

**I APPENDIX I**

**I.1 AST Tables**





## Part 2 Appraisal Summary Table

Proposal Details	
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)	Transport Scotland, Nestrans, Aberdeen City Council
Proposal Name:	SIAS Ltd
Proposal Description:	Capital costs/grant (undiscounted)
	Annual revenue support
	Present Value of Cost to Govt
Funding Sought From: (if applicable)	£0
Background Information	
Geographic Context:	Haudagain Roundabout is at the junction of a number of major roads in Aberdeen to the north-west of the city. The A96(T) Auchmill Road, A90(T) North Anderson Drive, A90(T) Mugiemoss Road and the A96 Great Northern Road all require access through the junction, with the A96(T) and A90(T) Trunk Roads serving as the main access into and around Aberdeen from the north and north-west. Persley Bridge on the northern approach to Haudagain roundabout is one of only three public road crossings of the River Don in Aberdeen, two of which are in Aberdeen with a further crossing on the Aberdeen City/Aberdeenshire boundary on the A947 at parkhill. There is a rail line to the north of the roundabout with commercial and residential built environment on all sides.
Social Context:	Aberdeen is perceived to be an affluent city with low unemployment (<2%) and relatively high wages but there are pockets of deprivation across the city where incomes are well below the Aberdeen and Scottish averages. Within Middlefield and the residential area of Logie, to the southwest of Haudagain Roundabout, there is the most deprived area in Aberdeen which is ranked among the 3% most multiply deprived areas of Scotland. It is a priority partnership area for the Aberdeen City Alliance Community Planning Partnership and is eligible for European Social Fund (objective 3) funding. Middlefield is one of Aberdeen's 'Social Inclusion Partnership' (SIP) areas.
Economic Context:	Aberdeen is the 'Oil Capital of Europe' and has become a centre of excellence in various elements of oil and gas exploration and production. Improved transport links to and from Aberdeen Airport would enhance the ability of these (and other) companies to exploit overseas opportunities. Dyce employs some 26,000 yet very few of these people live and work in Dyce, the majority commute. Some 29.8 million tonnes of goods (excl oil & gas) are moved to/from within Grampian each year. Of this 80% is moved by road (much of it internal to region). Haudagain is the key junction on the link to the Airport, Dyce Industrial area, the Parkway, Aberdeenshire Fishing towns and other Aberdeenshire Towns.

Planning Objectives	
Objective:	Performance against planning objective:
<p>To reduce congestion and unreliability by improving and sustaining base year 2004 journey times for commercial and public transport traffic until 2027.</p> <p>Measures must minimise the risk of transport related accidents especially for vulnerable users in the vicinity of the junction to improve on 2001-2004 casualty levels.</p> <p>To make socially-inclusive and healthy transport modes more attractive to use, including cycling, walking and public transport measures to be promoted in all measures.</p> <p>To minimise traffic induced severance on communities by ensuring measures do not have a significant detrimental impact on 2004 walk time accessibility.</p> <p>To contribute to the City Council's regeneration aims by complementing the development of the Logie/Manor area of Middlefield.</p>	<p>Relative to the 2004 Base the effect of the proposal on commercial traffic and public transport congestion would be:</p> <ul style="list-style-type: none"> <li>2027 significant increased delay in AM peak and PM Peak (AWPR &amp; TDC assumed as a reference case)</li> </ul> <p>Possible increase in pedestrian and vehicle accidents. No Traffic signal operation. Traffic signals are safer for cyclists.</p> <p>Increased traffic at junction may make the route less attractive for public transport users because of increased delay. Roundabouts are unattractive to pedestrians and cyclists. Existing pedestrian crossing maintained. The option will not reduce rat running in the Middlefield area.</p> <p>No impact on walk times across junction. The option may will reduce rat running in the Middlefield area.</p> <p>This option would do little to enhance the successful development of Middlefield. Commercial development would be constrained to access difficulties.</p>
<b>Rationale for Selection or Rejection of Proposal:</b>	This proposal is rejected but is used in the STAG process as a means of comparison.

Implementability Appraisal	
Technical:	From a technical standpoint, this is straightforward.
Operational:	There are no factors which might adversely affect the ability to operate the proposals.
Financial:	No capital costs other than maintenance costs to be funded.
Public:	During two public consultations (July/August 2006 and May 2008) the public and Stakeholders did not support a Do-minimum scenario.

Environment			
Mitigation Options Included: (Costs & Benefits)			
Sub-criterion	Qualitative Information	Quantitative Information	Significance of Impact
Noise and Vibration	The majority of road sections would not experience any significant positive or negative impacts in comparison to base year for the do minimum scenarios (2012 and 2027).	Only small changes anticipated by the worst case year do min compared with base within a bracket of -3.5% to +2.3%	Mainly neutral with some minor positive effects
Global Air Quality – CO <sub>2</sub>	Assessment of Global Impacts scoped out		PV1 (not calculated)
Local Air Quality – PM <sub>10</sub> and NO <sub>2</sub>	Do minimum scenario is predicted to lead to an overall improvement in air quality and reduction in public exposure in comparison with the existing base year scenario.	No properties with increase in PM <sub>10</sub> compared to Base Year 1408 properties with decrease in PM <sub>10</sub> compared to Base Year No properties with increase in NO <sub>2</sub> compared to Base Year 1408 properties with decrease in NO <sub>2</sub> compared to Base Year	Moderate positive
Water Quality, Drainage and Flood Defence	No significant residual effects are predicted on water quality, drainage and flood defence.	The water quality of the River Don is classified as A2 (Good). It is designated as a WFD 1a water body, a Salmonid water and a Sensitive Area (Eutrophic). The water quality of Bucks Burn is classified as B and Scatter Burn as C.	None
Geology	No designated Geological sites or commercially viable mineral reserves have been identified. No valuable agricultural soil reserves have been identified in the area	No designated Geological sites or commercially viable mineral reserves have been identified. No valuable agricultural soil reserves have been identified in the area	None
Biodiversity	No statutory designated sites will be directly affected. Changes in land	No designated sites will be directly	None

	use surrounding the roundabout may affect protect species indirectly or may have positive affects through planting and habitat enhancements.	affected.	
Visual Amenities	There would be no impact on the existing views and visual amenity if no proposals were undertaken.	There would be no impact on the existing views and visual amenity if no proposals were undertaken	None
Agriculture and Soils	See Geology.		
Cultural Heritage	A general growth in traffic volume has the potential to impact negatively on the known Listed Buildings as well as the general character of the area. There is unlikely to be any impact upon buried archaeological remains assuming that no significant maintenance occurs.	Screening may be effectively used to prevent excessive escalation of traffic impact on the setting of Listed Buildings and extant sensitive cultural heritage assets.	None
Landscape	There would be no impact on the existing site and surrounding landscape character and quality if no proposals were undertaken	There would be no impact on the existing site and surrounding landscape character and quality if no proposals were undertaken	None
<b>Monetised summary</b>	= PV1 not calculated		
<b>Monetary Impact Ratio</b>	= PV1/(PVC x -1) = not calculated		
<b>Safety</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>

Accidents	Change in Annual Personal Injury Accidents	Fixed trip matrix	Not calculated
	Change in Balance of Severity	No change.	Not calculated
	Total Discounted Savings	Not Calculated	PV2 (Not calculated)
Security		No change.	No change.
<b>Monetised summary</b>		= PV2(Not calculated)	
<b>Monetary Impact Ratio</b>		= PV2/(PVC x -1) (Not calculated)	

Economy (Transport Economic Efficiency)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
User Benefits	Travel Time	Longer travel times in 2027	PV3 (Not calculated)
	User Charges	-	PV4 (Not calculated)
	Vehicle Operating Costs	-	PV5 (Not calculated)
	Quality / Reliability Benefits	Less reliable journey times	
	Investment Costs	-	PV6 (Not calculated)
Private Sector Operator Impacts	Operating & Maintenance Costs	-	PV7 (Not calculated)
	Revenues	-	PV8 (Not calculated)
	Grant/Subsidy payments	-	PV9 (Not calculated)
<b>Monetised summary</b>		$PV10 = PV3 + PV4 + PV5 + PV6 + PV7 + PV8 + PV9$ (Not calculated)	
<b>Monetary Impact Ratio</b>		$= PV10 / (PVC \times -1)$ (Not calculated)	

Economy (Wider Economic Benefits)			
Sub-criterion	Item	Qualitative information	Quantitative information
Wider Economic Benefits	Agglomeration economies (WB1)	Not Applicable	PV11 (Not calculated)
	Increased output in perfectly competitive markets (WB3)	Not Applicable	PV12 (Not calculated)
	Wider benefits arising from improved labour supply (WB4)	Not Applicable	PV13 (Not calculated)
<b>Monetised summary</b>		$PV14 = PV11 + PV12 + PV13$ (Not calculated)	
<b>Monetary Impact Ratio</b>		$= (PV10 + PV14) / (PVC \times -1)$ (Not calculated)	

Economy (Economic Activity and Location Impacts)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
Economic Activity and Location Impacts	Local Economic Impacts	At the national level, it is estimated that there will be very limited positive or negative employment impacts experienced elsewhere within Scotland, i.e. outside Aberdeen and immediate adjoining parts of Aberdeenshire. This will reflect the localised nature of the proposed junction improvement, and the overall likelihood and effects of displacement, etc.	There will be limited, if any, employment change and GVA impact at the national level, reflecting the localised nature of this project. Estimation of the level of change at a national economic level has not been practical to be derived, due to the insufficient level of quantitative data provided in the business survey. (No impact)
	National Economic Impacts	Do-Min: By not improving traffic flow and reducing congestion the junction improvements would lead to some minor negative economic impacts in the wider study area. Decreased accessibility would not ease travel in and out of the City from the surrounding environs therefore adversely impacting accessibility and size of the potential labour pool. Additionally the do-minimum scenario would result in a relative increase in costs compared to an improved junction layout. This would lead to some adverse, though slight, impact on the rate of GVA growth over the medium term. The <del>most significant near-term impacts would occur</del> from the increase in costs associated with poorer journey times and reliability. There are likely to be no benefits gained in the local regeneration area situated adjacent to the proposed transport infrastructure improvements. Middlefield in particular suffers	Small scale relative employment disbenefits for locals, particularly in services. Potential job prospects reduced for much of the local population if the junction improvement is viewed in conjunction with wider regeneration efforts.  Estimation of the extent of distributional impact could not be derived, due primarily to insufficient scope of the business survey and study in general.  (Minor Negative Impact at local level)

	<p>Distributional Impacts</p>	<p>employment.</p> <p>Do-Min: By not improving traffic flow and reducing congestion the junction improvements would lead to some minor negative economic impacts in the wider study area. Decreased accessibility would not ease travel in and out of the City from the surrounding environs therefore adversely impacting accessibility and size of the potential labour pool. Additionally the do-minimum scenario would result in a relative increase in costs compared to an improved junction layout. This would lead to some adverse, though slight, impact on the rate of GVA growth over the medium term. The most significant near term impacts would occur from the increase in costs associated with poorer journey times and reliability.</p> <p>There are likely to be no benefits gained in the local regeneration area situated adjacent to the proposed transport infrastructure improvements. Middlefield in particular suffers from varying aspects of social exclusion and relative deprivation. Not improving the junction would limit future development opportunities and therefore the prospect of job creation.</p> <p>In employment terms, any potential growth in the services sector could be limited and therefore not provide opportunities for higher employment.</p>	<p>Small scale relative employment disbenefits for locals, particularly in services. Potential job prospects reduced for much of the local population if the junction improvement is viewed in conjunction with wider regeneration efforts.</p> <p>Estimation of the extent of distributional impact could not be derived, due primarily to insufficient scope of the business survey and study in general.</p> <p>(Minor Negative Impact at local level)</p>
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<b>Integration</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Transport Interchanges	Services & Ticketing	Minor Negative effect	Over 130 buses in peak periods
	Infrastructure & Information	No effect	
Land-use Transport Integration		Negative effect on National and Local Planning Policies to support SIP areas	SPP17 Planning for Transport – Social Inclusion Aims. Regeneration programme for the Middlefield and the other areas across Aberdeen City is a supported by Aberdeen City Council aim.
Policy Integration		No effect	Disability Discrimination Act 1995 People and Place: Regeneration Policy Statement, Scottish Executive, June 2006.
<b>Accessibility &amp; Social Inclusion</b>			

<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Community Accessibility	Public Transport Network Coverage	No effect	No effect
	Access to Other Local Services	No effect	No effect
Comparative Accessibility	Distribution/Spatial Impacts by Social Group	No effect	No effect.
	Distribution/Spatial Impacts by Area	No change to an urban area	No effect
<b>Strategic Environmental Assessment (SEA)</b>			
Summary of SEA outcome where appropriate	Not Appropriate		
<b>Cost to Public Sector</b>			
<b>Item</b>	<b>Qualitative information</b>	<b>Quantitative information</b>	

Public Sector Investment Costs	Not Applicable	PV15(Not calculated)
Public Sector Operating & Maintenance Costs	Not Applicable	PV16 (Not calculated)
Grant/Subsidy Payments	Not Applicable	PV17 (Not calculated) (NB PV17 should equal PV9 x -1)
Revenues	Not Applicable	PV 18 (Not calculated)
Taxation impacts	Not Applicable	PV19 (Not calculated)

Monetised Summary	
Present Value of Transport Benefits	Total PVB = PV1 + PV2 + PV10 (Not calculated)
Present Value of Cost to Government	Total PVC = PV15 + PV16 + PV17 + PV18 + PV19
Net Present Value	Total NPV = PVB + PVC (Not calculated)
Benefit-Cost to Government Ratio	Ratio = PVB/(PVC x-1) (Not calculated)
Benefit-Cost to Government Ratio (including WEBs)	Ratio = (PVB + PV14)/(PVC x -1) (Not calculated)
Benefit-Cost to Funding Agency Ratio	Ratio = (NPV + PVC – PV19)/[(PVC-PV19) x -1] (Not calculated)



## Part 2 Appraisal Summary Table

Proposal Details	
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)	Transport Scotland, Nestrans, Aberdeen City Council
Proposal Name:	Option 5 Dual Link Road (0.5km long) from A96(T) to A90(T) plus walking, cycling and public transport measures.
Proposal Description:	Transport Scotland
Funding Sought From: (if applicable)	Transport Scotland
<b>Background Information</b>	
Geographic Context:	Haudagain Roundabout is at the junction of a number of major roads in Aberdeen to the north-west of the city. The A96(T) Auchmill Road, A90(T) North Anderson Drive, A90(T) Muglemoss Road and the A96 Great Northern Road all require access through the junction, with the A96(T) and A90(T) Trunk Roads serving as the main access into and around Aberdeen from the north and north-west. Persley Bridge on the northern approach to Haudagain roundabout is one of only three public road crossings of the River Don in Aberdeen, two of which are in Aberdeen with a further crossing on the Aberdeen City/Aberdeenshire boundary on the A947 at parkhill. There is a rail line to the north of the roundabout with commercial and residential built environment on all sides.
Social Context:	Aberdeen is perceived to be an affluent city with low unemployment (<2%) and relatively high wages but there are pockets of deprivation across the city where incomes are well below the Aberdeen and Scottish averages. Within Middlefield and the residential area of Logie, to the southwest of Haudagain Roundabout, there is the most deprived area in Aberdeen which is ranked among the 3% most multiply deprived areas of Scotland. It is a priority partnership area for the Aberdeen City Alliance Community Planning Partnership and is eligible for European Social Fund (objective 3) funding. Middlefield is one of Aberdeen's 'Social Inclusion Partnership' (SIP) areas.
Economic Context:	Aberdeen is the 'Oil Capital of Europe' and has become a centre of excellence in various elements of oil and gas exploration and production. Improved transport links to and from Aberdeen Airport would enhance the ability of these (and other) companies to exploit overseas opportunities. Dyce employs some 26,000 yet very few of these people live and work in Dyce, the majority commute. Some 29.8 million tonnes of goods (excl oil & gas) are moved to/from within Grampian each year. Of this 80% is moved by road (much of it internal to region). Haudagain is the key junction on the link to the Airport, Dyce Industrial area, the Parkway, Aberdeenshire Fishing towns and other Aberdeenshire Towns.
Name of Planner:	SIAS Ltd
Total Public Sector Funding Requirement:	Capital costs/grant (May 2007) £14.52 Annual revenue support £00.00 Present Value of Cost to Govt £16.39
Amount of Application:	£14.5M (May 2007)

Planning Objectives	
Objective:	Performance against planning objective:
<p>To reduce congestion and unreliability by improving and sustaining base year 2004 journey times for commercial and public transport traffic until 2027.</p> <p>Measures must minimise the risk of transport related accidents especially for vulnerable users in the vicinity of the junction to improve on 2001-2004 casualty levels.</p> <p>To make socially-inclusive and healthy transport modes more attractive to use, including cycling, walking and public transport measures to be promoted in all measures.</p> <p>To minimise traffic induced severance on communities by ensuring measures do not have a significant detrimental impact on 2004 walk time accessibility.</p> <p>To contribute to the City Council's regeneration aims by complementing the development of the Logie/Manor area of Middlefield.</p>	<p>Relative to the 2004 Base the effect of the proposal on commercial traffic and public transport congestion would be:</p> <ul style="list-style-type: none"> <li>Improved overall journey times in 2027 AM peak and PM Peak (AWPR &amp; TDC assumed). Muglemoss Road may see minimal benefit in the long term AM peak.</li> </ul> <p>Possible decrease in pedestrian and vehicle accidents.</p> <p>Reduced traffic at existing Haudagain junction may make the route more attractive for public transport users because of reduced delay. The option may reduce rat running in the Middlefield area.</p> <p>Slight severance to Middlefield &amp; Hutcheon Low access across the study area, minimised by at-grade crossing points and land-use allocation via regeneration masterplan.</p> <p>This option may have the potential to enhance the successful redevelopment of Middlefield. Commercial development would have access opportunities.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This proposal is accepted and selected as meeting planning objectives.</p>

<b>Implementability Appraisal</b>	
<b>Technical:</b>	From a technical standpoint Option 5 is reasonably straightforward, it utilises existing junctions and mainly offline from the Trunk Road.
<b>Operational:</b>	There are no factors which might adversely affect the ability to operate the proposals.
<b>Financial:</b>	Capital costs are being sought from Transport Scotland.
<b>Public:</b>	During the first public consultations (July/August 2006) the public showed some support for Option 5. In the second consultation (May 2008) the public have shown that there is a more support for the Option 5 proposal than would be against it.

<b>Environment</b>			
Mitigation Options Included: (Costs & Benefits)			
<b>Sub-criterion</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>	<b>Significance of Impact</b>
Noise and Vibration	Option 5 shows minor to moderate benefits for notional receptors on Auchmill Road and North Anderson Drive in both the year of opening and worst case years.	Auchmill Road and North Anderson Drive show the greatest changes in % people annoyed by the worst case year: between -12.5% and -6.1%. Mugiemoss Road and Great Northern Road show far less change: between -0.5% and +3.2%	Minor to moderate positive effects on Auchmill Road and North Anderson Drive; neutral to minor negative effects on Mugiemoss Road and Great Northern Road
Global Air Quality – CO <sub>2</sub>	Assessment of Global Impacts scoped out of assessment	-	-
Local Air Quality – PM <sub>10</sub> and NO <sub>2</sub>	Option 5 is likely to lead to an overall increase in public exposure to PM <sub>10</sub> & NO <sub>2</sub> when compared to the Do-Minimum scenario. This is due to the introduction of a new road link through a residential area, the relative increase in pollution along this new link road outweighs the smaller localised improvements experienced along the arms of the roundabout.	408 properties with increase in PM <sub>10</sub> 1408 properties with decrease in PM <sub>10</sub> 408 properties with increase in NO <sub>2</sub> 1408 properties with decrease in NO <sub>2</sub>	Minor negative
Water Quality, Drainage and Flood Defence	No significant residual effects are predicted on water quality, drainage and flood defence.	The water quality of the River Don is classified as A2 (Good). It is designated as a WFD 1a water body, a Salmonid water and a Sensitive Area (Eutrophic). The water quality of Bucks Burn is classified as B and Scatter Burn as C.	None
Geology	Package 5 is not anticipated to have any residual effects on geology, agriculture and soils.	No designated Geological sites or commercially viable mineral reserves have been identified.	None
Biodiversity	No statutory designated sites will be directly affected. The Aberdeen, Inverness and Kittybrewster Railway	No designated sites will be directly affected. The Aberdeen, Inverness and Kittybrewster Railway Line DWS	Minor negative

	<p>Line DWS may be indirectly affected by the option. Protected species may be affected.</p>	<p>may be indirectly affected by the option. Species such as badger and otter may be affected</p>	
<p>Visual Amenity</p>	<p>This option has the potential to enhance local views through creation of a new road link and enhanced streetscape, but there are many potentially sensitive receptors that would be affected, including those who houses will be demolished. Views are likely to be particularly affected during the construction phase, when they may be replaced with unattractive views of hoardings and construction plant in the short term. Views generally localised (up to 0.5km)</p>	<p>Potentially sensitive receptors that might be affected include the following:</p> <ul style="list-style-type: none"> <li>Static viewers/ views from adjacent residential housing and highways, particularly along North Anderson Drive, Auchmill Road, Great Northern Road, Hutcheon Low Drive, Logie Avenue, Logie Place, Manor Avenue, Manor Drive, Manor Park and Clifton Road (B986);</li> </ul> <p>Viewers from adjacent footpaths</p>	<p>Magnitude: Negative minor to moderate Significance: Minor to moderate negative</p>
<p>Agriculture and Soils</p>	<p>See Geology.</p>		
<p>Cultural Heritage</p>	<p>Potential impact to sites dated to the Post-Medieval period or later (an appreciable number relate to Modern developments). Most numerous are the series of boundary stones noted in Middlefield and Upper Middlefield. The only recorded buried evidence in the zone of disturbance is a bronze spearhead. There is a possibility, therefore, of loss of buried archaeological remains of unknown character. Potential to relieve the visual impact of heavy traffic on Listed Buildings around the Haudagain roundabout, though this volume of traffic would be transferred to the southwest and may impact upon extant cultural heritage features in this area</p>	<p>Mitigation strategy allows for either preservation by record or in situ as appropriate. Screening may be effectively used to prevent excessive escalation of traffic impact on the setting of Listed Buildings and extant sensitive cultural heritage assets.</p>	<p>Minor negative</p>
<p>Landscape</p>	<p>This option retains the existing urban fringe characteristic and does not encroach on the farmland or river corridor adjacent although the scale of</p>	<p>Character areas and designated sites potentially sensitive to change in terms of Landscape character and quality:</p> <ul style="list-style-type: none"> <li>Existing vegetation adjacent to the</li> </ul>	<p>Minor to moderate negative</p>

	<p>the proposed road would be potentially slightly larger than those in the immediate surroundings</p> <p>Details of the option are not yet determined, so the quality of the new construction and reinstatement works is not known. However, the option has the potential to slightly enhance the existing landscape character by creating new tree lined avenues along the dual carriageway and creating a new feature within the roundabout.</p> <p>Some existing buildings would be lost along with associated access roads but could be replaced with well designed road edges and street trees, contributing to initial regeneration of the area.</p> <p>Short term negative effects are likely, particularly during the construction period, but in the longer term potential enhancement of local landscape character is possible through new planting and street design.</p>	<p>existing and realigned route (currently minimal)</p> <ul style="list-style-type: none"> <li>Existing public footpaths</li> <li>Adjacent highways (which may see a reduction in congestion or alteration to accommodate the new road alignment)</li> </ul> <p>Residential properties, particularly those along North Anderson Drive, Auchmill Road, Great Northern Road, Logie Avenue, Logie Place, Manor Avenue, Manor Drive, Manor Park and Clifton Road (B986).</p>	
<p><b>Monetised summary</b></p>	<p>= PV1 not calculated</p>		
<p><b>Monetary Impact Ratio</b></p>	<p>= PV1/(PVC x -1) = not calculated</p>		

<b>Safety</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Accidents	Change in Annual Personal Injury Accidents	Fixed trip matrix(Default Rate comparison over 15 years)	£0.04M
	Change in Balance of Severity	Change in balance of severity mostly at junctions (Default Rate comparison over 15 years)	Links: Fatal No change Serious No change Slight 2 less Junctions: : Fatal No change Serious 2 less Slight 16 less
	Total Discounted Savings	Accident Savings (Default Rate comparison over 15 years)	£0.64M
Security		No change.	No change.
<b>Monetised summary</b>		£0.64M	
<b>Monetary Impact Ratio</b>		0.04	

Economy (Transport Economic Efficiency)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
User Benefits	Travel Time	Travel time savings to 2027.	£226.91M
	User Charges	No tolls or charges	£0
	Vehicle Operating Costs	Consumer and business minus delay during construction	£10.04M
	Quality / Reliability Benefits	Reduced overall journey times	In 2027 PM peak period: Total Vehicle Travel Time - Base (3914hrs) & Option 5 (1454hrs)
Private Sector Operator Impacts	Investment Costs	No costs	£0
	Operating & Maintenance Costs	More efficient bus operation	£2.19M
	Revenues	No revenues	£0
	Grant/Subsidy payments	Not Applicable	£0
	<b>Monetised summary</b>		£239.14M
<b>Monetary Impact Ratio</b>		14.59	

<b>Economy (Wider Economic Benefits)</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative information</b>	<b>Quantitative information</b>
Wider Economic Benefits	Agglomeration economies (WB1)	Not Applicable	PV11 (Not calculated)
	Increased output in perfectly competitive markets (WB3)	Not Applicable	PV12 (Not calculated)
	Wider benefits arising from improved labour supply (WB4)	Not Applicable	PV13 (Not calculated)
<b>Monetised summary</b>		$PV14 = PV11 + PV12 + PV13$ (Not calculated)	
<b>Monetary Impact Ratio</b>		$= (PV10 + PV14) / (PVC \times -1)$ (Not calculated)	

Economy (Economic Activity and Location Impacts)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
Economic Activity and Location Impacts	Local Economic Impacts	<p>One of the greatest effects will be experienced in respect of output with positive impacts to result across the City with the manufacturing sector being the greatest beneficiary. Manufacturing firms suffer the most in terms of costs associated with congestion. Around a third of local businesses believed the junction improvements would have a major or moderate impact on sales and employment, and around half envisage there would be a major or moderate impact on output.</p> <p>In relation to employment and industry sectors, the greatest anticipated employment change will typically occur amongst the services sectors, such as in retailing, food and drink and other local services. This would provide opportunities for local employment in providing support services and for higher skilled occupations in the City area.</p> <p>An estimation of the exact level of local change has not been possible to be derived, due to the insufficient level of quantitative data provided in response to the business survey. It would not be statistically reliable to extrapolate from the limited sample size. However, it can be concluded that local businesses generally believe the junction improvements will positively impact business prospects and by extension employment and GVA in the Aberdeen and Aberdeenshire areas.</p>	<p>It is estimated that some but a relatively small growth in economic performance and employment would occur across the TTWA in the medium to long term. The majority of economic benefits would be derived from releasing the constraint on economic growth. Unexamined but likely positive impacts would flow from accommodating increased traffic resulting from forecast growth in airport passengers.</p> <p>(Minor to Moderate Positive Benefit)</p>

	<p>National Economic Impacts</p>	<p>At the national level, it is estimated that there will be very limited positive or negative employment impacts experienced elsewhere within Scotland, i.e. outside Aberdeen and immediate adjoining parts of Aberdeenshire. This will reflect the localised nature of the proposed junction improvement, and the overall likelihood and effects of displacement, etc.</p> <p>Analysis of the notional employment by industry type show that minimal positive impacts will take place across the service sectors and in the oil &amp; gas sector and related industries, with similar minimal changes in value added/ business performance.</p> <p>Estimation of the level of change at a national economic level has not been practical to be derived, due to the insufficient level of quantitative data provided in the business survey.</p>	<p>There will be limited, if any, employment change and GVA growth at the national economy, reflecting the localised nature of this project.</p> <p>(Minor but statistically insignificant Positive Benefit)</p>
<p>Distributional Impacts</p>	<p>By improving traffic flow and reducing congestion the junction improvements would lead to some positive economic benefits in the wider study area. Increased accessibility would ease travel in and out of the City from the surrounding environs therefore increasing accessibility and size of the potential labour pool. Additionally the reduction of costs would lead to some though slight increases in GVA over the medium term. However as it is an improvement to an already existing junction these effects would be limited in their scope and magnitude. The most significant near term impacts would occur from the reduction of costs associated with improved journey times and increased reliability.</p> <p>There are most likely to be benefits gained in the most local regeneration area situated adjacent to the proposed transport infrastructure improvements. Middlefield in</p>	<p>Small scale employment benefits for locals, particularly in services. Potential job prospects for much of the local population if the junction improvement is viewed in conjunction with wider regeneration efforts.</p> <p>(Minor Positive Benefit at local level)</p>	

particular suffers from varying aspects of social exclusion and relative deprivation. The junction improvement alone is unlikely to have few positive medium-to-long term impacts unless the new road layout provides the opportunity to improve links to services and in tandem with any regeneration initiatives and wider transport infrastructure plans creates commercial opportunities in the area.

In employment terms, any potential growth in the services sector could provide opportunities for higher employment. In tandem with regeneration efforts, wider society changes will provide positive impacts and other opportunities across the social spectrum.

Estimation of the extent of distributional impact could not be derived, due primarily to insufficient scope of the business survey and study in general.

Integration			
Sub-criterion	Item	Qualitative Information	Quantitative Information
Transport Interchanges	Services & Ticketing	Minor Positive effect	Over 130 buses in peak periods
	Infrastructure & Information	No effect	
Land-use Transport Integration		Moderate Positive effect on National and Local Planning Policies to support SIP areas	SPP17 Planning for Transport – Social Inclusion Aims. Regeneration programme for the Middlefield and the other areas across Aberdeen City is a supported by Aberdeen City Council aim.
Policy Integration		Minor Positive effect	Disability Discrimination Act 1995 People and Place: Regeneration Policy Statement, Scottish Executive, June 2006.

<b>Accessibility &amp; Social Inclusion</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Community Accessibility	Public Transport Network Coverage	No effect	No effect
	Access to Other Local Services	Slight Severance to existing walk distances but potential to bring new jobs or services within the walking catchment of the greater part of Middlefield.	Population estimate of 2097 people living in Middlefield (based on 2005 figures)
Comparative Accessibility	Distribution/Spatial Impacts by Social Group	As this was a local appraisal a distributional assessment for key population groups was mainly scoped out. Benefit to public transport used by non-car owning households was reviewed.	Both car and non-car owning households using Haudagain will comparatively each see benefits in journey times relative to the 2004 Base in 2027.
	Distribution/Spatial Impacts by Area	Potential to complement local urban Middlefield Regeneration & wider impacts in North of Aberdeen	Large impact on SIP area and lesser impact on wider area.
<b>Strategic Environmental Assessment (SEA)</b>			
Summary of SEA outcome where appropriate	Not undertaken.		

<b>Cost to Public Sector</b>		
<b>Item</b>	<b>Qualitative information</b>	<b>Quantitative information</b>
Public Sector Investment Costs	Cost at 2002 prices quoted	£10.76M
Public Sector Operating & Maintenance Costs	Not Calculated	£0
Grant/Subsidy Payments	Not Identified	£0
Revenues	No tolls or parking charges, or other relevant revenue streams	£0
Taxation impacts	Identify any changes in tax revenues attributable to the proposal, e.g. loss of fuel duty due to modal shift.	£5.63M

<b>Monetised Summary</b>	
Present Value of Transport Benefits	Total PVB = £239.78M
Present Value of Cost to Government	Total PVC = £16.39M
Net Present Value	Total NPV = £223.39M
Benefit-Cost to Government Ratio	BCR <sub>govt.</sub> Ratio = 14.63
Benefit-Cost to Government Ratio (including WEBS)	Not Calculated
Benefit-Cost to Funding Agency Ratio	BCR <sub>FA</sub> Ratio = 21.76



## Part 2 Appraisal Summary Table

Proposal Details	
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)	Transport Scotland, Nestrans, Aberdeen City Council
Proposal Name:	Name of Planner: SIAS Ltd
Proposal Description:	Option 11
	Dual Link Road (0.5km long) A96(T) to A90(T), replace roundabout with signals, dual to Persley Bridge, plus walking, cycling and public transport measures.
	Transport Scotland
Funding Sought From: (if applicable)	Amount of Application: £28.10M (May 2007)
Background Information	
Geographic Context:	Haudagain Roundabout is at the junction of a number of major roads in Aberdeen to the north-west of the city. The A96(T) Auchmill Road, A90(T) North Anderson Drive, A90(T) Mugiemoss Road and the A96 Great Northern Road all require access through the junction, with the A96(T) and A90(T) Trunk Roads serving as the main access into and around Aberdeen from the north and north-west. Persley Bridge on the northern approach to Haudagain roundabout is one of only three public road crossings of the River Don in Aberdeen, two of which are in Aberdeen with a further crossing on the Aberdeen City/Aberdeenshire boundary on the A947 at Parkhill. There is a rail line to the north of the roundabout with commercial and residential built environment on all sides.
Social Context:	Aberdeen is perceived to be an affluent city with low unemployment (<2%) and relatively high wages but there are pockets of deprivation across the city where incomes are well below the Aberdeen and Scottish averages. Within Middlefield and the residential area of Logie, to the southwest of Haudagain Roundabout, there is the most deprived area in Aberdeen which is ranked among the 3% most multiply deprived areas of Scotland. It is a priority partnership area for the Aberdeen City Alliance Community Planning Partnership and is eligible for European Social Fund (objective 3) funding. Middlefield is one of Aberdeen's 'Social Inclusion Partnership' (SIP) areas.
Economic Context:	Aberdeen is the 'Oil Capital of Europe' and has become a centre of excellence in various elements of oil and gas exploration and production. Improved transport links to and from Aberdeen Airport would enhance the ability of these (and other) companies to exploit overseas opportunities. Dyce employs some 26,000 yet very few of these people live and work in Dyce, the majority commute. Some 29.8 million tonnes of goods (excl oil & gas) are moved to/from within Grampian each year. Of this 80% is moved by road (much of it internal to region). Haudagain is the key junction on the link to the Airport, Dyce Industrial area, the Parkway, Aberdeenshire Fishing towns and other Aberdeenshire Towns.
	Capital costs/grant (May 2007) £28.10 Annual revenue support £00.00 Present Value of Cost to Govt £25.41

<b>Planning Objectives</b>	
Objective:	Performance against planning objective:
<p>To reduce congestion and unreliability by improving and sustaining base year 2004 journey times for commercial and public transport traffic until 2027.</p> <p>Measures must minimise the risk of transport related accidents especially for vulnerable users in the vicinity of the junction to improve on 2001-2004 casualty levels.</p> <p>To make socially-inclusive and healthy transport modes more attractive to use, including cycling, walking and public transport measures to be promoted in all measures.</p> <p>To minimise traffic induced severance on communities by ensuring measures do not have a significant detrimental impact on 2004 walk time accessibility.</p> <p>To contribute to the City Council's regeneration aims by complementing the development of the Logie/Manor area of Middlefield.</p>	<p>Relative to the 2004 Base the effect of the proposal on commercial traffic and public transport congestion would be:</p> <ul style="list-style-type: none"> <li>Improved overall journey times in 2027 AM peak and PM Peak (AWPR &amp; TDC assumed)</li> </ul> <p>Possible decrease in pedestrian and vehicle accidents.</p> <p>Reduced traffic at existing Haudagain junction may make the route more attractive for public transport users because of reduced delay. The option may reduce rat running in the Middlefield area.</p> <p>Slight benefit to Hutcheon Low &amp; Clifton Road areas due to new crossing points to access across the study area. Other routes with slight severance minimised by at-grade crossing points and land-use allocation via regeneration masterplan.</p> <p>This option may have the potential to enhance the successful redevelopment of Middlefield. Commercial development would have access opportunities.</p>
<b>Rationale for Selection or Rejection of Proposal:</b>	This proposal is accepted and selected as meeting planning objectives.

<b>Implementability Appraisal</b>	
<b>Technical:</b>	From a technical standpoint, Option 11 is reasonably straightforward. There may be some phasing issues with construction of the dual section on Muglemoss Road A9(T).
<b>Operational:</b>	There are no factors which might adversely affect the ability to operate the proposals.
<b>Financial:</b>	Capital costs are being sought from Transport Scotland.
<b>Public:</b>	During two public consultations (July/August 2006 and May 2008) the public have consistently expressed that there is a more people that would support the Option 11 proposal than would be against it.

Environment			
Mitigation Options Included: (Costs & Benefits)			
Sub-criterion	Qualitative Information	Quantitative Information	Significance of Impact
Noise and Vibration	Option 11 shows minor to major benefits for notional receptors on Auchmill Road and North Anderson Drive in both the year of opening and worst case years.	Auchmill Road and North Anderson Drive show the greatest changes in % people annoyed by the worst case year: between -5.8% and -13.0%. Mugiemoss Road and Great Northern Road show less change and more disbenefits: between -1.4% and +7.6%	Minor to major positive effects on Auchmill Road and North Anderson Drive; minor negative effects to minor positive effects on Mugiemoss Road and Great Northern Road
Global Air Quality – CO <sub>2</sub>	Assessment of Global Impacts scoped out of assessment	-	-
Local Air Quality – PM <sub>10</sub> and NO <sub>2</sub>	Option 11 is likely to lead to an overall increase in public exposure to PM <sub>10</sub> & NO <sub>2</sub> concentrations when compared to the future Do-Minimum. This is due to the introduction of a new road link through a residential area, the relative increase in pollution along this new link road outweighs the smaller localised improvements experienced along Mugiemoss Road, Great Northern Road and North Anderson Drive.	638 properties with increase in PM <sub>10</sub> 1186 properties with decrease in PM <sub>10</sub> 638 properties with increase in NO <sub>2</sub> 1186 properties with decrease in NO <sub>2</sub>	• <b>Minor negative</b>
Water Quality, Drainage and Flood Defence	No significant residual effects are predicted on water quality, drainage and flood defence.	The water quality of the River Don is classified as A2 (Good). It is designated as a WFD 1a water body, a Salmonid water and a Sensitive Area (Eutrophic). The water quality of Bucks Burn is classified as B and Scatter Burn as C.	None
Geology	Package 11 is not anticipated to have any residual effects on geology.	No designated Geological sites or commercially viable mineral reserves	None

	<p>agriculture and soils.</p> <p>There will be a direct impact on the Aberdeen, Inverness and Kittybrewster Railway Line DWS and Woodside DWS. There may be an indirect impact on the River Don Valley DWS from lighting and noise. There may be an impact on the function of the railway line as a wildlife corridor. Protected species may be affected. Woodland may be affected.</p>	<p>There will be a direct impact on the Aberdeen, Inverness and Kittybrewster Railway Line DWS and Woodside DWS. There may be an indirect impact on the River Don Valley. This option may affect protected species including bats, badger and otter.</p>	<p>Minor negative</p>
<p>Biodiversity</p>	<p>Views are likely to be particularly affected during the construction phase, when they may be replaced with unattractive views of hoardings and construction plant in the short term.</p> <p>Existing longer distance views may be partially interrupted particularly due to the construction of the new road bridge (depending on height and design details).</p> <p>Existing vegetation likely to be lost, including the mature tree vegetation on the existing road embankment with potential loss of existing open space to the north of the River Don. This could be replaced by views of traffic, buses, and lorries.</p> <p>Views both localised and longer distance (up to 1km or more, depending on height and design details).</p> <p>Enhanced road links and streetscapes,</p>	<p>Potentially sensitive receptors that might be affected include the following:</p> <ul style="list-style-type: none"> <li>• Static viewers/ views from adjacent residential housing particularly along North Anderson Drive, Auchmill Road, Great Northern Road, Hutcheon Low Drive, Logie Avenue, Logie Place, Manor Avenue, Manor Drive, Manor Park and Clifton Road (B986);</li> <li>• Static viewers/ views from adjacent offices, retail, and commercial units adjacent to the A90 and A96;</li> <li>• Static viewers/ views from adjacent public footpaths and Highways</li> <li>• Viewers from residential properties on the edges of the proposed option area such as Woodside, Daneston and Persley;</li> <li>• Potentially visitors to the nearby Cemetery;</li> <li>• viewers from nearby listed</li> </ul>	<p>Magnitude: Negative moderate to major Significance: Moderate negative</p>
<p>Visual Amenity</p>			

	as well as potential new facilities for pedestrians and cyclists.	<ul style="list-style-type: none"> <li>Viewers from nearby open space such as the golf course and sports fields.</li> </ul>	
Agriculture and Soils	See Geology		None
Cultural Heritage	Potential impact to setting of the extant structures, as well as the loss of as yet uncharacterised buried archaeological deposits.	Mitigation strategy allows for either preservation by record or in situ as appropriate. Screening may be effectively used to prevent excessive escalation of traffic impact on the setting of Listed Buildings and extant sensitive cultural heritage assets.	Minor negative
Landscape	<p>This option has the potential to retain an urban fringe characteristic but with the result of the urban environment potentially encroaching on the farmland and River Don valley character areas adjacent.</p> <p>Details of the option are not yet determined, so the quality of the new construction and reinstatement works is not known. However, the option has the potential to enhance the existing landscape character by creating new tree lined avenues along the dual and replacing trees lost. Some existing buildings would be lost along with associated access roads, as well as creation of a new railway bridge and embankment. Well designed road edges and street trees, bridge construction and replacement of trees lost could contribute to the character of</p>	<p>Character areas and designated sites potentially sensitive to change in terms of Landscape character and quality:</p> <ul style="list-style-type: none"> <li>The River Don valley;</li> <li>Existing vegetation adjacent to the proposed works, including the thick woodland;</li> <li>Nearby Listed Buildings;</li> <li>Public footpaths;</li> <li>Residential and commercial units adjacent to or along the line of the existing and proposed highways;</li> <li>Existing suburban/ urban fringe residential areas such as Daneston and Persley;</li> <li>Existing offices, commercial, industrial units and residential areas along the line of the</li> </ul>	Moderate negative

	<p>existing and widened highways particularly along, particularly along North Anderson Drive, Auchmill Road, Great Northern Road, Hutcheon Low Drive, Logie Avenue, Logie Place, Manor Avenue, Manor Drive, Manor Park and Clifton Road (B986); and</p> <ul style="list-style-type: none"> <li>Existing Railway Bridge and embankment.</li> </ul>	<p>the area.</p> <p>Short term negative effects are likely, particularly during the construction period, but in the longer term potential enhancement of local landscape character is possible through planting and new bridge construction over the existing railway, but as a consequence extending the built environment into existing green space.</p>	
<p><b>Monetised summary</b></p>	<p>Not Calculated</p>		
<p><b>Monetary Impact Ratio</b></p>	<p>= <math>PV1 / (PVC \times -1)</math> = not calculated</p>		

<b>Safety</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Accidents	Change in Annual Personal Injury Accidents	Fixed trip matrix (Default Rate comparison over 15 years)	£0.06M annual saving
	Change in Balance of Severity	Change in balance of severity mostly at junctions (Default Rate comparison over 15 years)	Links: Fatal - No change Serious - No change Slight - 2 less Junctions: : Fatal - No change Serious – No change Slight - 30 less
	Total Discounted Savings	Accident Savings (Default Rate comparison over 15 years)	£1.01M
Security		No change.	No change.
<b>Monetised summary</b>			£1.01M
<b>Monetary Impact Ratio</b>			0.04

Economy (Transport Economic Efficiency)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
User Benefits	Travel Time	Travel time savings to 2027.	£207.66M
	User Charges	No tolls or charges	£0
	Vehicle Operating Costs	Consumer and business operating cost reduction minus delay during construction	£6.77M
	Quality / Reliability Benefits	Reduced overall journey times	In 2027 PM peak period: Total Vehicle Travel Time - Base (3914hrs) & Option 5 (1749hrs)
Private Sector Operator Impacts	Investment Costs	No costs	£0
	Operating & Maintenance Costs	More efficient bus operation	£1.80M
	Revenues	No revenues	£0
	Grant/Subsidy payments	Not Applicable	£0
	<b>Monetised summary</b>		£216.23M
<b>Monetary Impact Ratio</b>		8.5	
<b>Economy (Wider Economic Benefits)</b>			

Sub-criterion	Item	Qualitative information	Quantitative information
Wider Economic Benefits	Agglomeration economies (WB1)	Not Applicable	PV11 (Not calculated)
	Increased output in perfectly competitive markets (WB3)	Not Applicable	PV12 (Not calculated)
	Wider benefits arising from improved labour supply (WB4)	Not Applicable	PV13 (Not calculated)
<b>Monetised summary</b>		$PV14 = PV11 + PV12 + PV13$ (Not calculated)	
<b>Monetary Impact Ratio</b>			$= (PV10 + PV14) / (PVC \times -1)$ (Not calculated)

Economy (Economic Activity and Location Impacts)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
Economic Activity and Location Impacts	Local Economic Impacts	<p>One of the greatest effects will be experienced in respect of output with positive impacts to result across the City with the manufacturing sector being the greatest beneficiary. Manufacturing firms suffer the most in terms of costs associated with congestion. Around a third of local businesses believed the junction improvements would have a major or moderate impact on sales and employment, and around half envisage there would be a major or moderate impact on output.</p> <p>In relation to employment and industry sectors, the greatest anticipated employment change will typically occur amongst the services sectors, such as in retailing, food and drink and other local services. This would provide opportunities for local employment in providing support services and for higher skilled occupations in the City area.</p> <p>An estimation of the exact level of local change has not been possible to be derived, due to the insufficient level of quantitative data provided in response to the business survey. It would not be statistically reliable to extrapolate from the limited sample size. However, it can be concluded that local businesses generally believe the junction improvements will positively impact business prospects and by extension employment and GVA in the Aberdeen and Aberdeenshire areas.</p>	<p>It is estimated that some but a relatively small growth in economic performance and employment would occur across the TTWA in the medium to long term. The majority of economic benefits would be derived from releasing the constraint on economic growth. Unexamined but likely positive impacts would flow from accommodating increased traffic resulting from forecast growth in airport passengers.</p> <p>(Minor to Moderate Positive Benefit)</p>

<p>National Economic Impacts</p>	<p>At the national level, it is estimated that there will be very limited positive or negative employment impacts experienced elsewhere within Scotland, i.e. outside Aberdeen and immediate adjoining parts of Aberdeenshire. This will reflect the localised nature of the proposed junction improvement, and the overall likelihood and effects of displacement, etc.</p> <p>Analysis of the notional employment by industry type show that minimal positive impacts will take place across the service sectors and in the oil &amp; gas sector and related industries, with similar minimal changes in value added/ business performance.</p> <p>Estimation of the level of change at a national economic level has not been practical to be derived, due to the insufficient level of quantitative data provided in the business survey.</p>	<p>There will be limited, if any, employment change and GVA growth at the national economy, reflecting the localised nature of this project.</p> <p>(Minor but statistically insignificant Positive Benefit)</p>
<p>Distributional Impacts</p>	<p>By improving traffic flow and reducing congestion the junction improvements would lead to some positive economic benefits in the wider study area. Increased accessibility would ease travel in and out of the City from the surrounding environs therefore increasing accessibility and size of the potential labour pool. Additionally the reduction of costs would lead to some though slight increases in GVA over the medium term. However as it is an improvement to an already existing junction these effects would be limited in their scope and magnitude. The most significant near term impacts would occur from the reduction of costs associated with improved journey times and increased reliability.</p> <p>There are most likely to be benefits gained in the most local regeneration area situated adjacent to the proposed transport infrastructure improvements. Middlefield in</p>	<p>Small scale employment benefits for locals, particularly in services. Potential job prospects for much of the local population if the junction improvement is viewed in conjunction with wider regeneration efforts.</p> <p>(Minor Positive Benefit at local level)</p>

particular suffers from varying aspects of social exclusion and relative deprivation. The junction improvement alone is unlikely to have few positive medium-to-long term impacts unless the new road layout provides the opportunity to improve links to services and in tandem with any regeneration initiatives and wider transport infrastructure plans creates commercial opportunities in the area.

In employment terms, any potential growth in the services sector could provide opportunities for higher employment. In tandem with regeneration efforts, wider society changes will provide positive impacts and other opportunities across the social spectrum.

Estimation of the extent of distributional impact could not be derived, due primarily to insufficient scope of the business survey and study in general.

<b>Integration</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Transport Interchanges	Services & Ticketing	Minor Positive effect	Over 130 buses in peak periods
	Infrastructure & Information	No effect	
Land-use Transport Integration		Moderate Positive effect on National and Local Planning Policies to support SIP areas	SPP17 Planning for Transport – Social Inclusion Aims. Regeneration programme for the Middlefield and the other areas across Aberdeen City is supported by Aberdeen City Council aim.
Policy Integration		Minor Positive effect	Disability Discrimination Act 1995 People and Place: Regeneration Policy Statement, Scottish Executive, June 2006.

<b>Accessibility &amp; Social Inclusion</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Community Accessibility	Public Transport Network Coverage	No effect	No effect
	Access to Other Local Services	Slight Severance to existing walk distances but potential to bring new jobs or services within the walking catchment of the greater part of Middlefield.	Population estimate of 2097 people living in Middlefield (based on 2005 figures)
Comparative Accessibility	Distribution/Spatial Impacts by Social Group	As this was a local appraisal a distributional assessment for key population groups was mainly scoped out. Benefit to public transport used by non-car owning households was reviewed.	Both car and non-car owning households using Haudagain will comparatively each see benefits in journey times relative to the 2004 Base in 2027.
	Distribution/Spatial Impacts by Area	Potential to complement local urban Middlefield Regeneration & wider impacts in North of Aberdeen	Large impact on SIP area and lesser impact on wider area.
<b>Strategic Environmental Assessment (SEA)</b>			
Summary of SEA outcome where appropriate	Not undertaken.		

<b>Cost to Public Sector</b>		
<b>Item</b>	<b>Qualitative information</b>	<b>Quantitative information</b>
Public Sector Investment Costs	Cost at 2002 prices quoted	£20.83M
Public Sector Operating & Maintenance Costs	Not Calculated	£0
Grant/Subsidy Payments	Not Identified	£0
Revenues	No tolls or parking charges, or other relevant revenue streams	£0
Taxation impacts	Identify any changes in tax revenues attributable to the proposal, e.g. loss of fuel duty due to modal shift.	£4.58M

<b>Monetised Summary</b>	
Present Value of Transport Benefits	Total PVB = £217.24M
Present Value of Cost to Government	Total PVC = £25.41M
Net Present Value	Total NPV = £191.83M
Benefit-Cost to Government Ratio	BCR <sub>govt.</sub> Ratio = 8.55
Benefit-Cost to Government Ratio (including WEBS)	Not Calculated
Benefit-Cost to Funding Agency Ratio	BCR <sub>FA</sub> Ratio = 10.21



## Part 2 Appraisal Summary Table

Proposal Details	
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)	Transport Scotland, Nestrans, Aberdeen City Council
Proposal Name:	Option 12 A larger roundabout at Haudagain A96(T)/A90(T) with dual to Persley Bridge, plus walking, cycling and public transport measures.
Proposal Description:	Transport Scotland
Funding Sought From: (if applicable)	£24.00M (May 2007)
Background Information	
Geographic Context:	Haudagain Roundabout is at the junction of a number of major roads in Aberdeen to the north-west of the city. The A96(T) Auchmill Road, A90(T) North Anderson Drive, A90(T) Mugiemoss Road and the A96 Great Northern Road all require access through the junction, with the A96(T) and A90(T) Trunk Roads serving as the main access into and around Aberdeen from the north and north-west. Persley Bridge on the northern approach to Haudagain roundabout is one of only three public road crossings of the River Don in Aberdeen, two of which are in Aberdeen with a further crossing on the Aberdeen City/Aberdeenshire boundary on the A947 at Parkhill. There is a rail line to the north of the roundabout with commercial and residential built environment on all sides.
Social Context:	Aberdeen is perceived to be an affluent city with low unemployment (<2%) and relatively high wages but there are pockets of deprivation across the city where incomes are well below the Aberdeen and Scottish averages. Within Middlefield and the residential area of Logie, to the southwest of Haudagain Roundabout, there is the most deprived area in Aberdeen which is ranked among the 3% most multiply deprived areas of Scotland. It is a priority partnership area for the Aberdeen City Alliance Community Planning Partnership and is eligible for European Social Fund (objective 3) funding. Middlefield is one of Aberdeen's 'Social Inclusion Partnership' (SIP) areas.
Economic Context:	Aberdeen is the 'Oil Capital of Europe' and has become a centre of excellence in various elements of oil and gas exploration and production. Improved transport links to and from Aberdeen Airport would enhance the ability of these (and other) companies to exploit overseas opportunities. Dyce employs some 26,000 yet very few of these people live and work in Dyce, the majority commute. Some 29.8 million tonnes of goods (excl oil & gas) are moved to/from within Grampian each year. Of this 80% is moved by road (much of it internal to region). Haudagain is the key junction on the link to the Airport, Dyce Industrial area, the Parkway, Aberdeenshire Fishing towns and other Aberdeenshire Towns.
Name of Planner:	SIAS Ltd
Total Public Sector Funding Requirement:	Capital costs/grant (May 2007) £24.00 Annual revenue support £00.00 Present Value of Cost to Govt £24.99
Amount of Application:	£24.00M (May 2007)

<b>Planning Objectives 89I.</b>	
<b>Objective:</b>	Performance against planning objective:
<p>To reduce congestion and unreliability by improving and sustaining base year 2004 journey times for commercial and public transport traffic until 2027.</p> <p>Measures must minimise the risk of transport related accidents especially for vulnerable users in the vicinity of the junction to improve on 2001-2004 casualty levels.</p> <p>To make socially-inclusive and healthy transport modes more attractive to use, including cycling, walking and public transport measures to be promoted in all measures.</p> <p>To minimise traffic induced severance on communities by ensuring measures do not have a significant detrimental impact on 2004 walk time accessibility.</p> <p>To contribute to the City Council's regeneration aims by complementing the development of the Logie/Manor area of Middlefield.</p>	<p>Relative to the 2004 Base the effect of the proposal on commercial traffic and public transport congestion would be:</p> <ul style="list-style-type: none"> <li>Improved overall journey times in 2027 AM peak and PM Peak (AWPR &amp; TDC assumed). Auchmill Road may see minimal benefit in the long term.</li> </ul> <p>Possible decrease in pedestrian and vehicle accidents.</p> <p>Reduced journey times may make the route more attractive for public transport users because of reduced delay. The option may reduce rat running in the Middlefield area.</p> <p>Slight benefit to Hutcheon Low, Clifton Road and Manor Avenue areas due to new crossing points to access across the study area. Some routes with slight severance minimised by at-grade crossing points.</p> <p>This option has limited potential to enhance the successful redevelopment of Middlefield.</p>
<b>Rationale for Selection or Rejection of Proposal:</b>	This proposal is accepted and selected as meeting planning objectives.

<b>Implementability Appraisal</b>	
<b>Technical:</b>	From a technical standpoint, Option 12 is reasonably straightforward. There may be some phasing issues with construction of the dual section on Mugjemooss Road A9(T) and the construction larger roundabout would be disruptive.
<b>Operational:</b>	There are no factors which might adversely affect the ability to operate the proposals.
<b>Financial:</b>	Capital costs are being sought from Transport Scotland.
<b>Public:</b>	During the public consultations (May 2008) the public have expressed some support for Option 12 but more were against it than showed support for it.

<b>Environment</b>			
Mitigation Options Included: (Costs & Benefits)			
<b>Sub-criterion</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>	<b>Significance of Impact</b>
Noise and Vibration	Predictions for Option 12 show similar effects on all roads for both the year of opening and the worst case year.	All four roads show small changes in % people bothered by the worst case year with Auchmill Road, Mugiemoss Road and North Anderson Drive all showing small benefits of between -0.3% to -5.9%. Great Northern Road shows slight disbenefits of between +1.7% to +3.7% more people bothered.	Neutral to minor positive effects on Auchmill Road and North Anderson Drive; neutral to minor negative positive effects on Mugiemoss Road and Great Northern Road
Global Air Quality – CO <sub>2</sub>	Assessment of Global Impacts scoped out of assessment	-	-
Local Air Quality – PM <sub>10</sub> and NO <sub>2</sub>	Option 12 is likely to lead to an overall reduction in public exposure to PM <sub>10</sub> & NO <sub>2</sub> concentrations when compared to the future Do-Minimum scenario. Localised increases in PM <sub>10</sub> concentrations are however likely along Auchmill Road.	395 properties with increase in PM <sub>10</sub> 1015 properties with decrease in PM <sub>10</sub> 655 properties with increase in NO <sub>2</sub> 755 properties with decrease in NO <sub>2</sub>	Minor positive
Water Quality, Drainage and Flood Defence	No significant residual effects are predicted on water quality, drainage and flood defence.	The water quality of the River Don is classified as A2 (Good). It is designated as a WFD 1a water body, a Salmonid water and a Sensitive Area (Eutrophic). The water quality of Bucks Burn is classified as B and Scatter Burn as C.	None
Geology	Package 12 is not anticipated to have any residual effects on geology, agriculture and soils.	No designated Geological sites or commercially viable mineral reserves have been identified.	None
Biodiversity	There will be a direct impact on the Aberdeen, Inverness and Kittybrewster Railway Line DWS and Woodside DWS.	There will be a direct impact on the Aberdeen, Inverness and Kittybrewster Railway Line DWS and Woodside DWS.	Minor negative

	<p>There may be an indirect impact on the River Don Valley DWS from lighting and noise. There may be an impact on the function of the railway line as a wildlife corridor. Protected species may be affected. Woodland may be affected.</p> <p>Views are likely to be particularly affected during the construction phase, when they may be replaced with unattractive views of hoardings and construction plant in the short term.</p> <p>Existing longer distance views may be partially interrupted particularly due to the construction of the new road bridge (depending on height and design details).</p> <p>Existing vegetation likely to be lost, including the mature tree vegetation on the existing road embankment with potential loss of existing open space to the north of the River Don. This could be replaced by views of traffic, buses, and lorries.</p> <p>Views both localised and longer distance (up to 1km or more, depending on height and design details).</p> <p>Enhanced road links and streetscapes, as well as potential new facilities for pedestrians and cyclists.</p> <p>See Geology</p>	<p>There may be an indirect impact on the River Don Valley. This option may affect protected species including bats, badger and otter.</p>	
<p>Visual Amenity</p>		<p>Potentially sensitive receptors that might be affected include the following:</p> <ul style="list-style-type: none"> <li>• Static viewers/ views from adjacent residential housing, particularly along North Anderson Drive, Auchmill Road, Great Northern Road, and Hutcheon Low Drive;</li> <li>• Static viewers/ views from adjacent offices, retail, and commercial units adjacent to the A90 and A96;</li> <li>• Static viewers/ views from adjacent public footpaths and Highways</li> <li>• Viewers from residential properties on the edges of the proposed option area such as Daneston and Persley as well as areas of Woodside;</li> <li>• Potentially visitors to the nearby Cemetery;</li> <li>• viewers from nearby listed buildings; and</li> <li>• Viewers from nearby open space such as the golf course and sports fields.</li> </ul>	<p>Magnitude: Negative moderate to major Significance: Moderate negative</p>
<p>Agriculture and Soils</p>			
<p>Cultural Heritage</p>	<p>Potential to impact upon as yet uncharacterised buried archaeological deposits. Several Post Medieval marker stones are known in the area .The</p>	<p>Mitigation strategy allows for either preservation by record or in situ as appropriate. Screening may be effectively used to prevent excessive escalation of traffic</p>	<p>Minor Negative</p>

	<p>alterations associated with Option 12 would not result in direct changes to Persley Bridge (a category B Listed Building) but may impact upon its setting dependant on the exposure of the structure to the additional traffic.</p>	<p>Impact on the setting of Listed Buildings and extant sensitive cultural heritage assets.</p>	
<p>Landscape</p>	<p>This option has the potential to retain an urban fringe characteristic but with the result of the urban environment potentially encroaching on the farmland and River Don valley character areas adjacent.</p> <p>Details of the option are not yet determined, so the quality of the new construction and reinstatement works is not known. However, the option has the potential to enhance the existing landscape character by creating new tree lined avenues along the dual carriageway and creating a new feature within the roundabout. Some existing buildings would be lost along with associated access roads, as well as creation of a new railway bridge and embankment. Well designed road edges and street trees, bridge construction and replacement of trees lost could contribute to the character of the are.</p> <p>Short term negative effects are likely, particularly during the construction period, but in the longer term potential enhancement of local landscape</p>	<p>Character areas and designated sites potentially sensitive to change in terms of Landscape character and quality:</p> <ul style="list-style-type: none"> <li>• The River Don valley;</li> <li>• Existing vegetation adjacent to the proposed works, including the thick woodland belt between Muggiemoss Road and Hutcheon Low Drive);</li> <li>• Nearby Listed Buildings;</li> <li>• Public footpaths;</li> <li>• Residential and commercial units adjacent to or along the line of the existing and widened highways;</li> <li>• Existing suburban/ urban fringe residential areas such as Daneston and Persley;</li> </ul> <p>Adjacent offices, commercial, industrial units and residential areas along the line of the existing and widened highways particularly along North Anderson Drive, Auchmill Road, Great Northern Road and Hutcheon Low Drive; and</p>	<p>Moderate negative</p>

	<p>2 Existing railway bridge and embankment.</p>	<p>character is possible through planting and new bridge construction over the existing railway, but as a consequence extending the built environment into existing green space.</p>	
<p><b>Monetised summary</b></p>	<p>Not Calculated</p>		
<p><b>Monetary Impact Ratio</b></p>	<p>= <math>PV1/(PVC \times -1)</math> = not calculated</p>		

<b>Safety</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Accidents	Change in Annual Personal Injury Accidents	Fixed trip matrix (Default Rate comparison over 15 years)	£0.15M annual saving
	Change in Balance of Severity	Change in balance of severity mostly at junctions (Default Rate comparison over 15 years)	Links: Fatal - No change Serious - No change Slight - 2 less Junctions: Fatal - No change Serious - 3 less Slight - 67 less
	Total Discounted Savings	Accident Savings (Default Rate comparison over 15 years)	£2.57M
Security		No change.	No change.
<b>Monetised summary</b>			£2.57M
<b>Monetary Impact Ratio</b>			0.10

Economy (Transport Economic Efficiency)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
User Benefits	Travel Time	Travel time savings to 2027.	£226.31M
	User Charges	No tolls or charges	£0
	Vehicle Operating Costs	Consumer and business operating cost reduction minus delay during construction	£10.04M
	Quality / Reliability Benefits	Reduced overall journey times	In 2027 PM peak period: Total Vehicle Travel Time - Base (3914hrs) & Option 5 (1456hrs)
Private Sector Operator Impacts	Investment Costs	No costs	£0
	Operating & Maintenance Costs	More efficient bus operation	£2.45M
	Revenues	No revenues	£0
	Grant/Subsidy payments	Not Applicable	£0
	<b>Monetised summary</b>		£238.80M
<b>Monetary Impact Ratio</b>		9.6	

Economy (Wider Economic Benefits)			
Sub-criterion	Item	Qualitative information	Quantitative information
Wider Economic Benefits	Agglomeration economies (WB1)	Not applicable	PV11 (Not calculated)
	Increased output in perfectly competitive markets (WB3)	Not applicable	PV12 (Not calculated)
	Wider benefits arising from improved labour supply (WB4)	Not applicable	PV13 (Not calculated)
<b>Monetised summary</b>		$PV14 = PV11 + PV12 + PV13$ (Not calculated)	
<b>Monetary Impact Ratio</b>		$= (PV10 + PV14) / (PVC \times -1)$ (Not calculated)	

Economy (Economic Activity and Location Impacts)			
Sub-criterion	Item	Qualitative Information	Quantitative Information
Economic Activity and Location Impacts	Local Economic Impacts	<p>One of the greatest effects will be experienced in respect of output with positive impacts to result across the City with the manufacturing sector being the greatest beneficiary. Manufacturing firms suffer the most in terms of costs associated with congestion. Around a third of local businesses believed the junction improvements would have a major or moderate impact on sales and employment, and around half envisage there would be a major or moderate impact on output.</p> <p>In relation to employment and industry sectors, the greatest anticipated employment change will typically occur amongst the services sectors, such as in retailing, food and drink and other local services. This would provide opportunities for local employment in providing support services and for higher skilled occupations in the City area.</p> <p>An estimation of the exact level of local change has not been possible to be derived, due to the insufficient level of quantitative data provided in response to the business survey. It would not be statistically reliable to extrapolate from the limited sample size. However, it can be concluded that local businesses generally believe the junction improvements will positively impact business prospects and by extension employment and GVA in the Aberdeen and Aberdeenshire areas.</p>	<p>It is estimated that some but a relatively small growth in economic performance and employment would occur across the TTWA in the medium to long term. The majority of economic benefits would be derived from releasing the constraint on economic growth. Unexamined but likely positive impacts would flow from accommodating increased traffic resulting from forecast growth in airport passengers.</p> <p>(Minor to Moderate Positive Benefit)</p>

	<p>National Economic Impacts</p>	<p>At the national level, it is estimated that there will be very limited positive or negative employment impacts experienced elsewhere within Scotland, i.e. outside Aberdeen and immediate adjoining parts of Aberdeenshire. This will reflect the localised nature of the proposed junction improvement, and the overall likelihood and effects of displacement, etc.</p> <p>Analysis of the notional employment by industry type show that minimal positive impacts will take place across the service sectors and in the oil &amp; gas sector and related industries, with similar minimal changes in value added/ business performance.</p> <p>Estimation of the level of change at a national economic level has not been practical to be derived, due to the insufficient level of quantitative data provided in the business survey.</p>	<p>There will be limited, if any, employment change and GVA growth at the national economy, reflecting the localised nature of this project.</p> <p>(Minor but statistically insignificant Positive Benefit)</p>
<p>Distributional Impacts</p>	<p>By improving traffic flow and reducing congestion the junction improvements would lead to some positive economic benefits in the wider study area. Increased accessibility would ease travel in and out of the City from the surrounding environs therefore increasing accessibility and size of the potential labour pool. Additionally the reduction of costs would lead to some though slight increases in GVA over the medium term. However as it is an improvement to an already existing junction these effects would be limited in their scope and magnitude. The most significant near term impacts would occur from the reduction of costs associated with improved journey times and increased reliability.</p> <p>There are most likely to be benefits gained in the most local regeneration area situated adjacent to the proposed transport infrastructure improvements. Middlefield in</p>	<p>Small scale employment benefits for locals, particularly in services. Limited potential job prospects for much of the local population if the junction improvement is viewed in conjunction with wider regeneration efforts.</p> <p>(No effect at local level)</p>	

particular suffers from varying aspects of social exclusion and relative deprivation. The junction improvement alone is unlikely to have few positive medium-to-long term impacts unless the new road layout provides the opportunity to improve links to services and in tandem with any regeneration initiatives and wider transport infrastructure plans creates commercial opportunities in the area. The opportunity is minimal with Option 12.

In employment terms, any potential growth in the services sector could provide opportunities for higher employment. In tandem with regeneration efforts, wider society changes will provide positive impacts and other opportunities across the social spectrum.

Estimation of the extent of distributional impact could not be derived, due primarily to insufficient scope of the business survey and study in general.

<b>Integration</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Transport Interchanges	Services & Ticketing	Minor Positive effect	Over 130 buses in peak periods
	Infrastructure & Information	No effect	
Land-use Transport Integration		No effect on National and Local Planning Policies to support SIP areas	SPP17 Planning for Transport – Social Inclusion Aims. Regeneration programme for the Middlefield and the other areas across Aberdeen City is a supported by Aberdeen City Council aim.
Policy Integration		Minor Positive effect (potential to reduce rat running)	Disability Discrimination Act 1995 People and Place: Regeneration Policy Statement, Scottish Executive, June 2006

<b>Accessibility &amp; Social Inclusion</b>			
<b>Sub-criterion</b>	<b>Item</b>	<b>Qualitative Information</b>	<b>Quantitative Information</b>
Community Accessibility	Public Transport Network Coverage	No effect	No effect
	Access to Other Local Services	Slight Severance to existing walk distances but some benefits also depending on destinations.	Population estimate of 2097 people living in Middlefield (based on 2005 figures)
Comparative Accessibility	Distribution/Spatial Impacts by Social Group	As this was a local appraisal a distributional assessment for key population groups was mainly scoped out. Benefit to public transport used by non-car owning households was reviewed.	Both car and non-car owning households using Haudagain will comparatively each see benefits in journey times relative to the 2004 Base in 2027.
	Distribution/Spatial Impacts by Area	Potential to benefit North of Aberdeen	Impact on wider area.
<b>Strategic Environmental Assessment (SEA)</b>			
Summary of SEA outcome where appropriate	Not undertaken.		

<b>Cost to Public Sector</b>		
<b>Item</b>	<b>Qualitative information</b>	<b>Quantitative information</b>
Public Sector Investment Costs	Cost at 2002 prices quoted	£17.79M
Public Sector Operating & Maintenance Costs	Not Calculated	£0
Grant/Subsidy Payments	Not Identified	£0
Revenues	No tolls or parking charges, or other relevant revenue streams	£0
Taxation impacts	Identify any changes in tax revenues attributable to the proposal, e.g. loss of fuel duty due to modal shift.	£7.20M

<b>Monetised Summary</b>	
Present Value of Transport Benefits	Total PVB = £241.37M
Present Value of Cost to Government	Total PVC = £24.99M
Net Present Value	Total NPV = £216.38M
Benefit-Cost to Government Ratio	BCR <sub>govt.</sub> Ratio = 9.66
Benefit-Cost to Government Ratio (including WEBS)	Not Calculated
Benefit-Cost to Funding Agency Ratio	BCR <sub>FA</sub> Ratio = 13.16

