and Logie are amongst the most deprived areas in Scotland and although the improvements to junction will potentially positively impact the economies of Aberdeen City and Aberdeenshire without an integrated regeneration framework there is no guarantee that the proposals will directly benefit these neighbourhoods. To maximise benefits to the local area, and therefore to the wider economy, an integrated economic development framework is needed. This should integrate proposals for Haudagain junction into a wider regeneration framework.

¹⁴ Aberdeen Neighbourhood Reports

APPENDIX ONE

STAKEHOLDER CONSULTATION

APPENDIX 2: KEY STAKEHOLDER CONSULTATION

The following consultations were carried out in July 2007 to determine the current views and perceptions of the consultees' of the proposed improvements to the Haudagain roundabout and junction, in terms of economic development and planning issues.

Mr Geoff Runcie, Chief Executive
Aberdeen and Grampian Chamber of Commerce
Greenhole Place
Bridge of Don
Aberdeen
AB23 8EU

Mr Malcolm Campbell, Planning and Infrastructure
Mr Sandy Beattie, Planning and Infrastructure
Mr Andrew Browning, Planning and Infrastructure
Aberdeen City Council
St Nicholas House
Aberdeen
AB10 1BW

Mr David Kilgour, Strategist (City), Community Planning and Regeneration
Ms Maria Theise
Mr Andrew Stephen, Senior Business Development Executive
Aberdeen City Council
St Nicholas House
Aberdeen
AB10 1GZ

Mr Ken McEwan
Institute of Directors in Scotland - Aberdeen Branch
C/o The PR Partnership (Scotland) Ltd
Bon Accord House
Riverside Drive
Aberdeen
AB11 7SL

Mr Piers Blaxter, Structure Plan Leader and Aberdeenshire Council
Aberdeenshire Council
Woodhill House
Westburn Road
Aberdeen
AB16 5GB

Mr Colin Mitchell, City Region Team
Scottish Enterprise Grampian
27 Albyn Place
Aberdeen
AB10 1DB

