

E APPENDIX E – AST TABLES





<p>Economic Context: (2006 Data obtained from www.aberdeenshire.gov.uk/statistics)</p>	<p>Portlethen is the nearest Aberdeenshire town to the Banchory Leggart and Schoolhill sites. The town has a population of 6,632 and was developed as a new town in the 1970s to accommodate the demand for new housing in Aberdeen which was generated by the oil and gas boom. The majority (64.2%) of residents aged 16-74 work in Aberdeen City. The Ury and Mains of Cowie sites are located on the edge of Stonehaven. Stonehaven has a population of 10,614 and was originally developed round the town's harbour in the 16th century. The greatest proportion (50.3%) of residents aged 16-74 work in Aberdeenshire with 46.3% working in Aberdeen City.</p> <p>Key indicators which pertain to the change in traffic flows and hourly rail patronage & utilisation have been extracted from ASAM4. The change between 2007 and 2023 with the addition of development generated trips is summarised below:</p>																		
<p>Cumulative Transport Impacts</p>	<table border="1"> <thead> <tr> <th>Indicator</th> <th>Location</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>Daily traffic flows Change 2007-2023 ¹</td> <td>A90(T) Bridge of Dee Approach</td> <td>0%</td> </tr> <tr> <td>AM Peak hour traffic flows Change 2007-2023 ²</td> <td>A90(T) South of Charleston</td> <td>6%</td> </tr> <tr> <td>Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³</td> <td>A90(T) Bridge of Dee Approach</td> <td>-5%</td> </tr> <tr> <td></td> <td>A90(T) South of Charleston</td> <td>-5%</td> </tr> <tr> <td></td> <td>Northbound rail travel north of Portlethen</td> <td>17%</td> </tr> </tbody> </table>	Indicator	Location	Change	Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	0%	AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	6%	Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-5%		A90(T) South of Charleston	-5%		Northbound rail travel north of Portlethen	17%
Indicator	Location	Change																	
Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	0%																	
AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	6%																	
Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-5%																	
	A90(T) South of Charleston	-5%																	
	Northbound rail travel north of Portlethen	17%																	
<p>Planning Objectives</p>																			
<p>Objective:</p>	<p>Performance against planning objective:</p>																		
<ul style="list-style-type: none"> Objective 1 – Make the most efficient use of the transport network <ul style="list-style-type: none"> – by movement of people and goods using existing and committed networks; locally, across boundaries, and strategically 	<p>Journey time and queue length data from microsimulation modelling indicators for the A90(T) northbound between Charleston and Bridge of Dee are summarised as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Journey Time ⁴</th> <th>Queue Length ⁵</th> </tr> </thead> <tbody> <tr> <td>2007 Base</td> <td>15.7mins</td> <td>4,100m</td> </tr> <tr> <td>2023</td> <td>19.5mins</td> <td>6,300m</td> </tr> </tbody> </table> <p>Key issue to address: In the test queuing from Bridge of Dee to the Banchory Leggart Access junction causes queues backing up into the site in the AM peak.</p>				Journey Time ⁴	Queue Length ⁵	2007 Base	15.7mins	4,100m	2023	19.5mins	6,300m							
	Journey Time ⁴	Queue Length ⁵																	
2007 Base	15.7mins	4,100m																	
2023	19.5mins	6,300m																	

- Objective 2 – **Reducing the need for people to travel** – in terms of communities to operate locally for some journeys, by reducing distance to other facilities

ASAM4 has been used to predict the overall increase in vehicle kilometres which is generated by the land use scenario in 2023 when compared to 2007:

	Kilometres per year ⁶
2007 Base	3,819million
2023	960million
Increase (2007-2023)	25%

- Objective 3 – **Making sure that walking and cycling are attractive choices** – by taking cognisance where sites are accessible to facilities within an active travel range and that any natural or manmade barriers to walking or cycling movement are considered

Site Accessibility Indicators

Existing Employment Sites

Employment population, provided by 2001 Census data, within the following distances of the sites:
 Convenient walking distance (1.6km) – 4,039 employees
 Convenient cycling distance (5.0km) – 51,028 employees

Existing + Potential Future Employment Sites

Convenient walking distance (1.6km) – 5,415 employees
 Convenient cycling distance (5.0km) – 52,404 employees

Proposed Employment Sites

	Future On-site Employment	North Portlethen (K136)	Marywell (K45 & K135)	Stonehaven (K36 & K67)
Banchory	√√	X√	X√	XX
Leggart				
Schoolhill	√√	√√	X√	XX
Ury	None	XX	XX	√√
Mains of Cowie	None	XX	XX	X√

Key:

- XX Not accessible on foot or by cycle
- X√ Not accessible on foot but accessible by cycle
- √√ Potentially accessible on foot and by cycle

Note: Distance measured from centre of site

- Objective 4 – **Making sure that public transport is an attractive choice** – by making best locational use of existing public transport networks and identifying where additional measures can be effectively provided

Existing and Proposed Education Amenities

	Existing Primary School	Proposed Primary School	Existing Secondary School	Proposed Secondary School
Banchory Leggart	X√	√√	X√	X√*
Schoolhill	X√	√√	X√	XX*
Ury	X√	√√	√√	N/A
Mains of Cowie	√√	√√	√√	N/A

* Note: proposed secondary school assumed to be located at Loirston Loch

Assessment of physical barriers to active travel

Base / Issue:

Consideration:

River Dee presents a barrier to movement to the north of the Banchory Leggart site

Provision of a foot / cycle bridge to provide connection to the existing pedestrian network located to the north

A90(T) presents a barrier to movement to the east of the Banchory Leggart site

Introduction of pedestrian crossing facilities in association with reduced speed limit on de-trunked A90

Limited pedestrian / cycle network in vicinity of Banchory Leggart site

Provision of connection between site and existing transport networks

Limited pedestrian network in vicinity of Schoolhill site

Provision of connection between site and existing transport networks

Glen Ury presents a barrier to movement to the west of the Ury site

Provide foot / cycle crossing of the river as part of a vehicular bridge over Glen Ury

The site at Ury is located on an area of land which is over 45m higher than the town centre

Provide adequate alternatives to walking and cycling i.e. public transport links

Existing Public Transport Provision						
Peak Hour Rail Travel	Nearest Rail Station	Banchory Leggart Portlethen	Schoolhill Portlethen	Weighted Average Overall Journey Time	Ury Stonehaven	For Information Only Mains of Cowie Stonehaven
	Distance to Rail Station ⁷	6km	3km	31mins	3km	2km
	Travel Time to Aberdeen ⁸	31 – 33mins	28 – 30mins	31mins	36-40mins	33-37mins
Peak Hour Bus Travel	Rail Frequency ⁹	2 services	2 services	42mins	4 services	4 services
	Travel Time to Aberdeen ¹⁰	40mins	45mins	42mins	60mins	55mins
Peak Hour Car Travel	Travel Time to Aberdeen ¹¹	20mins	23mins	21mins	37mins	39mins
Peak Hour Bus Travel	Travel Time to Westhill ¹²	55mins	65mins	59mins	70mins	68mins
Peak Hour Car Travel	Travel Time to Westhill ¹²	35mins	43mins	38mins	53mins	54mins
Bus Measures						
Base / Issue:						
Banchory Leggart site has a poor level of existing service provision due to its rural location						
Schoolhill site is currently served by a 60min frequency service which provides linkage between the site and Aberdeen						
Services 107, 117 and X7 currently connect the Ury site with Aberdeen. Current A90/B979 interchange arrangement does not facilitate the services to route past the site when returning from Aberdeen						
Mains of Cowie site served by bus services which provide connection to the centre of Aberdeen in addition to the centre of Stonehaven and the town's rail station						
Additional Measures:						
Introduce extended or diverted service – potential to extend existing Kincorth area service (No. 17)						
Introduce a new 30 minute frequency circular bus service to provide connection between the Banchory Leggart and Schoolhill sites and Portlethen with its associated amenities						
Stop services at site in association with junction alterations introduced as part of the AWPR Fastlink construction. Divert Stonehaven town service (No. 108) through site using future A957-B979 link road						
Current level of service provision expected to be adequate to serve a site of the scale and location proposed						

	<p>Proposed Park & Ride at Schoolhill Potential to use Proposed Park & Ride Site</p> <p>K121 Banchory Leggart Minor – site located to north of facility with commuters required to travel away from their final destination to access the park & ride</p> <p>K125 Schoolhill Park & Ride located adjacent to site and likely to provide an attractive and convenient facility for Aberdeen commuters</p> <p>K73 Ury Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K122 Mains of Cowie Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>Proposed High Occupancy Vehicle (HOV) Lane A90(T) Northbound</p> <p>Site Design Issues Cumulative Impact</p> <p>Banchory Leggart Major negative impact on operation and design of HOV lane</p> <p>Schoolhill No impact</p> <p>Ury / Mains of Cowie No impact</p> <p>HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)</p>
Implementability Appraisal	
Key to Appraisal Score	The Implementability Appraisal has been undertaken using the following seven point scale of assessment which is set out in STAG: +3 – Major benefit +2 – Moderate benefit +1 – Minor benefit 0 – No benefit or impact -1 – Small negative impact -2 – Moderate negative impact -3 – Major negative impact The following section appraises the Banchory Leggart and Schoolhill sites in detail.
Technical:	Appraisal Score: -1 to +2 The Banchory Leggart site can currently only be accessed from the local road network with no trunk road junctions

	<p>located in the vicinity of the site. It is proposed to construct a new at-grade junction on the A90(T) at Nigg Way to provide access into the Banchory Leggart site. A bus gate is to be installed on Nigg Way in association with the development access construction. Leggart Terrace is also to be restricted to the use of bus services by the installation of a bus gate with general traffic diverted through the development access junction. The A90(T) is being de-trunked in association with the AWPR in the vicinity of the site.</p> <p>The Schoolhill site is expected to be relatively straightforward to access from the both the local and strategic road network as it is located close to the Findon and Badentoy A90(T) interchanges.</p> <p>The impact of the existing A90(T) and proposed AWPR as barriers to movement for residents of the Banchory Leggart site, can be minimised by the introduction of an at-grade crossing on the A90(T) in conjunction with a reduced speed limit. The form of the development access would be required to take cognisance of a requirement for future bus services to route through it</p>																				
Operational:	<p>Appraisal Score: +1 to +2</p> <p>The scale of the developments is likely to enable any new or extended bus services to be self-financing following the first 3 - 5 years being underwritten by developers. The location of the Banchory Leggart site provides opportunity to extend the existing Aberdeen City Centre – Kincorth bus service (Service No. 17) into the site via the proposed development access. It is suggested that the extension could be implemented without the need to introduce additional buses by reducing the service frequency from its current level to a 20 minute frequency</p>																				
Financial:	<p>Appraisal Score: 0</p> <p>It is expected that the majority of the transport infrastructure costs which will be associated with the development of the sites will be borne by developers.</p> <p>The scale of both development sites is expected to support the extension of existing and introduction of new bus services without the need for financial support following initial funding by developers. The Schoolhill site is expected to support the operation of the adjacent Park and Ride facility which is proposed to be constructed adjacent to the A90(T) Findon Interchange.</p>																				
Public:	<p>Appraisal Score: -1 to +1</p> <p>The development transport proposals could generate objections by introducing additional transport movements in rural areas. The Banchory Leggart site is considered to be less straightforward to access than the Schoolhill site given that the site will require construction of a minimum of one access on the A90(T). This is likely to generate an increased level of disruption to existing road users both during construction and terms of its operation. The Schoolhill site can be accessed from the A90(T) via two existing grade separated junctions and will not require the formation of a new junction on the A90(T).</p> <p>Improvements to transport infrastructure and bus service provision are likely to be welcomed by existing Portlethen residents and employees.</p>																				
General	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Implementability Appraisal can be summarised as follows:</p> <table border="1"> <thead> <tr> <th colspan="4">Implementability Appraisal</th> </tr> <tr> <th>Site</th> <th>Technical</th> <th>Operational</th> <th>Financial</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-1</td> <td>+1</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td></td> <th>Public</th> </tr> <tr> <td></td> <td></td> <td></td> <td>0</td> </tr> </tbody> </table>	Implementability Appraisal				Site	Technical	Operational	Financial	K73 Ury	-1	+1	0				Public				0
Implementability Appraisal																					
Site	Technical	Operational	Financial																		
K73 Ury	-1	+1	0																		
			Public																		
			0																		

	K122 Mains of Cowie	+1	+1	0	0	It is not considered that either of the site's transport interventions will generate other than a small negative impact.
STAG Criteria						
Criterion	Assessment Summary	Supporting Information				
Environment:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact - no impact</p>	<p>Appraisal Score: -2 to 0</p> <p>The area to the south of the River Dee which forms part of the Banchory Leggart site is classified as an Aberdeenshire Area of Landscape Significance. A large area of the site which is located in the vicinity of Banchory Devenick is shown to be an Aberdeenshire SMR site. This has the potential to influence the form and location of any northern development accesses including potential provision of a footbridge over the River Dee to provide connection to the Garthdee and Kaimhill areas of Aberdeen, although it will not preclude development due to its classification. There appear to be no significant environmental constraints to the east of the site which may have prevented access being taken from the A90(T). The site's rural location is relatively remote from existing properties and its development is unlikely to have a significant impact on a large number of residential receptors.</p> <p>There are no environmental constraints which are expected to significantly affect the development of an access strategy for the Schoolhill site. There are however, two areas of Aberdeenshire SMR sites which could have an impact on the form and location of an access from the south although the sites don't preclude development due to their classification. There are no environmental constraints shown to be located to the east of the site. The site is relatively remote from existing residential areas with its development unlikely to have an impact on local receptors.</p>				
Safety:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Small negative impact - no impact</p>	<p>Appraisal Score: -1 to 0</p> <p>The main point of access to the Banchory Leggart site will be provided from the east via a newly constructed junction on the A90(T) which is planned to be de-trunked following completion of the AWPR. The introduction of an additional junction has the potential to have an impact on the operation of the network and safety as an increase in traffic and traffic manoeuvres at more junctions would increase the likelihood of accidents. However, road infrastructure will be designed in accordance with standards to ensure safe operation. The form of access junction will be designed to ensure that pedestrians will be able to safely cross the A90(T) minimising the impact of the trunk road as a barrier to movement. Development of the Schoolhill site is expected to have an impact on the operation of local transport networks in terms of additional traffic. No additional junctions are required to be constructed on the strategic road network to provide access into the site with the site accessed directly from the local road network.</p> <p>Development of the Banchory Leggart and Schoolhill sites will include a network of pedestrian and cycle facilities which is likely to provide an improvement over the existing situation which requires pedestrians</p>				

		and cyclists to use the rural road network to travel in the vicinity of the areas.
Economy:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Small negative impact</p>	<p>Appraisal Score: -1</p> <p>The majority of trips which are predicted to be generated by the Banchory Leggart and Schoolhill sites are expected to travel north to employment opportunities which are located in and around Aberdeen. Whilst this will increase the magnitude of traffic travelling on the A90(T) in the vicinity of the site, it is expected that the AWPR will remove a significant proportion of traffic from the road which is to be de-trunked.</p> <p>0</p>
Integration:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Minor benefit - moderate benefit</p>	<p>Appraisal Score: +1 to +2</p> <p>It is expected that development of the Banchory Leggart site will assist with supporting the provision of a new footbridge crossing of the River Dee to provide linkage to the Garthdee and Kaimhill areas of Aberdeen. In addition the development will support the provision of a new Portlethen bus service which will link the site to employment, education and retail facilities provided in the town. It is also considered that the Banchory Leggart development will require an extension of Service No. 17 to integrate with the local area of Kincorth.</p> <p>Development of the Schoolhill site will provide a residential population which is located adjacent to the future bus based park & ride facility at Schoolhill. It is expected that development of the site would integrate well with this proposed facility in addition to supporting the introduction of a new Portlethen town bus service.</p> <p>It is expected that any improvements to local bus services can be accommodated without any detriment to existing travellers with the introduction of a new Portlethen bus service expected to benefit existing residents of the town. Journey times will be unaffected to the centre of Aberdeen by extending Service No. 17. Extending the service will however, have an impact on the service frequency without the introduction of additional buses to serve the route. It is anticipated that a 20 minute service frequency should be achievable without the introduction of additional buses to serve the route.</p>
Accessibility and Social Inclusion:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate benefit</p>	<p>Appraisal Score: +2</p> <p>It is proposed to introduce a new bus service for Portlethen as part of this scenario with the service connecting the Banchory Leggart and Schoolhill sites with facilities and amenities provided in Portlethen including the rail station. The new bus service is expected to improve the accessibility of the area for existing Portlethen residents and provide frequent connection between the town and the Schoolhill park and ride facility.</p> <p>Development of the sites will include a range of facilities and amenities including employment opportunities and education, retail and community facilities which will benefit both future and existing residents living in the vicinity of the sites. The extension of Service No. 17 will provide opportunity for existing Portlethen residents to access facilities and amenities which are to be provided as part of the Banchory Leggart development.</p>

Complementary Sites STAG Impacts	Description of Impacts	Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Appraisal against STAG Criteria can be summarised as follows: STAG Criteria				
		Environment	Safety	Economy	Integration	Accessibility & Social Inclusion
	Assessment using 7 point scale	-2	0	0	+1	+1
	Moderate negative impact – Minor benefit	0	0	0	0	0
		It is considered that the Mains of Cowie site will not generate a significant impact when appraised against STAG criteria. The Ury site has been judged to generate a moderate negative environmental impact as the majority of the site and access option locations are shown to be listed within Aberdeenshire's SMR. The category of site does not preclude development within it.				

Note: STAG Criteria Definitions obtained from <http://www.transportscotland.gov.uk/stag/td/Part1/5.4>

References:

- 1 - Change in Daily Traffic Flow on A90(T) (Table 7.2 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 2 - Time lost due to congestion (% change 2007 - 2023) comparison with road network operation during an average hour in the AM and PM Peak periods (Table 5.5 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 3 - Change in Rail Patronage & Utilisation North of Portlethen (Hourly Passengers) (Table 7.7 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 4 - Corridor S-Paramics assessment, A90 northbound AM peak period (06:30 - 09:30) between Charlestown and Bridge of Dee with allowance for re-routing via Findon (see SIAS Report Ref 72376) - Maximum Journey Time shown
- 5 - Maximum cordoned queue in the AM peak period (06:30 - 09:30) predicted by the S-Paramics corridor assessment with allowance for re-routing via Findon (see SIAS Report Ref TPATCDPM/72492)
- 6 - Change in Annual Vehicle Kilometres: 2007 - 2023 (Millions) (Table 5.3 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 7 - Distance to nearest rail station estimated using <http://www.gmap-pedometer.com/> and measured from the site boundary
- 8 - Rail service frequency obtained (30/10/09) from <http://www.nationalrail.co.uk/>
- 9 - Journey time calculations based on total travel from centre of sites to Aberdeen City Centre (including car access to nearest rail station), rail timetable information obtained (30/10/09) from <http://www.nationalrail.co.uk/> and car travel time estimated using <http://www.transportdirect.info/>
- 10 - Total average bus service journey time estimated using Accession GIS software + 5 minute wait time
- 11 - Average car travel journey time data estimated using <http://www.transportdirect.info/> and assumes travel to City Centre with 5 minutes added for accessing car park
- 12 - Journey time calculations based on total travel from centre of sites to Westhill. Quickest journey time by car and public transport has been estimated using <http://www.transportdirect.info/>

DPM_TAG (STAG Part 1 type) Appraisal Summary Tables

Proposal Details																				
Study	<p>Aberdeenshire Council Local Development Plan 2010 A90 South Comparative Appraisal of Major Sites</p>																			
Proposal Name:	<p>Land Use Scenario 1 – Transport Test 2</p>																			
Proposal Description:	<p>Land Use Scenario</p> <p>K121 Banchory Leggart – 2,544 households - 840 jobs</p> <p>K125 Schoolhill – 1,626 households - 537 jobs</p> <p>K73 Ury - 230 households</p> <p>K122 Mains of Cowie - 200 households</p> <p>Includes Structure Plan allocations in all other locations</p>	<p>Transport Test</p> <p>2 x accesses from A90 at Nigg Way and Redcraigs and 2 x local accesses from south. Bus gates to be introduced on Leggart Terrace and Nigg Way</p> <p>2 local accesses from north, 1 from east and 1 from south</p> <p>1 access from A957 Slug Road and 1 access from B979</p> <p>1 access from B979 and 1 from Golf Course Road</p> <p>Includes committed Structure Plan infrastructure</p>																		
Background Information																				
Geographic Context:	<p>Banchory Leggart – the site is located to the south of Aberdeen and is bound on the north by the B9077 and River Dee, east by the Aberdeenshire Local Authority boundary and the A90(T), and south by the route of the proposed AWPR.</p> <p>Schoolhill – the site is located to the north-west of Portlethen and is bound on the north by the route of the proposed AWPR, east by the A90(T) and south by the Badentoy Industrial Estate.</p> <p>Ury – the site is located to the north of Stonehaven and is bound on the east by the B979 and the south by the A90(T). Mains of Cowie – the site is bound to the west by the B979 and the south by Golf Course Road which currently facilitates access into Stonehaven from the southbound A90(T).</p> <p>The sites are currently rural in nature with the larger sites encompassing residential hamlets and farmsteads.</p> <p>The 2009 Scottish Index of Multiple Deprivation (SIMD) confirms the SIMD Rank and Geographic Access Domain Rank for the sites:</p>																			
Social Context:	<table> <tr> <td>Site</td> <td>SIMD Rank</td> <td>Geographic Access Domain (GAD) Rank</td> </tr> <tr> <td>K121 Banchory Leggart</td> <td>4689</td> <td>527</td> </tr> <tr> <td>K125 Schoolhill</td> <td>4689</td> <td>527</td> </tr> <tr> <td>K73 Ury</td> <td>5940</td> <td>257</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>5940</td> <td>257</td> </tr> <tr> <td>Maximum Rank for Scotland</td> <td>6505</td> <td>6505</td> </tr> </table> <p>The above summary confirms that the sites are all in the top 25% overall least deprived areas in Scotland (SIMD Rank). The sites are in rural areas and are within the top 10% most deprived areas in terms of access to facilities (GAD Rank), in Scotland.</p>	Site	SIMD Rank	Geographic Access Domain (GAD) Rank	K121 Banchory Leggart	4689	527	K125 Schoolhill	4689	527	K73 Ury	5940	257	K122 Mains of Cowie	5940	257	Maximum Rank for Scotland	6505	6505	
Site	SIMD Rank	Geographic Access Domain (GAD) Rank																		
K121 Banchory Leggart	4689	527																		
K125 Schoolhill	4689	527																		
K73 Ury	5940	257																		
K122 Mains of Cowie	5940	257																		
Maximum Rank for Scotland	6505	6505																		

<p>Economic Context: (2006 Data obtained from www.aberdeenshire.gov.uk/statistics)</p>	<p>Portlethen is the nearest Aberdeenshire town to the Banchory Leggart and Schoolhill sites. The town has a population of 6,632 and was developed as a new town in the 1970s to accommodate the demand for new housing in Aberdeen which was generated by the oil and gas boom. The majority (64.2%) of residents aged 16-74 work in Aberdeen City. The Ury and Mains of Cowie sites are located on the edge of Stonehaven. Stonehaven has a population of 10,614 and was originally developed round the town's harbour in the 16th century. The greatest proportion (50.3%) of residents aged 16-74 work in Aberdeenshire with 46.3% working in Aberdeen City.</p> <p>Key indicators which pertain to the change in traffic flows and hourly rail patronage & utilisation have been extracted from ASAM4. The change between 2007 and 2023 with the addition of development generated trips is summarised below:</p>												
<p>Cumulative Transport Impacts</p>	<table border="1"> <thead> <tr> <th>Indicator</th> <th>Location</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>Daily traffic flows Change 2007-2023 ¹</td> <td>A90(T) Bridge of Dee Approach A90(T) South of Charleston</td> <td>0% 1%</td> </tr> <tr> <td>AM Peak hour traffic flows Change 2007-2023 ²</td> <td>A90(T) Bridge of Dee Approach A90(T) South of Charleston</td> <td>-5% -12%</td> </tr> <tr> <td>Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³</td> <td>Northbound rail travel north of Portlethen</td> <td>17%</td> </tr> </tbody> </table>	Indicator	Location	Change	Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach A90(T) South of Charleston	0% 1%	AM Peak hour traffic flows Change 2007-2023 ²	A90(T) Bridge of Dee Approach A90(T) South of Charleston	-5% -12%	Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	Northbound rail travel north of Portlethen	17%
Indicator	Location	Change											
Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach A90(T) South of Charleston	0% 1%											
AM Peak hour traffic flows Change 2007-2023 ²	A90(T) Bridge of Dee Approach A90(T) South of Charleston	-5% -12%											
Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	Northbound rail travel north of Portlethen	17%											
<p>Planning Objectives</p>													
<p>Objective:</p>	<p>Performance against planning objective:</p>												
<ul style="list-style-type: none"> Objective 1 – Make the most efficient use of the transport network <ul style="list-style-type: none"> – by movement of people and goods using existing and committed networks; locally, across boundaries, and strategically 	<p>0</p> <p>Journey time and queue length data from microsimulation modelling indicators for the A90(T) northbound between Charleston and Bridge of Dee are summarised as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Journey Time ⁴</th> <th>Queue Length ⁵</th> </tr> </thead> <tbody> <tr> <td>2007 Base</td> <td>15.7mins</td> <td>4,100m</td> </tr> <tr> <td>2023</td> <td>19.0mins</td> <td>6,600m</td> </tr> </tbody> </table> <p>Key issue to address: In the test queuing from the Bridge of Dee to the Banchory Leggart Access junction causes queues backing up into the site in the AM peak. The secondary junction in this test provides a secondary means of access to the A90(T) further from the source of congestion.</p>				Journey Time ⁴	Queue Length ⁵	2007 Base	15.7mins	4,100m	2023	19.0mins	6,600m	
	Journey Time ⁴	Queue Length ⁵											
2007 Base	15.7mins	4,100m											
2023	19.0mins	6,600m											

- Objective 2 – **Reducing the need for people to travel** – in terms of communities to operate locally for some journeys, by reducing distance to other facilities

ASAM4 has been used to predict the overall increase in vehicle kilometres which is generated by the land use scenario in 2023 when compared to 2007:

	Kilometres per year ⁶
2007 Base	3,819million
2023	958million
Increase (2007-2023)	25%

- Objective 3 – **Making sure that walking and cycling are attractive choices** – by taking cognisance where sites are accessible to facilities within an active travel range and that any natural or manmade barriers to walking or cycling movement are considered

Site Accessibility Indicators

Existing Employment Sites

Employment population, provided by 2001 Census data, within the following distances of the sites:
 Convenient walking distance (1.6km) – 4,039 employees
 Convenient cycling distance (5.0km) – 51,028 employees

Existing + Potential Future Employment Sites

Convenient walking distance (1.6km) – 5,415 employees
 Convenient cycling distance (5.0km) – 52,404 employees

Proposed Employment Sites

	Future On-site Employment	North Portlethen (K136)	Marywell (K45 & K135)	Stonehaven (K36 & K67)
Banchory	√√	X√	X√	XX
Leggart	√√	√√	X√	XX
Schoolhill	None	XX	XX	√√
Ury	None	XX	XX	X√
Mains of Cowie	None	XX	XX	

Key:

XX Not accessible on foot or by cycle

X√ Not accessible on foot but accessible by cycle
 √√ Potentially accessible on foot and by cycle
 Note: Distance measured from centre of site

Existing and Proposed Education Amenities

	Existing Primary School	Proposed Primary School	Existing Secondary School	Proposed Secondary School
Banchory Leggart	X√	√√	X√	X√ ¹
Schoolhill	X√	√√	X√	XX ¹
Ury	X√	√√	√√	N/A
Mains of Cowie	√√	√√	√√	N/A

¹ Note: proposed secondary school assumed to be located at Loirston Loch

- Objective 4 – Making sure that public transport is an attractive choice – by making best locational use of existing public transport networks and identifying where additional measures can be effectively provided

Assessment of physical barriers to active travel

Base / Issue:	Consideration:
River Dee presents a barrier to movement to the north of the Banchory Leggart site	Provision of a foot / cycle bridge to provide connection to the existing pedestrian network located to the north
A90(T) presents a barrier to movement to the east of the Banchory Leggart site	Introduction of pedestrian crossing facilities in association with reduced speed limit on de-trunked A90
Limited pedestrian / cycle network in vicinity of Banchory Leggart site	Provision of connection between site and existing transport networks
Limited pedestrian network in vicinity of Schoolhill site	Provision of connection between site and existing transport networks
Glen Ury presents a barrier to movement to the west of the Ury site	Provide foot / cycle crossing of the river as part of a vehicular bridge over Glen Ury
The site at Ury is located on an area of land which is over 45m higher than the town centre	Provide adequate alternatives to walking and cycling i.e. public transport links

Existing Public Transport Provision

	Nearest Rail Station	Banchory Leggart Portlethen	Schoolhill Portlethen	Weighted Average Overall Journey Time	Ury Stonehaven	For Information Only Mains of Cowie Stonehaven
Peak Hour Rail Travel						
	Distance to Rail Station ⁷	6km	3km	3km	3km	2km
	Travel Time to Aberdeen ⁸	31 – 33mins	28 – 30mins	31mins	36-40mins	33-37mins
	Rail Frequency ⁹	2 services	2 services	42mins	4 services	4 services
Peak Hour Bus Travel	Travel Time to Aberdeen ¹⁰	40mins	45mins	42mins	60mins	55mins
Peak Hour Car Travel	Travel Time to Aberdeen ¹¹	20mins	23mins	21mins	37mins	39mins
Peak Hour Bus Travel	Travel Time to Westhill ¹²	55mins	65mins	59mins	70mins	68mins
Peak Hour Car Travel	Travel Time to Westhill ¹²	35mins	43mins	38mins	53mins	54mins

Bus Measures

Base / Issue:

Banchory Leggart site has a poor level of existing service provision due to its rural location

Schoolhill site is currently served by a 60min frequency service which provides linkage between the site and Aberdeen

Services 107, 117 and X7 currently connect the Ury site with Aberdeen. Current A90/B979 interchange arrangement does not facilitate the services to route past the site when returning from Aberdeen

Additional Measures:

Introduce extended or diverted service – potential to extend existing Kincorth area service (No. 17)

Introduce a new 30 minute frequency circular bus service to provide connection between the Banchory Leggart and Schoolhill sites and Portlethen with its associated amenities

Stop services at site in association with junction alterations introduced as part of the AWPR Fastlink construction. Divert Stonehaven town service (No. 108) through site using future A957-B979 link road

	<p>Mains of Cowie site served by bus services which provide connection to the centre of Aberdeen in addition to the centre of Stonehaven and the town's rail station</p> <p>Current level of service provision expected to be adequate to serve a site of the scale and location proposed</p> <p>Proposed Park & Ride at Schoolhill</p> <p>Potential to use Proposed Park & Ride</p> <p>K121 Banchory Leggart Minor – site located to north of facility with commuters required to travel away from their final destination to access the park & ride</p> <p>K125 Schoolhill Park & Ride located adjacent to site and likely to provide an attractive and convenient facility for Aberdeen commuters</p> <p>K73 Ury Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K122 Mains of Cowie Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>Proposed High Occupancy Vehicle (HOV) Lane A90(T) Northbound</p> <table border="1"> <thead> <tr> <th>Site</th> <th>Design Issues</th> <th>Cumulative Impact</th> </tr> </thead> <tbody> <tr> <td>Banchory Leggart</td> <td>Major negative impact on operation and design of HOV lane</td> <td></td> </tr> <tr> <td>Schoolhill</td> <td>No impact</td> <td>HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)</td> </tr> <tr> <td>Ury / Mains of Cowie</td> <td>No impact</td> <td></td> </tr> </tbody> </table>	Site	Design Issues	Cumulative Impact	Banchory Leggart	Major negative impact on operation and design of HOV lane		Schoolhill	No impact	HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)	Ury / Mains of Cowie	No impact	
Site	Design Issues	Cumulative Impact											
Banchory Leggart	Major negative impact on operation and design of HOV lane												
Schoolhill	No impact	HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)											
Ury / Mains of Cowie	No impact												
Implementability Appraisal													
Key to Appraisal Score	<p>The Implementability Appraisal has been undertaken using the following seven point scale of assessment which is set out in STAG:</p> <ul style="list-style-type: none"> +3 – Major benefit +2 – Moderate benefit +1 – Minor benefit 0 – No benefit or impact -1 – Small negative impact -2 – Moderate negative impact -3 – Major negative impact <p>The following section appraises the Banchory Leggart and Schoolhill sites in detail.</p>												

	<p>Appraisal Score: -2 to +2</p> <p>The Banchory Leggart site can currently only be accessed from the local road network with no trunk road junctions located in the vicinity of the site. It is proposed to construct two new at-grade junctions on the A90(T) at Nigg Way and Redraigs to provide access into the Banchory Leggart site. A bus gate is to be installed on Nigg Way in association with the development access construction. Leggart Terrace is also to be restricted to the use of bus services by the installation of a bus gate with general traffic diverted through the development access junction. The A90(T) is being de-trunked in association with the AWPR in the vicinity of the site. The proximity of the southern of the two A90(T) development accesses in relation to the proposed AWPR interchange at Charleston, could have an impact on the form and location of the southern access.</p> <p>The Schoolhill site is expected to be relatively straightforward to access from the both the local and strategic road network as it is located close to the Findon and Badentoy A90(T) interchanges.</p> <p>The impact of the existing A90(T) and proposed AWPR as barriers to movement for residents of the Banchory Leggart site, can be minimised by the introduction of an at-grade crossing on the A90(T) in conjunction with a reduced speed limit. The form of the development access would be required to take cognisance of a requirement for future bus services to route through it</p>
<p>Technical:</p>	<p>Appraisal Score: +1 to +2</p> <p>The scale of the developments is likely to enable any new or extended bus services to be self-financing following the first 3 - 5 years being underwritten by developers. The location of the Banchory Leggart site provides opportunity to extend the existing Aberdeen City Centre – Kincorth bus service (Service No. 17) into the site via the proposed development access. It is suggested that the extension could be implemented without the need to introduce additional buses by reducing the service frequency from its current level to a 20 minute frequency</p>
<p>Operational:</p>	<p>Appraisal Score: 0</p> <p>It is expected that the majority of the transport infrastructure costs which will be associated with the development of the sites will be borne by developers.</p> <p>The scale of both development sites is expected to support the extension of existing and introduction of new bus services without the need for financial support following initial funding by developers. The Schoolhill site is expected to support the operation of the adjacent Park and Ride facility which is proposed to be constructed adjacent to the A90(T) Findon Interchange.</p>
<p>Financial:</p>	<p>Appraisal Score: -2 to +1</p> <p>The development transport proposals could generate objections by introducing additional transport movements in rural areas. The Banchory Leggart site is considered to be less straightforward to access than the Schoolhill site as it will require construction of two new accesses on the A90(T). This is likely to generate an increased level of disruption to existing road users both during construction and terms of its operation. The Schoolhill site can be accessed from the A90(T) via two existing grade separated junctions and will not require the formation of a new junction on the A90(T).</p> <p>Improvements to transport infrastructure and bus service provision are likely to be welcomed by existing Portlethen residents and employees.</p>
<p>Public:</p>	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the</p>
<p>General</p>	

	<p>Implementability Appraisal can be summarised as follows:</p> <table border="1" data-bbox="225 584 352 1290"> <thead> <tr> <th colspan="4">Implementability Appraisal</th> </tr> <tr> <th>Technical</th> <th>Operational</th> <th>Financial</th> <th>Public</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> <tr> <td>+1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>Site K73 Ury K122 Mains of Cowie</p> <p>It is not considered that either of the site's transport interventions will generate other than a small negative impact.</p>				Implementability Appraisal				Technical	Operational	Financial	Public	-1	+1	0	0	+1	+1	0	0
Implementability Appraisal																				
Technical	Operational	Financial	Public																	
-1	+1	0	0																	
+1	+1	0	0																	
STAG Criteria																				
Criterion	Assessment Summary	Supporting Information																		
Environment:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact - no impact</p>	<p>Appraisal Score: -2 to 0</p> <p>The area to the south of the River Dee which forms part of the Banchory Leggart site is classified as an Aberdeenshire Area of Landscape Significance. A large area of the site which is located in the vicinity of Banchory Devenick is shown to be an Aberdeenshire SMR site. This has the potential to influence the form and location of any northern development accesses including potential provision of a footbridge over the River Dee to provide connection to the Garthdee and Kaimhill areas of Aberdeen, although it will not preclude development due to its classification. There appear to be no significant environmental constraints to the east of the site which may have prevented access being taken from the A90(T). The site's rural location is relatively remote from existing properties and its development is unlikely to have a significant impact on a large number of residential receptors.</p> <p>There are no environmental constraints which are expected to significantly affect the development of an access strategy for the Schoolhill site. There are however, two areas of Aberdeenshire SMR sites which could have an impact on the form and location of an access from the south although the sites don't preclude development due to their classification. There are no environmental constraints shown to be located to the east of the site. The site is relatively remote from existing residential areas with its development unlikely to have an impact on local receptors.</p>																		
Safety:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact - no impact</p>	<p>Appraisal Score: -2 to 0</p> <p>The main point of access to the Banchory Leggart site will be provided from the east via a newly constructed junction on the A90(T) which is planned to be de-trunked following completion of the AWPR. The introduction of an additional junction has the potential to have an impact on the operation of the network and safety as an increase in traffic and traffic manoeuvres at more junctions would increase the likelihood of accidents. Road infrastructure will be designed in accordance with standards to ensure safe operation, however the proximity of the southern of the two development accesses from the A90(T) / AWPR Charleston Interchange could have an impact on the safe operation of the A90 in the vicinity of the Banchory Leggart site. The form of access junctions will be designed to ensure that pedestrians will be able to safely cross the A90(T) minimising the impact of the trunk road as a barrier to movement.</p>																		

		<p>Development of the Schoolhill site is expected to have an impact on the operation of local transport networks in terms of additional traffic. No additional junctions are required to be constructed on the strategic road network to provide access into the site with the site accessed directly from the local road network.</p> <p>Development of the Banchory Leggart and Schoolhill sites will include a network of pedestrian and cycle facilities which is likely to provide an improvement over the existing situation which requires pedestrians and cyclists to use the rural road network to travel in the vicinity of the areas.</p>
<p>Economy:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Small negative impact</p>	<p>Appraisal Score: -1</p> <p>The majority of trips which are predicted to be generated by the Banchory Leggart and Schoolhill sites are expected to travel north to employment opportunities which are located in and around Aberdeen. Whilst this will increase the magnitude of traffic travelling on the A90(T) in the vicinity of the site, it is expected that the AWPR will remove a significant proportion of traffic from the road which is to be de-trunked.</p>
<p>Integration:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Minor benefit - moderate benefit</p>	<p>Appraisal Score: +1 to +2</p> <p>It is expected that development of the Banchory Leggart site will assist with supporting the provision of a new footbridge crossing of the River Dee to provide linkage to the Garthdee and Kaimhill areas of Aberdeen. In addition the development will support the provision of a new Portlethen bus service which will link the site to employment, education and retail facilities provided in the town. It is also considered that the Banchory Leggart development will require an extension of Service No. 17 to integrate with the local area of Kincorth.</p> <p>Development of the Schoolhill site will provide a residential population which is located adjacent to the future bus based park & ride facility at Schoolhill. It is expected that development of the site would integrate well with this proposed facility in addition to supporting the introduction of a new Portlethen town bus service.</p> <p>It is expected that any improvements to local bus services can be accommodated without any detriment to existing travellers with the introduction of a new Portlethen bus service expected to benefit existing residents of the town. Journey times will be unaffected to the centre of Aberdeen by extending Service No. 17. Extending the service will however, have an impact on the service frequency without the introduction of additional buses to serve the route. It is anticipated that a 20 minute service frequency should be achievable without the introduction of additional buses to serve the route.</p>
<p>Accessibility and Social Inclusion:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point</p>	<p>Appraisal Score: +2</p> <p>It is proposed to introduce a new bus service for Portlethen as part of this scenario with the service connecting the Banchory Leggart and Schoolhill sites with facilities and amenities provided in Portlethen including the rail station. The new bus service is expected to improve the accessibility of the area for existing Portlethen residents and provide frequent connection between the town and the Schoolhill park</p>

	<p>scale</p> <p>Moderate benefit</p>	<p>and ride facility.</p> <p>Development of the sites will include a range of facilities and amenities including employment opportunities and education, retail and community facilities which will benefit both future and existing residents living in the vicinity of the sites. The extension of Service No. 17 will provide opportunity for existing Portlethen residents to access facilities and amenities which are to be provided as part of the Banchory Leggart development.</p> <p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Appraisal against STAG Criteria can be summarised as follows:</p> <p>STAG Criteria</p> <table border="1"> <thead> <tr> <th>Site</th> <th>Environment</th> <th>Safety</th> <th>Economy</th> <th>Integration</th> <th>Accessibility & Social Inclusion</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-2</td> <td>0</td> <td>0</td> <td>+1</td> <td>+1</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is considered that the Mains of Cowie site will not generate a significant impact when appraised against STAG criteria. The Ury site has been judged to generate a moderate negative environmental impact as the majority of the site and access option locations are shown to be listed within Aberdeenshire's SMR. The category of site does not preclude development within it.</p>	Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion	K73 Ury	-2	0	0	+1	+1	K122 Mains of Cowie	0	0	0	0	0
Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion															
K73 Ury	-2	0	0	+1	+1															
K122 Mains of Cowie	0	0	0	0	0															
<p>Complementary Sites STAG Impacts</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact – Minor benefit</p>																			

Note: STAG Criteria Definitions obtained from <http://www.transportscotland.gov.uk/stag/id/Part1/5.4>

References:

- 1 - Change in Daily Traffic Flow on A90(T) (Table 7.2 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 2 - Time lost due to congestion (% change 2007 - 2023) comparison with road network operation during an average hour in the AM and PM Peak periods (Table 5.5 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 3 - Change in Rail Patronage & Utilisation North of Portlethen (Hourly Passengers) (Table 7.7 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 4 - Corridor S-Paramics assessment, A90 northbound AM peak period (06:30 - 09:30) between Charlestown and Bridge of Dee with allowance for re-routing via Findon (see SIAS Report Ref 72376) - Maximum Journey Time shown
- 5 - Maximum cordoned queue in the AM peak period (06:30 - 09:30) predicted by the S-Paramics corridor assessment with allowance for re-routing via Findon (see SIAS Report Ref TPATCDPM/72492)
- 6 - Change in Annual Vehicle Kilometres: 2007 - 2023 (Millions) (Table 5.3 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 7 - Distance to nearest rail station estimated using <http://www.gmap-pedometer.com/> and measured from the site boundary
- 8 - Rail service frequency obtained (30/10/09) from <http://www.nationalrail.co.uk/>
- 9 - Journey time calculations based on total travel from centre of sites to Aberdeen City Centre (including car access to nearest rail station), rail timetable information obtained (30/10/09) from <http://www.nationalrail.co.uk/> and car travel time estimated using <http://www.transportdirect.info/>
- 10 - Total average bus service journey time estimated using Accession GIS software + 5 minute wait time
- 11 - Average car travel journey time data estimated using <http://www.transportdirect.info/> and assumes travel to City Centre with 5 minutes added for accessing car park
- 12 - Journey time calculations based on total travel from centre of sites to Westhill. Quickest journey time by car and public transport has been estimated using <http://www.transportdirect.info/>

DPM_TAG (STAG Part 1 type) Appraisal Summary Tables

Proposal Details																			
Study	Aberdeenshire Council Local Development Plan 2010 A90 South Comparative Appraisal of Major Sites																		
Proposal Name:	Land Use Scenario 2 – Transport Test 1																		
	Land Use Scenario																		
Proposal Description:	<p>K121 Banchory Leggart – 2,544 households - 840 jobs Access from A90 at Nigg Way and 2x local accesses from south. Bus gates to be introduced on Leggart Terrace and Nigg Way</p> <p>K90 West Portlethen – 1,626 households - 537 jobs Access from A90 via grade separation of the Bourtreebush junction and 1x local access from north</p> <p>K73 Ury - 230 households 1 access from A957 Slug Road and 1 access from B979</p> <p>K122 Mains of Cowie - 200 households 1 access from B979 and 1 from Golf Course Road</p> <p>Includes Structure Plan allocations in all other locations Includes committed Structure Plan infrastructure</p>																		
	Transport Test																		
Background Information																			
Geographic Context:	<p>Banchory Leggart – the site is located to the south of Aberdeen and is bound on the north by the B9077 and River Dee, east by the Aberdeenshire Local Authority boundary and the A90(T), and south by the route of the proposed AWPR.</p> <p>West Portlethen – the site is located to the west of Portlethen and is bound on the north by the Badentoy Industrial Estate. The site is bound on the east by Portlethen and the A90(T) routes through the eastern edge of the site.</p> <p>Ury – the site is located to the north of Stonehaven and is bound on the east by the B979 and the south by the A90(T).</p> <p>Mains of Cowie – the site is bound to the west by the B979 and the south by Golf Course Road which currently facilitates access into Stonehaven from the southbound A90(T).</p> <p>The sites are currently rural in nature with the larger sites encompassing residential hamlets and farmsteads.</p> <p>The 2009 Scottish Index of Multiple Deprivation (SIMD) confirms the SIMD Rank and Geographic Access Domain Rank for the sites:</p>																		
Social Context:	<table> <tr> <td>Site</td> <td>SIMD Rank</td> <td>Geographic Access Domain (GAD) Rank</td> </tr> <tr> <td>K121 Banchory Leggart</td> <td>4689</td> <td>527</td> </tr> <tr> <td>K90 West Portlethen</td> <td>6210</td> <td>447</td> </tr> <tr> <td>K73 Ury</td> <td>5940</td> <td>257</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>5940</td> <td>257</td> </tr> <tr> <td>Maximum Rank for Scotland</td> <td>6505</td> <td>6505</td> </tr> </table> <p>The above summary confirms that the sites are all in the top 25% overall least deprived areas in Scotland (SIMD Rank). The sites are in rural areas and are within the top 10% most deprived areas in terms of access to facilities (GAD Rank), in Scotland.</p>	Site	SIMD Rank	Geographic Access Domain (GAD) Rank	K121 Banchory Leggart	4689	527	K90 West Portlethen	6210	447	K73 Ury	5940	257	K122 Mains of Cowie	5940	257	Maximum Rank for Scotland	6505	6505
Site	SIMD Rank	Geographic Access Domain (GAD) Rank																	
K121 Banchory Leggart	4689	527																	
K90 West Portlethen	6210	447																	
K73 Ury	5940	257																	
K122 Mains of Cowie	5940	257																	
Maximum Rank for Scotland	6505	6505																	

<p>Economic Context: (2006 Data obtained from www.aberdeenshire.gov.uk/statistics)</p>	<p>Portlethen is the nearest Aberdeenshire town to the Banchory Leggart and Schoolhill sites. The town has a population of 6,632 and was developed as a new town in the 1970s to accommodate the demand for new housing in Aberdeen which was generated by the oil and gas boom. The majority (64.2%) of residents aged 16–74 work in Aberdeen City. The Ury and Mains of Cowie sites are located on the edge of Stonehaven. Stonehaven has a population of 10,614 and was originally developed round the town's harbour in the 16th century. The greatest proportion (50.3%) of residents aged 16–74 work in Aberdeenshire with 46.3% working in Aberdeen City.</p>																		
<p>Cumulative Transport Impacts</p>	<p>Key indicators which pertain to the change in traffic flows and hourly rail patronage & utilisation have been extracted from ASAM4. The change between 2007 and 2023 with the addition of development generated trips is summarised as follows:</p> <table border="1" data-bbox="475 593 694 1700"> <thead> <tr> <th>Indicator</th> <th>Location</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>Daily traffic flows Change 2007-2023 ¹</td> <td>A90(T) Bridge of Dee Approach</td> <td>0%</td> </tr> <tr> <td>AM Peak hour traffic flows Change 2007-2023 ²</td> <td>A90(T) South of Charleston</td> <td>6%</td> </tr> <tr> <td>Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³</td> <td>A90(T) Bridge of Dee Approach</td> <td>-4%</td> </tr> <tr> <td></td> <td>A90(T) South of Charleston</td> <td>-5%</td> </tr> <tr> <td></td> <td>Northbound rail travel north of Portlethen</td> <td>17%</td> </tr> </tbody> </table>	Indicator	Location	Change	Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	0%	AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	6%	Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-4%		A90(T) South of Charleston	-5%		Northbound rail travel north of Portlethen	17%
Indicator	Location	Change																	
Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	0%																	
AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	6%																	
Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-4%																	
	A90(T) South of Charleston	-5%																	
	Northbound rail travel north of Portlethen	17%																	
<p>Planning Objectives</p>																			
<p>Objective:</p>	<p>Performance against planning objective:</p>																		
<ul style="list-style-type: none"> Objective 1 – Make the most efficient use of the transport network <ul style="list-style-type: none"> – by movement of people and goods using existing and committed networks; locally, across boundaries, and strategically 	<p>Journey time and queue length data from microsimulation modelling indicators for the A90(T) northbound between Charleston and Bridge of Dee are summarised as follows:</p> <table border="1" data-bbox="1029 884 1141 1624"> <thead> <tr> <th></th> <th>Journey Time ⁴</th> <th>Queue Length ⁵</th> </tr> </thead> <tbody> <tr> <td>2007 Base</td> <td>15.7mins</td> <td>4,100m</td> </tr> <tr> <td>2023</td> <td>21.8mins</td> <td>6,700m</td> </tr> </tbody> </table> <p>Key issue to address: In the test queuing from Bridge of Dee to the Banchory Leggart Access junction causes queues backing up into the site in the AM peak.</p>		Journey Time ⁴	Queue Length ⁵	2007 Base	15.7mins	4,100m	2023	21.8mins	6,700m									
	Journey Time ⁴	Queue Length ⁵																	
2007 Base	15.7mins	4,100m																	
2023	21.8mins	6,700m																	

- Objective 2 – **Reducing the need for people to travel** – in terms of communities to operate locally for some journeys, by reducing distance to other facilities
- Objective 3 – **Making sure that walking and cycling are attractive choices** – by taking cognisance where sites are accessible to facilities within an active travel range and that any natural or manmade barriers to walking or cycling movement are considered

ASAM4 has been used to predict the overall increase in vehicle kilometres which is generated by the land use scenario in 2023 when compared to 2007:

	Kilometres per year ⁶
2007 Base	3,819million
2023	999million
Increase (2007-2023)	26%

Site Accessibility Indicators

Existing Employment Sites

Employment population, provided by 2001 Census data, within the following distances of the sites:
 Convenient walking distance (1.6km) – 1,993 employees
 Convenient cycling distance (5.0km) – 51,237 employees

Existing + Potential Future Employment Sites

Convenient walking distance (1.6km) – 3,369 employees
 Convenient cycling distance (5.0km) – 52,613 employees

Proposed Employment Sites

	Future On-site Employment	North Portlethen (K136)	Marywell (K45 & K135)	Stonehaven (K36 & K67)
Banchory Leggart	√√	X√	X√	XX
West Portlethen	√√	X√	X√	XX
Ury	None	XX	XX	√√
Mains of Cowie	None	XX	XX	X√

Key:

- XX Not accessible on foot or by cycle
 - X√ Not accessible on foot but accessible by cycle
 - √√ Potentially accessible on foot and by cycle
- Note: Distance measured from centre of site

Existing and Proposed Education Amenities

	Existing Primary School	Proposed Primary School	Existing Secondary School	Proposed Secondary School
Banchory Leggart	X√	√√	X√	X√*
West Portlethen	X√	√√	X√	N/A
Ury	X√	√√	√√	N/A
Mains of Cowie	√√	√√	√√	N/A

* Note: proposed secondary school assumed to be located at Loirston Loch

Assessment of physical barriers to active travel

Base/Issue:

Consideration:

River Dee presents a barrier to movement to the north of the Banchory Leggart site	Provision of a foot/cycle bridge to provide connection to the existing pedestrian network located to the north
A90(T) presents a barrier to movement to the east of the Banchory Leggart site	Introduction of pedestrian crossing facilities in association with reduced speed limit on A90
Limited pedestrian/cycle network in vicinity of Banchory Leggart site	Provision of connection between site and existing transport networks
A90(T) separates the majority of the West Portlethen site from Portlethen	Provision of pedestrian/cycle facilities as part of the grade separation of the Bourtreebush junction
Limited pedestrian network in vicinity of West Portlethen site	Provision of connection between site and existing transport networks
Glen Ury presents a barrier to movement to the west of the Ury site	Provide foot/cycle crossing of the river as part of a vehicular bridge over Glen Ury
The site at Ury is located on an area of land which is over 45m higher than the town centre	Provide adequate alternatives to walking and cycling i.e. public transport links

- Objective 4 – Making sure that public transport is an attractive choice – by making best locational use of existing public transport networks and identifying where additional measures can be effectively provided

Existing Public Transport Provision

Peak Hour Rail Travel	Nearest Rail Station	Banchory Leggart Portlethen	West Portlethen Portlethen	Weighted Average Overall Journey Time	Ury Stonehaven	For Information Only Mains of Cowie Stonehaven
	Distance to Rail Station ⁷	6km	4km	31mins	3km	2km
	Travel Time to Aberdeen ⁸	31 – 33mins	28 – 31mins	31mins	36-40mins	33-37mins
	Rail Frequency ⁹	2 services	2 services	42mins	4 services	4 services
Peak Hour Bus Travel	Travel Time to Aberdeen ¹⁰	40mins	55mins	42mins	60mins	55mins
Peak Hour Car Travel	Travel Time to Aberdeen ¹¹	20mins	26mins	21mins	37mins	39mins
Peak Hour Bus Travel	Travel Time to Westhill ¹²	55mins	75mins	59mins	70mins	68mins
Peak Hour Car Travel	Travel Time to Westhill ¹²	35mins	45mins	38mins	53mins	54mins

Bus Measures

Base/Issue

Banchory Leggart site has a poor level of existing service provision due to its rural location

West Portlethen site has a poor level of existing service provision due to its rural location however frequent services route along the A90(T) through the east of the site providing access to the centre of Aberdeen

Services 107, 117 and X7 currently connect the Ury site with Aberdeen. Current A90/B979 interchange arrangement does not facilitate the services to route past the site when returning from Aberdeen

Additional Measures

Introduce extended or diverted service – potential to extend existing Kincorth area service (No. 17)

Introduce a new 30 minute frequency circular bus service to provide connection between the Banchory Leggart and West Portlethen sites and Portlethen with its associated amenities

Stop services at site in association with junction alterations introduced as part of the AWRP Fastlink construction. Divert Stonehaven town service (No. 108) through site using future A957-B979 link road

	<p>Mains of Cowie site served by bus services which provide connection to the centre of Aberdeen in addition to the centre of Stonehaven and the town's rail station proposed</p> <p>Current level of service provision expected to be adequate to serve a site of the scale and location proposed</p> <p>Proposed Park & Ride at Schoolhill Potential to use Proposed Park & Ride Site</p> <p>K121 Banchory Leggart Minor – site located to north of facility with commuters required to travel away from their final destination to access the park & ride</p> <p>K90 West Portlethen Park & Ride located approximately 4km to the north of the site and is likely to provide an attractive and convenient facility for Aberdeen commuters</p> <p>K73 Ury Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K122 Mains of Cowie Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>Proposed High Occupancy Vehicle (HOV) lane A90(T) Northbound</p> <table border="1"> <thead> <tr> <th>Site</th> <th>Design Issues</th> <th>Cumulative Impact</th> </tr> </thead> <tbody> <tr> <td>Banchory Leggart</td> <td>Major negative impact on operation and design of HOV lane</td> <td>HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)</td> </tr> <tr> <td>West Portlethen</td> <td>No impact</td> <td></td> </tr> <tr> <td>Ury/Mains of Cowie</td> <td>No impact</td> <td></td> </tr> </tbody> </table>	Site	Design Issues	Cumulative Impact	Banchory Leggart	Major negative impact on operation and design of HOV lane	HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)	West Portlethen	No impact		Ury/Mains of Cowie	No impact	
Site	Design Issues	Cumulative Impact											
Banchory Leggart	Major negative impact on operation and design of HOV lane	HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)											
West Portlethen	No impact												
Ury/Mains of Cowie	No impact												
Implementability Appraisal													
Key to Appraisal Score	<p>The Implementability Appraisal has been undertaken using the following seven point scale of assessment which is set out in STAG:</p> <ul style="list-style-type: none"> +3 – Major benefit +2 – Moderate benefit +1 – Minor benefit 0 – No benefit or impact -1 – Small negative impact -2 – Moderate negative impact -3 – Major negative impact <p>The following section appraises the Banchory Leggart and West Portlethen sites in detail.</p> <p>Appraisal Score: -1 to +1</p>												
Technical:													

	<p>The Banchory Leggart site can currently only be accessed from the local road network with no trunk road junctions located in the vicinity of the site. It is proposed to construct a new at-grade junction on the A90(T) at Nigg Way to provide access into the Banchory Leggart site. A bus gate is to be installed on Nigg Way in association with the development access construction. Leggart Terrace is also to be restricted to the use of bus services by the installation of a bus gate with general traffic diverted through the development access junction. The A90(T) is being de-trunked in association with the AWPR in the vicinity of the site.</p> <p>The West Portlethen site can be accessed via the A90(T) Badentoy Interchange, however, it is expected that the Bourtreebush junction will require to be grade separated to provide an appropriate form of access into the site. Its construction is likely to require significant engineering work which has the potential to generate delay for existing road users during construction.</p> <p>The impact of the existing A90(T) and proposed AWPR as barriers to movement for residents of the Banchory Leggart site, can be minimised by the introduction of an at-grade crossing on the A90(T) in conjunction with a reduced speed limit. The form of the development access would be required to take cognisance of a requirement for future bus services to route through it. Pedestrian and cycle facilities should be incorporated into the improved Bourtreebush junction to minimise the impact of the A90(T) as a barrier to movement between the site and Portlethen.</p> <p>New or extended bus services are expected to be relatively straightforward to introduce for all sites.</p>
Operational:	<p>Appraisal Score: +1</p> <p>The scale of the developments is likely to enable any new or extended bus services to be self-financing following the first 3 - 5 years being underwritten by developers. The location of the Banchory Leggart site provides opportunity to extend the existing Aberdeen City Centre – Kincorth bus service (Service No. 17) into the site via the proposed development access. It is suggested that the extension could be implemented without the need to introduce additional buses by reducing the service frequency from its current level to a 20min frequency</p>
Financial:	<p>Appraisal Score: 0</p> <p>It is expected that the majority of the transport infrastructure costs which will be associated with the development of the sites will be borne by developers.</p> <p>The scale of both development sites is expected to support the extension of existing and introduction of new bus services without the need for financial support following initial funding by developers. The West Portlethen site is expected to support the operation of the nearby Park and Ride facility which is proposed to be constructed adjacent to the A90(T) Findon Interchange.</p>
Public:	<p>Appraisal Score: -1 to +1</p> <p>The development transport proposals could generate objections by introducing additional transport movements in rural areas. The Banchory Leggart site will require construction of a minimum of one access on the A90(T) and the West Portlethen site is to be supported by grade separation of the existing Bourtreebush junction. The introduction of new junctions on the A90(T) is likely to generate an increased level of disruption to existing road users both during construction and terms of its operation.</p> <p>Improvements to transport infrastructure and bus service provision are likely to be welcomed by existing Portlethen residents and employees.</p>
General	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the</p>

	<p>Implementability Appraisal can be summarised as follows:</p> <table border="1" data-bbox="225 600 352 1301"> <thead> <tr> <th colspan="4">Implementability Appraisal</th> </tr> <tr> <th>Site</th> <th>Technical</th> <th>Operational</th> <th>Financial</th> <th>Public</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>+1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is not considered that either of the site's transport interventions will generate other than a small negative impact.</p>	Implementability Appraisal				Site	Technical	Operational	Financial	Public	K73 Ury	-1	+1	0	0	K122 Mains of Cowie	+1	+1	0	0
Implementability Appraisal																				
Site	Technical	Operational	Financial	Public																
K73 Ury	-1	+1	0	0																
K122 Mains of Cowie	+1	+1	0	0																
STAG Criteria																				
Criterion	Assessment Summary																			
<p>Environment:</p>	<p>Supporting Information</p> <p>Appraisal Score: -2 to -1</p> <p>The area to the south of the River Dee which forms part of the Banchory Leggart site is classified as an Aberdeenshire Area of Landscape Significance. A large area of the site which is located in the vicinity of Banchory Devenick is shown to be an Aberdeenshire SMR site. This has the potential to influence the form and location of any northern development accesses including potential provision of a footbridge over the River Dee to provide connection to the Garthdee and Kaimhill areas of Aberdeenshire, although it will not preclude development due to its classification. There appear to be no significant environmental constraints to the east of the site which may have prevented access being taken from the A90(T). The site's rural location is relatively remote from existing properties and its development is unlikely to have a significant impact on a large number of residential receptors.</p> <p>There are a number of small Aberdeenshire SMR sites shown to be located within the West Portlethen site it is however considered that these will not have a significant impact on the location and form of development accesses from the east. There is a large Aberdeenshire SMR site located in the south of the West Portlethen site which may impact on the location or form of any development access provided from the local road network to the south of the site. The classification of the sites does not however preclude development.</p> <p>There are no environmental constraints shown to be located to the east of the site. A small constraint is shown to be located immediately to the east of the A90(T) adjacent to the Bourtreebush junction, however its classification does not preclude development. The majority of the site is located to the west of the A90(T) and it is considered that development of the West Portlethen site and associated access junctions is unlikely to have an impact on local receptors.</p> <p>Appraisal Score: -1 to +2</p> <p>The main point of access to the Banchory Leggart site will be provided from the east via a newly constructed junction on the A90(T) which is planned to be de-trunked following completion of the AWPR. The introduction of an additional junction has the potential to have an impact on the operation of the network and safety as an increase in traffic and traffic manoeuvres at more junctions would increase the likelihood of accidents. However, road infrastructure will be designed in accordance with standards to</p>																			
<p>Safety:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact – small negative impact</p>																			

	<p>scale</p> <p>Small negative impact – moderate benefit</p>	<p>ensure safe operation. The form of access junction will be designed to ensure that pedestrians will be able to safely cross the A90(T) minimising the impact of the trunk road as a barrier to movement.</p> <p>Development of the West Portlethen site is expected to have an impact on the operation of local transport networks in terms of additional traffic. The site will require grade separation of the existing A90(T) Bourtreebush junction which will provide a junction arrangement which is expected to be safer for all modes of travel.</p> <p>Development of the Banchory Leggart and West Portlethen sites will include a network of pedestrian and cycle facilities which is likely to provide an improvement over the existing situation which requires pedestrians and cyclists to use the rural road network to travel in the vicinity of the areas.</p>
<p>Economy:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Small negative impact</p>	<p>Appraisal Score: -1</p> <p>The majority of trips which are predicted to be generated by the Banchory Leggart and West Portlethen sites are expected to travel north to employment opportunities which are located in and around Aberdeen. While this will increase the magnitude of traffic travelling on the A90(T) in the vicinity of the site, it is expected that the AWPR will remove a significant proportion of traffic from the road which is to be de-trunked.</p>
<p>Integration:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Minor benefit – moderate benefit</p>	<p>Appraisal Score: +1 to +2</p> <p>It is expected that development of the Banchory Leggart site will assist with supporting the provision of a new footbridge crossing of the River Dee to provide linkage to the Garthdee and Kaimhill areas of Aberdeen. In addition the development will support the provision of a new Portlethen bus service which will link the site to employment, education and retail facilities provided in the town. It is also considered that the Banchory Leggart development will require an extension of Service No. 17 to integrate with the local area of Kincorth.</p> <p>Development of the West Portlethen site will also assist in supporting the introduction of a new town circular bus service serving Portlethen. Grade separation of the Bourtreebush junction will ensure that the West Portlethen transport network will be connected to the existing Portlethen transport network which will assist in the implementation of a Portlethen bus service.</p> <p>It is expected that any improvements to local bus services can be accommodated without any detriment to existing travellers with the introduction of a new Portlethen bus service expected to benefit existing residents of the town. Journey times will be unaffected to the centre of Aberdeen by extending Service No. 17. Extending the service will however, have an impact on the service frequency without the introduction of additional buses to serve the route. It is anticipated that a 20 minute service frequency should be achievable without the introduction of additional buses to serve the route.</p>

<p>Accessibility and Social Inclusion:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate benefit</p>	<p>Appraisal Score: + 2</p> <p>It is proposed to introduce a new bus service for Portlethen as part of this scenario with the service connecting the Banchory Leggart and West Portlethen sites with facilities and amenities provided in Portlethen including the rail station. The new bus service is expected to improve the accessibility of the area for existing Portlethen residents and provide frequent connection between the town and the Schoolhill park and ride facility.</p> <p>Development of the sites will include a range of facilities and amenities including employment opportunities and education, retail and community facilities which will benefit both future and existing residents living in the vicinity of the sites. The extension of Service No. 17 will provide opportunity for existing Portlethen residents to access facilities and amenities which are to be provided as part of the Banchory Leggart development.</p>																		
<p>Complementary Sites STAG Impacts</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact – Minor benefit</p>	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Appraisal against STAG Criteria can be summarised as follows:</p> <table border="1" data-bbox="603 103 861 1480"> <thead> <tr> <th>Site</th> <th>Environment</th> <th>Safety</th> <th>Economy</th> <th>Integration</th> <th>Accessibility & Social Inclusion</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-2</td> <td>0</td> <td>0</td> <td>+1</td> <td>+1</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is considered that the Mains of Cowie site will not generate a significant impact when appraised against STAG criteria. The Ury site has been judged to generate a moderate negative environmental impact as the majority of the site and access option locations are shown to be listed within Aberdeenshire's SMR. The category of site does not preclude development within it.</p>	Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion	K73 Ury	-2	0	0	+1	+1	K122 Mains of Cowie	0	0	0	0	0
Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion															
K73 Ury	-2	0	0	+1	+1															
K122 Mains of Cowie	0	0	0	0	0															

Note: STAG Criteria Definitions obtained from <http://www.transportscotland.gov.uk/stag/td/Part1/5.4>

References:

- 1 - Change in Daily Traffic Flow on A90(T) (Table 7.2 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 2 - Time lost due to congestion (% change 2007 - 2023) comparison with road network operation during an average hour in the AM and PM Peak periods (Table 5.5 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 3 - Change in Rail Patronage & Utilisation North of Portlethen (Hourly Passengers) (Table 7.7 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 4 - Corridor S-Paramics assessment, A90 northbound AM peak period (06:30 - 09:30) between Charlestown and Bridge of Dee with allowance for re-routing via Findon (see SIAS Report Ref 72376) - Maximum Journey Time shown
- 5 - Maximum cordoned queue in the AM peak period (06:30 - 09:30) predicted by the S-Paramics corridor assessment with allowance for re-routing via Findon (see SIAS Report Ref TPATCDPM/72492)
- 6 - Change in Annual Vehicle Kilometres: 2007 - 2023 (Millions) (Table 5.3 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 7 - Distance to nearest rail station estimated using <http://www.gmap-pedometer.com/> and measured from the site boundary
- 8 - Rail service frequency obtained (30/10/09) from <http://www.nationalrail.co.uk/>

- 9 - Journey time calculations based on total travel from centre of sites to Aberdeen City Centre (including car access to nearest rail station), rail timetable information obtained (30/10/09) from <http://www.nationalrail.co.uk/> and car travel time estimated using <http://www.transportdirect.info/>
- 10 - Total average bus service journey time estimated using Accession GIS software + 5 minute wait time
- 11 - Average car travel journey time data estimated using <http://www.transportdirect.info/> and assumes travel to City Centre with 5 minutes added for accessing car park
- 12 - Journey time calculations based on total travel from centre of sites to Westhill. Quickest journey time by car and public transport has been estimated using <http://www.transportdirect.info/>

DPM_TAG (STAG Part 1 type) Appraisal Summary Tables

Proposal Details																			
Study	Aberdeenshire Council Local Development Plan 2010 A90 South Comparative Appraisal of Major Sites																		
Proposal Name:	Land Use Scenario 2 – Transport Test 2																		
Proposal Description:	<table border="0"> <thead> <tr> <th>Land Use Scenario</th> <th>Transport Test</th> </tr> </thead> <tbody> <tr> <td>K121 Banchory Leggart – 2,544 households - 840 jobs</td> <td>2 x accesses from A90 at Nigg Way and Redcraigs and 2 x local accesses from south. Bus gates to be introduced on Leggart Terrace and Nigg Way</td> </tr> <tr> <td>K90 West Portlethen – 1,626 households - 537 jobs</td> <td>Access from A90 via grade separation of the Bourtreebush junction and 1 x local access from north</td> </tr> <tr> <td>K73 Ury - 230 households</td> <td>1 access from A957 Slug Road and 1 access from B979</td> </tr> <tr> <td>K122 Mains of Cowie - 200 households</td> <td>1 access from B979 and 1 from Golf Course Road</td> </tr> <tr> <td>Includes Structure Plan allocations in all other locations</td> <td>Includes committed Structure Plan infrastructure</td> </tr> </tbody> </table>	Land Use Scenario	Transport Test	K121 Banchory Leggart – 2,544 households - 840 jobs	2 x accesses from A90 at Nigg Way and Redcraigs and 2 x local accesses from south. Bus gates to be introduced on Leggart Terrace and Nigg Way	K90 West Portlethen – 1,626 households - 537 jobs	Access from A90 via grade separation of the Bourtreebush junction and 1 x local access from north	K73 Ury - 230 households	1 access from A957 Slug Road and 1 access from B979	K122 Mains of Cowie - 200 households	1 access from B979 and 1 from Golf Course Road	Includes Structure Plan allocations in all other locations	Includes committed Structure Plan infrastructure						
Land Use Scenario	Transport Test																		
K121 Banchory Leggart – 2,544 households - 840 jobs	2 x accesses from A90 at Nigg Way and Redcraigs and 2 x local accesses from south. Bus gates to be introduced on Leggart Terrace and Nigg Way																		
K90 West Portlethen – 1,626 households - 537 jobs	Access from A90 via grade separation of the Bourtreebush junction and 1 x local access from north																		
K73 Ury - 230 households	1 access from A957 Slug Road and 1 access from B979																		
K122 Mains of Cowie - 200 households	1 access from B979 and 1 from Golf Course Road																		
Includes Structure Plan allocations in all other locations	Includes committed Structure Plan infrastructure																		
Background Information																			
Geographic Context:	<p>Banchory Leggart – the site is located to the south of Aberdeen and is bound on the north by the B9077 and River Dee, east by the Aberdeenshire Local Authority boundary and the A90(T), and south by the route of the proposed AWPR.</p> <p>West Portlethen – the site is located to the west of Portlethen and is bound on the north by the Badentoy Industrial Estate. The site is bound on the east by Portlethen and the A90(T) routes through the eastern edge of the site.</p> <p>Ury – the site is located to the north of Stonehaven and is bound on the east by the B979 and the south by the A90(T).</p> <p>Mains of Cowie – the site is bound to the west by the B979 and the south by Golf Course Road which currently facilitates access into Stonehaven from the southbound A90(T).</p> <p>The sites are currently rural in nature with the larger sites encompassing residential hamlets and farmsteads.</p> <p>The 2009 Scottish Index of Multiple Deprivation (SIMD) confirms the SIMD Rank and Geographic Access Domain Rank for the sites:</p> <table border="0"> <thead> <tr> <th>Site</th> <th>SIMD Rank</th> <th>Geographic Access Domain (GAD) Rank</th> </tr> </thead> <tbody> <tr> <td>K121 Banchory Leggart</td> <td>4689</td> <td>527</td> </tr> <tr> <td>K90 West Portlethen</td> <td>6210</td> <td>447</td> </tr> <tr> <td>K73 Ury</td> <td>5940</td> <td>257</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>5940</td> <td>257</td> </tr> <tr> <td>Maximum Rank for Scotland</td> <td>6505</td> <td>6505</td> </tr> </tbody> </table> <p>The above summary confirms that the sites are all in the top 25% overall least deprived areas in Scotland (SIMD Rank). The sites are in rural areas and are within the top 10% most deprived areas in terms of access to facilities (GAD Rank), in Scotland.</p>	Site	SIMD Rank	Geographic Access Domain (GAD) Rank	K121 Banchory Leggart	4689	527	K90 West Portlethen	6210	447	K73 Ury	5940	257	K122 Mains of Cowie	5940	257	Maximum Rank for Scotland	6505	6505
Site	SIMD Rank	Geographic Access Domain (GAD) Rank																	
K121 Banchory Leggart	4689	527																	
K90 West Portlethen	6210	447																	
K73 Ury	5940	257																	
K122 Mains of Cowie	5940	257																	
Maximum Rank for Scotland	6505	6505																	
Social Context:																			

<p>Economic Context: (2006 Data obtained from www.aberdeenshire.gov.uk/statistics)</p>	<p>Portlethen is the nearest Aberdeenshire town to the Banchory Leggart and Schoolhill sites. The town has a population of 6,632 and was developed as a new town in the 1970s to accommodate the demand for new housing in Aberdeen which was generated by the oil and gas boom. The majority (64.2%) of residents aged 16–74 work in Aberdeen City. The Ury and Mains of Cowie sites are located on the edge of Stonehaven. Stonehaven has a population of 10,614 and was originally developed round the town’s harbour in the 16th century. The greatest proportion (50.3%) of residents aged 16–74 work in Aberdeenshire with 46.3% working in Aberdeen City.</p> <p>Key indicators which pertain to the change in traffic flows and hourly rail patronage & utilisation have been extracted from ASAM4. The change between 2007 and 2023 with the addition of development generated trips is summarised below:</p>																		
<p>Cumulative Transport Impacts</p>	<table border="1"> <thead> <tr> <th>Indicator</th> <th>Location</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>Daily traffic flows Change 2007-2023 ¹</td> <td>A90(T) Bridge of Dee Approach</td> <td>0%</td> </tr> <tr> <td>AM Peak hour traffic flows Change 2007-2023 ²</td> <td>A90(T) South of Charleston</td> <td>6%</td> </tr> <tr> <td>Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³</td> <td>A90(T) Bridge of Dee Approach</td> <td>-5%</td> </tr> <tr> <td></td> <td>A90(T) South of Charleston</td> <td>-6%</td> </tr> <tr> <td></td> <td>Northbound rail travel north of Portlethen</td> <td>17%</td> </tr> </tbody> </table>	Indicator	Location	Change	Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	0%	AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	6%	Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-5%		A90(T) South of Charleston	-6%		Northbound rail travel north of Portlethen	17%
Indicator	Location	Change																	
Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	0%																	
AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	6%																	
Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-5%																	
	A90(T) South of Charleston	-6%																	
	Northbound rail travel north of Portlethen	17%																	
<p>Planning Objectives</p>																			
<p>Objective:</p>	<p>Performance against planning objective:</p>																		
<ul style="list-style-type: none"> Objective 1 – Make the most efficient use of the transport network <ul style="list-style-type: none"> – by movement of people and goods using existing and committed networks; locally, across boundaries, and strategically 	<p>Journey time and queue length data from microsimulation modelling indicators for the A90(T) northbound between Charleston and Bridge of Dee are summarised as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Journey Time ⁴</th> <th>Queue Length ⁵</th> </tr> </thead> <tbody> <tr> <td>2007 Base</td> <td>15.7mins</td> <td>4,100m</td> </tr> <tr> <td>2023</td> <td>21.4mins</td> <td>7,000m</td> </tr> </tbody> </table> <p>Key issue to address: In the test queuing from the Bridge of Dee to the Banchory Leggart Access junction causes queues backing up into the site in the AM peak. The secondary junction in this test provides a secondary means of access onto the A90(T) further from the source of congestion.</p>		Journey Time ⁴	Queue Length ⁵	2007 Base	15.7mins	4,100m	2023	21.4mins	7,000m									
	Journey Time ⁴	Queue Length ⁵																	
2007 Base	15.7mins	4,100m																	
2023	21.4mins	7,000m																	

- Objective 2 – Reducing the need for people to travel – in terms of communities to operate locally for some journeys, by reducing distance to other facilities
- Objective 3 – Making sure that walking and cycling are attractive choices – by taking cognisance where sites are accessible to facilities within an active travel range and that any natural or manmade barriers to walking or cycling movement are considered

ASAM4 has been used to predict the overall increase in vehicle kilometres which is generated by the land use scenario in 2023 when compared to 2007:

	Kilometres per year ⁶
2007 Base	3,819million
2023	1,000million
Increase (2007-2023)	26%

Site Accessibility Indicators

Existing Employment Sites

Employment population, provided by 2001 Census data, within the following distances of the sites:
 Convenient walking distance (1.6km) – 1,993 employees
 Convenient cycling distance (5.0km) – 51,237 employees

Existing + Potential Future Employment Sites

Convenient walking distance (1.6km) – 3,369 employees
 Convenient cycling distance (5.0km) – 52,613 employees

Proposed Employment Sites

	Future On-site Employment	North Portlethen (K136)	Marywell (K45 & K135)	Stonehaven (K36 & K67)
Banchory	√√	X√	X√	XX
Leggart				
West Portlethen	√√	X√	X√	XX
Ury	None	XX	XX	√√
Mains of Cowie	None	XX	XX	X√

Key:

- XX Not accessible on foot or by cycle
 X√ Not accessible on foot but accessible by cycle
 √√ Potentially accessible on foot and by cycle
 Note: Distance measured from centre of site

Existing and Proposed Education Amenities

	Existing Primary School	Proposed Primary School	Existing Secondary School	Proposed Secondary School
Banchory Leggart	X√	√√	X√	X√*
West Portlethen	X√	√√	X√	N/A
Ury	X√	√√	√√	N/A
Mains of Cowie	√√	√√	√√	N/A

* Note: proposed secondary school assumed to be located at Loirston Loch

Assessment of physical barriers to active travel**Base/Issue:**

Base/Issue:	Consideration:
River Dee presents a barrier to movement to the north of the Banchory Leggart site	Provision of a foot/cycle bridge to provide connection to the existing pedestrian network located to the north
A90(T) presents a barrier to movement to the east of the Banchory Leggart site	Introduction of pedestrian crossing facilities in association with reduced speed limit on A90
Limited pedestrian/cycle network in vicinity of Banchory Leggart site	Provision of connection between site and existing transport networks
A90(T) separates the majority of the West Portlethen site from Portlethen	Provision of pedestrian/cycle facilities as part of the grade separation of the Bourtreebush junction
Limited pedestrian network in vicinity of West Portlethen site	Provision of connection between site and existing transport networks
Glen Ury presents a barrier to movement to the west of the Ury site	Provide foot/cycle crossing of the river as part of a vehicular bridge over Glen Ury
The site at Ury is located on an area of land which is over 45m higher than the town centre	Provide adequate alternatives to walking and cycling i.e. public transport links

- Objective 4 – Making sure that public transport is an attractive choice – by making best locational use of existing public transport networks and identifying where additional measures can be effectively provided

Existing Public Transport Provision

Peak Hour Rail Travel	Nearest Rail Station	Banchory Leggart Portlethen	West Portlethen Portlethen	Weighted Average Overall Journey Time	Ury Stonehaven	For Information Only Mains of Cowie Stonehaven
	Distance to Rail Station ⁷	6km	4km	31mins	3km	2km
	Travel Time to Aberdeen ⁸	31 – 33mins	28 – 31mins	31mins	36-40mins	33-37mins
	Rail Frequency ⁹	2 services	2 services	42mins	4 services	4 services
Peak Hour Bus Travel	Travel Time to Aberdeen ¹⁰	40mins	55mins	42mins	60mins	55mins
Peak Hour Car Travel	Travel Time to Aberdeen ¹¹	20mins	26mins	21mins	37mins	39mins
Peak Hour Bus Travel	Travel Time to Westhill ¹²	55mins	75mins	59mins	70mins	68mins
Peak Hour Car Travel	Travel Time to Westhill ¹²	35mins	45mins	38mins	53mins	54mins

Bus Measures

Base/Issue

Banchory Leggart site has a poor level of existing service provision due to its rural location

Additional Measures

Introduce extended or diverted service – potential to extend existing Kincorth area service (No. 17)

West Portlethen site has a poor level of existing service provision due to its rural location however frequent services route along the A90(T) through the east of the site providing access to the centre of Aberdeen

Introduce a new 30 minute frequency circular bus service to provide connection between the Banchory Leggart and West Portlethen sites and Portlethen with its associated amenities

	<p>Services 107, 117 and X7 currently connect the Ury site with Aberdeen. Current A90/B979 interchange arrangement does not facilitate the services to route past the site when returning from Aberdeen</p> <p>Mains of Cowie site served by bus services which provide connection to the centre of Aberdeen in addition to the centre of Stonehaven and the town's rail station</p> <p>Proposed Park & Ride at Schoolhill</p> <p>Potential to use Proposed Park & Ride</p> <p>K121 Banchory Leggart Minor – site located to north of facility with commuters required to travel away from their final destination to access the park & ride</p> <p>K90 West Portlethen Park & Ride located approximately 4km to the north of the site and is likely to provide an attractive and convenient facility for Aberdeen commuters</p> <p>K73 Ury Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K122 Mains of Cowie Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>Proposed High Occupancy Vehicle (HOV) lane A90(T) Northbound</p> <p>Site Design Issues Cumulative Impact</p> <p>Banchory Leggart Major negative impact on operation and design of HOV lane</p> <p>West Portlethen No impact</p> <p>Ury/Mains of Cowie No impact</p> <p>HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)</p>
Implementability Appraisal	
<p>Key to Appraisal Score</p>	<p>The Implementability Appraisal has been undertaken using the following seven point scale of assessment which is set out in STAG:</p> <p>+3 – Major benefit</p> <p>+2 – Moderate benefit</p> <p>+1 – Minor benefit</p> <p>0 – No benefit or impact</p> <p>-1 – Small negative impact</p>

	<p>-2 - Moderate negative impact -3 - Major negative impact The following section appraises the Banchory Leggart and West Portlethen sites in detail.</p>
<p>Technical:</p>	<p>Appraisal Score: -2 to +1 The Banchory Leggart site can currently only be accessed from the local road network with no trunk road junctions located in the vicinity of the site. It is proposed to construct two new at-grade junctions on the A90(T) at Nigg Way and Redcraigs to provide access into the Banchory Leggart site. A bus gate is to be installed on Nigg Way in association with the development access construction. Leggart Terrace is also to be restricted to the use of bus services by the installation of a bus gate with general traffic diverted through the development access junction. The A90(T) is being de-trunked in association with the AWPR in the vicinity of the site. The proximity of the southern of the two A90(T) development accesses in relation to the proposed AWPR interchange at Charleston, could have an impact on the form and location of the southern access. The West Portlethen site can be accessed via the A90(T) Badentoy Interchange however, it is expected that the Bourtreebush junction will require to be grade separated to provide an appropriate form of access into the site. Its construction is likely to require significant engineering work which has the potential to generate delay for existing road users during construction. The impact of the existing A90(T) and proposed AWPR as barriers to movement for residents of the Banchory Leggart site, can be minimised by the introduction of an at-grade crossing on the A90(T) in conjunction with a reduced speed limit. The form of the development access would be required to take cognisance of a requirement for future bus services to route through it. Pedestrian and cycle facilities should be incorporated into the improved Bourtreebush junction to minimise the impact of the A90(T) as a barrier to movement between the site and Portlethen. New or extended bus services are expected to be relatively straightforward to introduce for all sites.</p>
<p>Operational:</p>	<p>Appraisal Score: +1 The scale of the developments is likely to enable any new or extended bus services to be self-financing following the first 3 - 5 years being underwritten by developers. The location of the Banchory Leggart site provides opportunity to extend the existing Aberdeen City Centre – Kincorth bus service (Service No. 17) into the site via the proposed development access. It is suggested that the extension could be implemented without the need to introduce additional buses by reducing the service frequency from its current level to a 20 minute frequency</p>
<p>Financial:</p>	<p>Appraisal Score: 0 It is expected that the majority of the transport infrastructure costs which will be associated with the development of the sites will be borne by developers. The scale of both development sites is expected to support the extension of existing and introduction of new bus services without the need for financial support following initial funding by developers. The West Portlethen site is expected to support the operation of the nearby Park and Ride facility which is proposed to be constructed adjacent to the A90(T) Findon Interchange.</p>
<p>Public:</p>	<p>Appraisal Score: -2 to +1 The development transport proposals could generate objections by introducing additional transport movements in rural areas. The Banchory Leggart site will require construction of two new access junctions on the A90(T) and the</p>

	<p>West Portlethen site is to be supported by grade separation of the existing Bourtreebush junction and the). The introduction of new junctions on the A90(T) is likely to generate an increased level of disruption to existing road users both during construction and terms of its operation. Improvements to transport infrastructure and bus service provision are likely to be welcomed by existing Portlethen residents and employees.</p>																			
<p>General</p>	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Implementability Appraisal can be summarised as follows:</p> <table border="1" data-bbox="539 600 660 1608"> <thead> <tr> <th colspan="4">Implementability Appraisal</th> </tr> <tr> <th>Site</th> <th>Technical</th> <th>Operational</th> <th>Financial</th> <th>Public</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>+1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is not considered that either of the site's transport interventions will generate other than a small negative impact.</p>	Implementability Appraisal				Site	Technical	Operational	Financial	Public	K73 Ury	-1	+1	0	0	K122 Mains of Cowie	+1	+1	0	0
Implementability Appraisal																				
Site	Technical	Operational	Financial	Public																
K73 Ury	-1	+1	0	0																
K122 Mains of Cowie	+1	+1	0	0																
<p>STAG Criteria</p>																				
<p>Criterion</p>	<p>Assessment Summary</p>																			
<p>Environment:</p>	<p>Supporting Information</p> <p>Appraisal Score: -2 to -1</p> <p>The area to the south of the River Dee which forms part of the Banchory Leggart site is classified as an Aberdeenshire Area of Landscape Significance. A large area of the site which is located in the vicinity of Banchory Devenick is shown to be an Aberdeenshire SMR site. This has the potential to influence the form and location of any northern development accesses including potential provision of a footbridge over the River Dee to provide connection to the Garthdee and Kaimhill areas of Aberdeen, although it will not preclude development due to its classification. There appear to be no significant environmental constraints to the east of the site which may have prevented access being taken from the A90(T). The site's rural location is relatively remote from existing properties and its development is unlikely to have a significant impact on a large number of residential receptors.</p> <p>There are a number of small Aberdeenshire SMR sites shown to be located within the West Portlethen site it is however considered that these will not have a significant impact on the location and form of development accesses from the east. There is a large Aberdeenshire SMR site located in the south of the West Portlethen site which may impact on the location or form of any development access provided from the local road network to the south of the site. The classification of the sites does not however preclude development.</p> <p>There are no environmental constraints shown to be located to the east of the site. A small constraint is</p>																			

		<p>shown to be located immediately to the east of the A90(T) adjacent to the Bourtreebush junction, however its classification does not preclude development. The majority of the site is located to the west of the A90(T) and it is considered that development of the West Portlethen site and associated access junctions is unlikely to have an impact on local receptors.</p>
<p>Safety:</p>	<p>Description of Impacts Assessment using 7 point scale Moderate negative impact – moderate benefit</p>	<p>Appraisal Score: -2 to +2 The main point of access to the Banchory Leggart site will be provided from the east via a newly constructed junction on the A90(T) which is planned to be de-trunked following completion of the AWPR. The introduction of an additional junction has the potential to have an impact on the operation of the network and safety as an increase in traffic and traffic manoeuvres at more junctions would increase the likelihood of accidents. Road infrastructure will be designed in accordance with standards to ensure safe operation, however the proximity of the southern of the two development accesses from the A90(T)/AWPR Charleston Interchange could have an impact on the safe operation of the A90 in the vicinity of the Banchory Leggart site. The form of access junction will be designed to ensure that pedestrians will be able to safely cross the A90(T) minimising the impact of the trunk road as a barrier to movement. Development of the West Portlethen site is expected to have an impact on the operation of local transport networks in terms of additional traffic. The site will require grade separation of the existing A90(T) Bourtreebush junction which will provide a junction arrangement which is expected to be safer for all modes of travel. Development of the Banchory Leggart and West Portlethen sites will include a network of pedestrian and cycle facilities which is likely to provide an improvement over the existing situation which requires pedestrians and cyclists to use the rural road network to travel in the vicinity of the areas.</p>
<p>Economy:</p>	<p>Description of Impacts Assessment using 7 point scale Small negative impact</p>	<p>Appraisal Score: -1 The majority of trips which are predicted to be generated by the Banchory Leggart and West Portlethen sites are expected to travel north to employment opportunities which are located in and around Aberdeen. While this will increase the magnitude of traffic travelling on the A90(T) in the vicinity of the site, it is expected that the AWPR will remove a significant proportion of traffic from the road which is to be de-trunked.</p>
<p>Integration:</p>	<p>Description of Impacts Assessment</p>	<p>Appraisal Score: +1 to +2 It is expected that development of the Banchory Leggart site will assist with supporting the provision of a new footbridge crossing of the River Dee to provide linkage to the Garthdee and Kaimhill areas of Aberdeen. In addition the development will support the provision of a new Portlethen bus service which will link the site to employment, education and retail facilities provided in the town. It is also considered</p>

	<p>using 7 point scale</p> <p>Minor benefit – moderate benefit</p>	<p>that the Banchory Leggart development will require an extension of Service No. 17 to integrate with the local area of Kincorth.</p> <p>Development of the West Portlethen site will also assist in supporting the introduction of a new town circular bus service serving Portlethen. Grade separation of the Bourtreebush junction will ensure that the West Portlethen transport network will be connected to the existing Portlethen transport network which will assist in the implementation of a Portlethen bus service.</p> <p>It is expected that any improvements to local bus services can be accommodated without any detriment to existing travellers with the introduction of a new Portlethen bus service expected to benefit existing residents of the town. Journey times will be unaffected to the centre of Aberdeen by extending Service No. 17. Extending the service will however, have an impact on the service frequency without the introduction of additional buses to serve the route. It is anticipated that a 20 minute service frequency should be achievable without the introduction of additional buses to serve the route.</p>																						
<p>Accessibility and Social Inclusion:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate benefit</p>	<p>Appraisal Score: +2</p> <p>It is proposed to introduce a new bus service for Portlethen as part of this scenario with the service connecting the Banchory Leggart and West Portlethen sites with facilities and amenities provided in Portlethen including the rail station. The new bus service is expected to improve the accessibility of the area for existing Portlethen residents and provide frequent connection between the town and the Schoolhill park and ride facility.</p> <p>Development of the sites will include a range of facilities and amenities including employment opportunities and education, retail and community facilities which will benefit both future and existing residents living in the vicinity of the sites. The extension of Service No. 17 will provide opportunity for existing Portlethen residents to access facilities and amenities which are to be provided as part of the Banchory Leggart development.</p>																						
<p>Complementary Sites STAG Impacts</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact – Minor benefit</p>	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Appraisal against STAG Criteria can be summarised as follows:</p> <table border="1" data-bbox="973 537 1165 1456"> <thead> <tr> <th rowspan="2">Site</th> <th colspan="4">STAG Criteria</th> <th rowspan="2">Accessibility & Social Inclusion</th> </tr> <tr> <th>Environment</th> <th>Safety</th> <th>Economy</th> <th>Integration</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-2</td> <td>0</td> <td>0</td> <td>+1</td> <td>+1</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is considered that the Mains of Cowie site will not generate a significant impact when appraised against STAG criteria. The Ury site has been judged to generate a moderate negative environmental impact as the majority of the site and access option locations are shown to be listed within Aberdeenshire's SMR. The category of site does not preclude development within it.</p>	Site	STAG Criteria				Accessibility & Social Inclusion	Environment	Safety	Economy	Integration	K73 Ury	-2	0	0	+1	+1	K122 Mains of Cowie	0	0	0	0	0
Site	STAG Criteria				Accessibility & Social Inclusion																			
	Environment	Safety	Economy	Integration																				
K73 Ury	-2	0	0	+1	+1																			
K122 Mains of Cowie	0	0	0	0	0																			

Note: STAG Criteria Definitions obtained from <http://www.transportscotland.gov.uk/stag/td/Part1/5.4>

References:

- 1 - Change in Daily Traffic Flow on A90(T) (Table 7.2 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 2 - Time lost due to congestion (% change 2007 - 2023) comparison with road network operation during an average hour in the AM and PM Peak periods (Table 5.5 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 3 - Change in Rail Patronage & Utilisation North of Portlethen (Hourly Passengers) (Table 7.7 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 4 - Corridor S-Paramics assessment, A90 northbound AM peak period (06:30 - 09:30) between Charlestown and Bridge of Dee with allowance for re-routing via Findon (see SIAS Report Ref 72376) - Maximum Journey Time shown
- 5 - Maximum cordoned queue in the AM peak period (06:30 - 09:30) predicted by the S-Paramics corridor assessment with allowance for re-routing via Findon (see SIAS Report Ref TPATCDPM/72492)
- 6 - Change in Annual Vehicle Kilometres: 2007 - 2023 (Millions) (Table 5.3 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 7 - Distance to nearest rail station estimated using <http://www.gmap-pedometer.com/> and measured from the site boundary
- 8 - Rail service frequency obtained (30/10/09) from <http://www.nationalrail.co.uk/>
- 9 - Journey time calculations based on total travel from centre of sites to Aberdeen City Centre (including car access to nearest rail station), rail timetable information obtained (30/10/09) from <http://www.nationalrail.co.uk/> and car travel time estimated using <http://www.transportdirect.info/>
- 10 - Total average bus service journey time estimated using Accession GIS software + 5 minute wait time
- 11 - Average car travel journey time data estimated using <http://www.transportdirect.info/> and assumes travel to City Centre with 5 minutes added for accessing car park
- 12 - Journey time calculations based on total travel from centre of sites to Westhill. Quickest journey time by car and public transport has been estimated using <http://www.transportdirect.info/>

DPM_TAG (STAG Part 1 type) Appraisal Summary Tables

Proposal Details																
Study	Aberdeenshire Council Local Development Plan 2010 A90 South Comparative Appraisal of Major Sites															
Proposal Name:	Land Use Scenario 3 – Transport Test 1															
Proposal Description:	<table border="0"> <tr> <td>Land Use Scenario</td> <td>Transport Test</td> </tr> <tr> <td>K142 Elsick – 4,170 households - 1,376 jobs</td> <td>2 accesses from A90 via grade separation of the Bourtreebush junction and via the existing Newtonhill grade separated interchange</td> </tr> <tr> <td>K73 Ury - 230 households</td> <td>1 access from A957 Slug Road and 1 access from B979</td> </tr> <tr> <td>K122 Mains of Cowie - 200 households</td> <td>1 access from B979 and 1 from Golf Course Road</td> </tr> <tr> <td>Includes Structure Plan allocations in all other locations</td> <td>Includes committed Structure Plan infrastructure</td> </tr> </table>	Land Use Scenario	Transport Test	K142 Elsick – 4,170 households - 1,376 jobs	2 accesses from A90 via grade separation of the Bourtreebush junction and via the existing Newtonhill grade separated interchange	K73 Ury - 230 households	1 access from A957 Slug Road and 1 access from B979	K122 Mains of Cowie - 200 households	1 access from B979 and 1 from Golf Course Road	Includes Structure Plan allocations in all other locations	Includes committed Structure Plan infrastructure					
Land Use Scenario	Transport Test															
K142 Elsick – 4,170 households - 1,376 jobs	2 accesses from A90 via grade separation of the Bourtreebush junction and via the existing Newtonhill grade separated interchange															
K73 Ury - 230 households	1 access from A957 Slug Road and 1 access from B979															
K122 Mains of Cowie - 200 households	1 access from B979 and 1 from Golf Course Road															
Includes Structure Plan allocations in all other locations	Includes committed Structure Plan infrastructure															
Background Information																
Geographic Context:	<p>Elsick – the site is located to the west of Newtonhill and is bound by the A90(T) to the east and route of the proposed AWPR Fastlink to the west.</p> <p>Ury – the site is located to the north of Stonehaven and is bound on the east by the B979 and the south by the A90(T). Mains of Cowie – the site is bound to the west by the B979 and the south by Golf Course Road which currently facilitates access into Stonehaven from the southbound A90(T).</p> <p>The sites are currently rural in nature with the larger sites encompassing residential hamlets and farmsteads.</p> <p>The 2009 Scottish Index of Multiple Deprivation (SIMD) confirms the SIMD Rank and Geographic Access Domain Rank for the sites:</p> <table border="0"> <tr> <td>Site</td> <td>SIMD Rank</td> <td>Geographic Access Domain (GAD) Rank</td> </tr> <tr> <td>K142 Elsick</td> <td>4933</td> <td>447</td> </tr> <tr> <td>K73 Ury</td> <td>5940</td> <td>257</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>5940</td> <td>257</td> </tr> <tr> <td>Maximum Rank for Scotland</td> <td>6505</td> <td>6505</td> </tr> </table> <p>The above summary confirms that the sites are all in the top 25% overall least deprived areas in Scotland (SIMD Rank). The sites are in rural areas and are within the top 10% most deprived areas in terms of access to facilities (GAD Rank), in Scotland.</p>	Site	SIMD Rank	Geographic Access Domain (GAD) Rank	K142 Elsick	4933	447	K73 Ury	5940	257	K122 Mains of Cowie	5940	257	Maximum Rank for Scotland	6505	6505
Site	SIMD Rank	Geographic Access Domain (GAD) Rank														
K142 Elsick	4933	447														
K73 Ury	5940	257														
K122 Mains of Cowie	5940	257														
Maximum Rank for Scotland	6505	6505														
Social Context:																

<p>Economic Context: (2006 Data obtained from www.aberdeenshire.gov.uk/statistics)</p>	<p>Portlethen and Newtonhill are located immediately to the east of the Elswick site. Portlethen has a population of 6,632 and was developed as a new town in the 1970's to accommodate the demand for new housing in Aberdeen which was generated by the oil and gas boom. The majority (64.2%) of residents aged 16–74 work in Aberdeen City.</p> <p>Newtonhill has a population of 3,066 and was originally a small fishing village. Recent years have seen significant expansion of the village to create a commuter town serving Aberdeen.</p> <p>The Ury and Mains of Cowie sites are located on the edge of Stonehaven. Stonehaven has a population of 10,614 and was originally developed round the town's harbour in the 16th century. The greatest proportion (50.3%) of residents aged 16–74 work in Aberdeenshire with 46.3% working in Aberdeen City.</p> <p>Key indicators which pertain to the change in traffic flows and hourly rail patronage & utilisation have been extracted from ASAM4. The change between 2007 and 2023 with the addition of development generated trips is summarised below:</p>																	
<p>Cumulative Transport Impacts</p>	<table border="1"> <thead> <tr> <th>Indicator</th> <th>Location</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>Daily traffic flows Change 2007-2023 ¹</td> <td>A90(T) Bridge of Dee Approach</td> <td>-2%</td> </tr> <tr> <td>AM Peak hour traffic flows Change 2007-2023 ²</td> <td>A90(T) South of Charleston</td> <td>20%</td> </tr> <tr> <td rowspan="2">Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³</td> <td>A90(T) Bridge of Dee Approach</td> <td>-6%</td> </tr> <tr> <td>A90(T) South of Charleston</td> <td>-6%</td> </tr> <tr> <td></td> <td>Northbound rail travel north of Portlethen</td> <td>15%</td> </tr> </tbody> </table>	Indicator	Location	Change	Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	-2%	AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	20%	Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-6%	A90(T) South of Charleston	-6%		Northbound rail travel north of Portlethen	15%
Indicator	Location	Change																
Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	-2%																
AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	20%																
Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	-6%																
	A90(T) South of Charleston	-6%																
	Northbound rail travel north of Portlethen	15%																
<p>Planning Objectives</p>																		
<p>Objective:</p>	<p>Performance against planning objective:</p>																	
<ul style="list-style-type: none"> Objective 1 – Make the most efficient use of the transport network <ul style="list-style-type: none"> – by movement of people and goods using existing and committed networks; locally, across boundaries, and strategically 	<p>Journey time and queue length data from microsimulation modelling indicators for the A90(T) northbound between Charleston and Bridge of Dee are summarised as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Journey Time ⁴</th> <th>Queue Length ⁵</th> </tr> </thead> <tbody> <tr> <td>2007 Base</td> <td>15.7mins</td> <td>4,100m</td> </tr> <tr> <td>2023</td> <td>29.9mins</td> <td>7,000m</td> </tr> </tbody> </table> <p>Key issue to address: In the tests queuing from Bridge of Dee extends along the A90(T) in the AM peak. Queues may extend close to Charleston Interchange.</p>		Journey Time ⁴	Queue Length ⁵	2007 Base	15.7mins	4,100m	2023	29.9mins	7,000m								
	Journey Time ⁴	Queue Length ⁵																
2007 Base	15.7mins	4,100m																
2023	29.9mins	7,000m																

- Objective 2 – **Reducing the need for people to travel** – in terms of communities to operate locally for some journeys, by reducing distance to other facilities
- Objective 3 – **Making sure that walking and cycling are attractive choices** – by taking cognisance where sites are accessible to facilities within an active travel range and that any natural or manmade barriers to walking or cycling movement are considered

ASAM4 has been used to predict the overall increase in vehicle kilometres which is generated by the land use scenario in 2023 when compared to 2007:

	Kilometres per year ⁶
2007 Base	3,819million
2023	1,012million
Increase (2007-2023)	27%

Site Accessibility Indicators

Existing Employment Sites

Employment population, provided by 2001 Census data, within the following distances of the sites:
 Convenient walking distance (1.6km) – 1,924 employees
 Convenient cycling distance (5.0km) – 13,260 employees

Existing + Potential Future Employment Sites

Convenient walking distance (1.6km) – 3,300 employees
 Convenient cycling distance (5.0km) – 14,636 employees

Proposed Employment Sites

	Future On-site Employment	North Portlethen (K136)	Marywell (K45 & K135)	Stonehaven (K36 & K67)
Elsick	√√	XX	XX	XX
Ury	None	XX	XX	√√
Mains of Cowie	None	XX	XX	X√

Key:

- XX Not accessible on foot or by cycle
- X√ Not accessible on foot but accessible by cycle
- √√ Potentially accessible on foot and by cycle

Note: Distance measured from centre of site

Existing and Proposed Education Amenities

	Existing Primary School	Proposed Primary School	Existing Secondary School	Proposed Secondary School
Elsick	X√	√√	XX	N/A
Ury	X√	√√	√√	N/A
Mains of Cowie	√√	√√	√√	N/A

Assessment of physical barriers to active travel

Base/Issue:

A90(T) presents a barrier to movement to the east of the Elsick site

Proposed AWPR Fastlink has the potential to generate a barrier to active travel to the west of the site

Limited pedestrian/cycle network in vicinity of Elsick site

Glen Ury presents a barrier to movement to the west of the Ury site

The site at Ury is located on an area of land which is over 45m higher than the town centre

Consideration:

Introduction of pedestrian/cycle crossing facilities in association with the grade separation of the Bourtreebush junction and improved facilities at the existing Newtonhill interchange

Travel likely to be associated with leisure and the provision of underpasses as part of the AWPR Fastlink will minimise its impact as a barrier to active travel

Provision of connection between site and existing transport networks

Provide foot/cycle crossing of the river as part of a vehicular bridge over Glen Ury

Provide adequate alternatives to walking and cycling i.e. public transport links

- Objective 4 – Making sure that public transport is an attractive choice – by making best locational use of existing public transport networks and identifying where additional measures can be effectively provided

Existing Public Transport Provision

	Elsick	Portlethen	Ury Stonehaven	For Information Only Mains of Cowie Stonehaven
Peak Hour Rail Travel	Nearest Rail Station	Portlethen	Ury Stonehaven	
	Distance to Rail Station ⁷	5km	3km	2km
	Travel Time to Aberdeen ⁸	32 – 34mins	36-40mins	33-37mins
Peak Hour Bus Travel	Rail Frequency ⁹	2 services	4 services	4 services
	Travel Time to Aberdeen ¹⁰	60mins	60mins	55mins
	Travel Time to Aberdeen ¹¹	32mins	37mins	39mins
	Travel Time to Westhill ¹²	70mins	70mins	68mins
Peak Hour Car Travel	Travel Time to Westhill ¹²	42mins	53mins	54mins

Bus Measures

Base/Issue

Additional Measures

Elsick site has a poor level of existing service provision due to its rural location although the eastern area of the site has a reasonable level of accessibility

Divert a proportion of Coastrider services (No.'s 107, 117 and X7) into the site

Services 107, 117 and X7 currently connect the Ury site with Aberdeen. Current A90/B979 interchange arrangement does not facilitate the services to route past the site when returning from Aberdeen

Stop services at site in association with junction alterations introduced as part of the AWRP Fastlink construction. Divert Stonehaven town service (No. 108) through site using future A957-B979 link road

Mains of Cowie site served by bus services which provide connection to the centre of Aberdeen in addition to the centre of Stonehaven and the town's rail station

Current level of service provision expected to be adequate to serve a site of the scale and location proposed

	<p>Proposed Park & Ride at Schoolhill</p> <p>Potential to Use Proposed Park & Ride Site</p> <p>K142 Elsick Park & Ride located approximately 6km to the north of the site and is likely to provide an attractive and convenient facility for Aberdeen commuters</p> <p>K73 Ury Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K122 Mains of Cowie Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>Proposed High Occupancy Vehicle (HOV) Lane A90(T) Northbound</p> <p>Site Design Issues Cumulative Impact</p> <p>Elsick No impact HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)</p> <p>Ury/Mains of Cowie No impact</p>
<p>Implementability Appraisal</p>	<p>The Implementability Appraisal has been undertaken using the following seven point scale of assessment which is set out in STAG:</p> <ul style="list-style-type: none"> +3 – Major benefit +2 – Moderate benefit +1 – Minor benefit 0 – No benefit or impact -1 – Small negative impact -2 – Moderate negative impact -3 – Major negative impact <p>The following section appraises the Elsick site in detail.</p> <p>Appraisal Score: -1</p>
<p>Key to Appraisal Score</p>	<p>The following section appraises the Elsick site in detail.</p> <p>Appraisal Score: -1</p> <p>The Elsick site's eastern boundary is located adjacent to the A90(T) with the existing Newtonhill grade separated interchange located immediately to the south-east of the site. Access is currently provided into the site from the interchange and it is expected to be relatively straightforward to provide a suitable form of development access from the junction. The scale of development is expected to require a second point of access from the trunk road network and it is proposed to provide this by grade separating the Bourtreebush junction which is located to the north-east of the site. Its construction is likely to require significant engineering work which has the potential to generate delay for</p>
<p>Technical:</p>	

	<p>existing road users.</p> <p>The impact of the existing A90(T) as a barrier to movement for residents is minimised by the existing grade separated crossing and can be further minimised by the provision of pedestrian and cycle facilities as part of the grade separation of the Bourtreebush junction.</p> <p>Diverted bus services are expected to be relatively straightforward to introduce with the provision of two grade separated development access junctions.</p> <p>Appraisal Score: +1</p> <p>The scale of the developments is likely to enable diverted bus services to be self-financing following the first 3 - 5 years being underwritten by developers. The location of the Elsick site provides opportunity to divert a proportion of existing Coastrider services (No. 107, 117 and X7) into the site. Additional buses will be required to minimise the impact on existing journey times and service frequency. The introduction of new buses will effectively introduce a new service to serve the Elsick site with existing service provision remaining at current levels.</p> <p>It is considered that the proposed Schoolhill Park & Ride facility will attract Elsick residents travelling into Aberdeen.</p> <p>Appraisal Score: 0</p> <p>It is expected that the majority of the transport infrastructure costs which will be associated with the development of the sites will be borne by developers.</p> <p>The scale of the development is expected to support the diversion of bus services without the need for financial support following initial funding by developers.</p> <p>Appraisal Score: 0</p> <p>The development transport proposal could generate objections by introducing additional transport movements in rural areas. The Elsick site is located to the west of the A90(T) which separates the development from existing Newtonhill residents. The majority of trips which are predicted to be generated by the site are expected to travel north via the A90(T). The Bourtreebush junction is likely to provide the more attractive junction to access the A90(T). This will minimise the development's impact on the existing Newtonhill grade separated interchange and minimise the potential for opposition to the development from local residents.</p> <p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Implementability Appraisal can be summarised as follows:</p> <table border="1"> <thead> <tr> <th colspan="4">Implementability Appraisal</th> </tr> <tr> <th>Site</th> <th>Technical</th> <th>Operational</th> <th>Financial</th> <th>Public</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>+1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is not considered that either of the site's transport interventions will generate other than a small negative impact.</p>	Implementability Appraisal				Site	Technical	Operational	Financial	Public	K73 Ury	-1	+1	0	0	K122 Mains of Cowie	+1	+1	0	0
Implementability Appraisal																				
Site	Technical	Operational	Financial	Public																
K73 Ury	-1	+1	0	0																
K122 Mains of Cowie	+1	+1	0	0																
Operational:																				
Financial:																				
Public:																				
STAG Criteria	Assessment Summary																			
Criterion	Supporting Information																			

<p>Environment:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Small negative impact</p>	<p>Appraisal Score: -1</p> <p>There are large areas of environmental constraints shown to be located in the vicinity of Bettyhill House and Cammachmore which could have an impact on the layout of the development although these are unlikely to have an impact on the location and form of development accesses. A small Aberdeenshire SMR site is located adjacent to the Bourtreebush junction and this may have an impact on the form and scale of improvements which can be introduced at the junction. The SMR sites don't preclude development due to their classification.</p> <p>The site's rural location and scale are expected to enable the majority of development to be located in a relatively remote location from existing properties and therefore the development is unlikely to have a significant impact on a large number of residential receptors.</p>
<p>Safety:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate benefit</p>	<p>Appraisal Score: +2</p> <p>It is expected that the majority of development generated traffic will access the site via the A90(T) and minimise the development's impact on the local road network.</p> <p>Development of the Elswick site will require grade separation of the existing Bourtreebush junction which will provide a form of interchange which is expected to be safer than the current junction arrangement for all modes of travel.</p> <p>Development of the Elswick site will include a network of pedestrian and cycle facilities which is likely to provide an improvement over the existing situation which requires pedestrians and cyclists to use the rural road network to travel in the vicinity of the areas.</p>
<p>Economy:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Small negative impact</p>	<p>Appraisal Score: -1</p> <p>The majority of trips which are predicted to be generated by the Elswick site are expected to be travel north to employment opportunities which are located in and around Aberdeen. The majority of trips are expected to be attracted to the existing A90(T) which is located to the east. While this will increase the magnitude of traffic travelling on the A90(T) in the vicinity of the site, it is expected that the AWPR and AWPR Fastlink will remove a significant proportion of existing traffic from the road.</p>
<p>Integration:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>No benefit or impact</p>	<p>Appraisal Score: 0</p> <p>It is considered that the use of the existing Newtonhill grade separated interchange and grade separation of the Bourtreebush junction will enable the Elswick site to be accessible from Newtonhill and Portlethen by all modes of travel. It is expected that the improvement of the Bourtreebush junction will minimise the impact on journey times to Aberdeen by diverting bus services into the site.</p>

<p>Accessibility and Social Inclusion:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Minor benefit</p>	<p>Appraisal Score: +1</p> <p>Diversion of existing Coastrider bus services into the site will be implemented without impacting on the level of service provision or journey times offered by existing services through the introduction of additional buses that would not then route via Portlethen. Existing users would not be affected if sufficient additional buses were provided to cover both the diverted and Portlethen routes. Development of the Elswick site will include a range of facilities and amenities including employment opportunities and education, retail and community facilities which will benefit both future and existing residents living in the vicinity of the site.</p>																		
<p>Complementary Sites STAG Impacts</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact – Minor benefit</p>	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Appraisal against STAG Criteria can be summarised as follows:</p> <table border="1" data-bbox="523 103 825 1480"> <thead> <tr> <th>Site</th> <th>Environment</th> <th>Safety</th> <th>Economy</th> <th>Integration</th> <th>Accessibility & Social Inclusion</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-2</td> <td>0</td> <td>0</td> <td>+1</td> <td>+1</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is considered that the Mains of Cowie site will not generate a significant impact when appraised against STAG criteria. The Ury site has been judged to generate a moderate negative environmental impact as the majority of the site and access option locations are shown to be listed within Aberdeenshire's SMR. The category of site does not preclude development within it.</p>	Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion	K73 Ury	-2	0	0	+1	+1	K122 Mains of Cowie	0	0	0	0	0
Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion															
K73 Ury	-2	0	0	+1	+1															
K122 Mains of Cowie	0	0	0	0	0															

Note: STAG Criteria Definitions obtained from <http://www.transportscotland.gov.uk/stag/td/Part1/5.4>

References:

- 1 - Change in Daily Traffic Flow on A90(T) (Table 7.2 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 2 - Time lost due to congestion (% change 2007 - 2023) comparison with road network operation during an average hour in the AM and PM Peak periods (Table 5.5 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 3 - Change in Rail Patronage & Utilisation North of Portlethen (Hourly Passengers) (Table 7.7 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 4 - Corridor S-Paramics assessment, A90 northbound AM peak period (06:30 - 09:30) between Charlestown and Bridge of Dee with allowance for re-routing via Findon (see SIAS Report Ref 72376) - Maximum Journey Time shown
- 5 - Maximum cordoned queue in the AM peak period (06:30 - 09:30) predicted by the S-Paramics corridor assessment with allowance for re-routing via Findon (see SIAS Report Ref TPATCDPM/72492)
- 6 - Change in Annual Vehicle Kilometres: 2007 - 2023 (Millions) (Table 5.3 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 7 - Distance to nearest rail station estimated using <http://www.gmap-pedometer.com/> and measured from the site boundary
- 8 - Rail service frequency obtained (30/10/09) from <http://www.nationalrail.co.uk/>
- 9 - Journey time calculations based on total travel from centre of sites to Aberdeen City Centre (including car access to nearest rail station), rail timetable information obtained (30/10/09) from <http://www.nationalrail.co.uk/> and car travel time estimated using <http://www.transportdirect.info/>
- 10 - Total average bus service journey time estimated using Accession GIS software + 5 minute wait time
- 11 - Average car travel journey time data estimated using <http://www.transportdirect.info/> and assumes travel to City Centre with 5 minutes added for accessing car park

12 - Journey time calculations based on total travel from centre of sites to Westhill. Quickest journey time by car and public transport has been estimated using <http://www.transportdirect.info/>

DPM_TAG (STAG Part 1 type) Appraisal Summary Tables

Proposal Details																
Study	Aberdeenshire Council Local Development Plan 2010 A90 South Comparative Appraisal of Major Sites															
Proposal Name:	Land Use Scenario 3 – Transport Test 2															
Proposal Description:	<p>Land Use Scenario Transport Test 1 access from AWPR Fastlink and 2 accesses from A90 via grade separation of the Bourtreebush junction and via the existing Newtonhill grade separated interchange 1 access from A957 Slug Road and 1 access from B979 1 access from B979 and 1 from Golf Course Road Includes committed Structure Plan infrastructure</p> <p>K142 Elsick – 4,170 households - 1,376 jobs</p> <p>K73 Ury - 230 households K122 Mains of Cowie - 200 households Includes Structure Plan allocations in all other locations</p>															
Background Information																
Geographic Context:	<p>Elsick – the site is located to the west of Newtonhill and is bound by the A90(T) to the east and route of the proposed AWPR Fastlink to the west. Ury – the site is located to the north of Stonehaven and is bound on the east by the B979 and the south by the A90(T). Mains of Cowie – the site is bound to the west by the B979 and the south by Golf Course Road which currently facilitates access into Stonehaven from the southbound A90(T). The sites are currently rural in nature with the larger sites encompassing residential hamlets and farmsteads. The 2009 Scottish Index of Multiple Deprivation (SIMD) confirms the SIMD Rank and Geographic Access Domain Rank for the sites:</p> <table border="0"> <tr> <td>Site</td> <td>SIMD Rank</td> <td>Geographic Access Domain (GAD) Rank</td> </tr> <tr> <td>K142 Elsick</td> <td>4933</td> <td>447</td> </tr> <tr> <td>K73 Ury</td> <td>5940</td> <td>257</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>5940</td> <td>257</td> </tr> <tr> <td>Maximum Rank for Scotland</td> <td>6505</td> <td>6505</td> </tr> </table> <p>The above summary confirms that the sites are all in the top 25% overall least deprived areas in Scotland (SIMD Rank). The sites are in rural areas and are within the top 10% most deprived areas in terms of access to facilities (GAD Rank), in Scotland.</p>	Site	SIMD Rank	Geographic Access Domain (GAD) Rank	K142 Elsick	4933	447	K73 Ury	5940	257	K122 Mains of Cowie	5940	257	Maximum Rank for Scotland	6505	6505
Site	SIMD Rank	Geographic Access Domain (GAD) Rank														
K142 Elsick	4933	447														
K73 Ury	5940	257														
K122 Mains of Cowie	5940	257														
Maximum Rank for Scotland	6505	6505														
Social Context:																

<p>Economic Context: (2006 Data obtained from www.aberdeenshire.gov.uk/statistics)</p>	<p>Portlethen and Newtonhill are located immediately to the east of the Elsick site. Portlethen has a population of 6,632 and was developed as a new town in the 1970s to accommodate the demand for new housing in Aberdeen which was generated by the oil and gas boom. The majority (64.2%) of residents aged 16–74 work in Aberdeen City.</p> <p>Newtonhill has a population of 3,066 and was originally a small fishing village. Recent years have seen significant expansion of the village to create a commuter town serving Aberdeen.</p> <p>The Ury and Mains of Cowie sites are located on the edge of Stonehaven. Stonehaven has a population of 10,614 and was originally developed round the town's harbour in the 16th century. The greatest proportion (50.3%) of residents aged 16–74 work in Aberdeenshire with 46.3% working in Aberdeen City.</p> <p>Key indicators which pertain to the change in traffic flows and hourly rail patronage & utilisation have been extracted from ASAM4. The change between 2007 and 2023 with the addition of development generated trips is summarised below:</p>																		
<p>Cumulative Transport Impacts</p>	<table border="1"> <thead> <tr> <th>Indicator</th> <th>Location</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>Daily traffic flows Change 2007-2023 ¹</td> <td>A90(T) Bridge of Dee Approach</td> <td>-3%</td> </tr> <tr> <td>AM Peak hour traffic flows Change 2007-2023 ²</td> <td>A90(T) South of Charleston</td> <td>10%</td> </tr> <tr> <td>Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³</td> <td>A90(T) Bridge of Dee Approach</td> <td>9%</td> </tr> <tr> <td></td> <td>A90(T) South of Charleston</td> <td>0%</td> </tr> <tr> <td></td> <td>Northbound rail travel north of Portlethen</td> <td>15%</td> </tr> </tbody> </table>	Indicator	Location	Change	Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	-3%	AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	10%	Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	9%		A90(T) South of Charleston	0%		Northbound rail travel north of Portlethen	15%
Indicator	Location	Change																	
Daily traffic flows Change 2007-2023 ¹	A90(T) Bridge of Dee Approach	-3%																	
AM Peak hour traffic flows Change 2007-2023 ²	A90(T) South of Charleston	10%																	
Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³	A90(T) Bridge of Dee Approach	9%																	
	A90(T) South of Charleston	0%																	
	Northbound rail travel north of Portlethen	15%																	
<p>Planning Objectives</p>																			
<p>Objective:</p>	<p>Performance against planning objective:</p>																		
<ul style="list-style-type: none"> Objective 1 – Make the most efficient use of the transport network <ul style="list-style-type: none"> – by movement of people and goods using existing and committed networks; locally, across boundaries, and strategically 	<p>Journey time and queue length data from microsimulation modelling indicators for the A90(T) northbound between Charleston and Bridge of Dee are summarised as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Journey Time ⁴</th> <th>Queue Length ⁵</th> </tr> </thead> <tbody> <tr> <td>2007 Base</td> <td>15.7mins</td> <td>4,100m</td> </tr> <tr> <td>2023</td> <td>26.4mins</td> <td>6,200m</td> </tr> </tbody> </table> <p>Key issue to address: In the test queues from Bridge of Dee extends along the A90(T) in the AM peak. Queues may extend close to Charleston Interchange.</p>				Journey Time ⁴	Queue Length ⁵	2007 Base	15.7mins	4,100m	2023	26.4mins	6,200m							
	Journey Time ⁴	Queue Length ⁵																	
2007 Base	15.7mins	4,100m																	
2023	26.4mins	6,200m																	

- Objective 2 – Reducing the need for people to travel – in terms of communities to operate locally for some journeys, by reducing distance to other facilities
- Objective 3 – Making sure that walking and cycling are attractive choices – by taking cognisance where sites are accessible to facilities within an active travel range and that any natural or manmade barriers to walking or cycling movement are considered

ASAM4 has been used to predict the overall increase in vehicle kilometres which is generated by the land use scenario in 2023 when compared to 2007:

	Kilometres per year ⁶
2007 Base	3,819million
2023	1,009million
Increase (2007-2023)	26%

Site Accessibility Indicators

Existing Employment Sites

Employment population, provided by 2001 Census data, within the following distances of the sites:
 Convenient walking distance (1.6km) – 1,924 employees
 Convenient cycling distance (5.0km) – 13,260 employees

Existing + Potential Future Employment Sites

Convenient walking distance (1.6km) – 3,300 employees
 Convenient cycling distance (5.0km) – 14,636 employees

Proposed Employment Sites

Future On-site Employment	North Portlethen (K136)	Marywell (K45 & K135)	Stonehaven (K36 & K67)
Elsick	XX	XX	XX
Ury	XX	XX	√√
Mains of Cowie	XX	XX	X√

Key:

- XX Not accessible on foot or by cycle
- X√ Not accessible on foot but accessible by cycle
- √√ Potentially accessible on foot and by cycle

Note: Distance measured from centre of site

Existing and Proposed Education Amenities

	Existing Primary School	Proposed Primary School	Existing Secondary School	Proposed Secondary School
Elsick	X√	√√	XX	N/A
Ury	X√	√√	√√	N/A
Mains of Cowie	√√	√√	√√	N/A

Assessment of physical barriers to active travel

Base/Issue:

A90(T) presents a barrier to movement to the east of the Elsick site

Proposed AWPR Fastlink has the potential to generate a barrier to active travel to the west of the site

Limited pedestrian/cycle network in vicinity of Elsick site

Glen Ury presents a barrier to movement to the west of the Ury site

The site at Ury is located on an area of land which is over 45m higher than the town centre

Consideration:

Introduction of pedestrian/cycle crossing facilities in association with the grade separation of the Bourtreebush junction and improved facilities at the existing Newtonhill interchange

Travel likely to be associated with leisure and the provision of underpasses as part of the AWPR Fastlink will minimise its impact as a barrier to active travel

Provision of connection between site and existing transport networks

Provide foot/cycle crossing of the river as part of a vehicular bridge over Glen Ury

Provide adequate alternatives to walking and cycling i.e. public transport links

- Objective 4 – Making sure that public transport is an attractive choice – by making best locational use of existing public transport networks and identifying where additional measures can be effectively provided

Existing Public Transport Provision

	Elsick	Portlethen	Ury Stonehaven	For Information Only Mains of Cowie Stonehaven
Peak Hour Rail Travel	Nearest Rail Station			
	Distance to Rail Station ⁷	5km	3km	2km
	Travel Time to Aberdeen ⁸	32 – 34mins	36-40mins	33-37mins
Peak Hour Bus Travel	Rail Frequency ⁹	2 services 60mins	4 services 60mins	4 services 55mins
	Travel Time to Aberdeen ¹⁰	32mins	37mins	39mins
Peak Hour Car Travel	Travel Time to Aberdeen ¹¹	70mins	70mins	68mins
	Travel Time to Westhill ¹²			
Peak Hour Car Travel	Travel Time to Westhill ¹²	42mins	53mins	54mins

Bus Measures

Base/Issue

Elsick site has a poor level of existing service provision due to its rural location although the eastern area of the site has a reasonable level of accessibility

Services 107, 117 and X7 currently connect the Ury site with Aberdeen. Current A90/B979 interchange arrangement does not facilitate the services to route past the site when returning from Aberdeen

Mains of Cowie site served by bus services which provide connection to the centre of Aberdeen in addition to the centre of Stonehaven and the town's rail station

Additional Measures

Divert a proportion of Coastrider services (No.'s 107, 117 and X7) into the site

Stop services at site in association with junction alterations introduced as part of the AWRP Fastlink construction. Divert Stonehaven town service (No. 108) through site using future A957-B979 link road

Current level of service provision expected to be adequate to serve a site of the scale and location proposed

	<p>Proposed Park & Ride at Schoolhill</p> <p>Potential to Use Proposed Park & Ride Site</p> <p>K142 Elsick Park & Ride located approximately 6km to the north of the site and is likely to provide an attractive and convenient facility for Aberdeen commuters</p> <p>K73 Ury Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K122 Mains of Cowie Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>Proposed High Occupancy Vehicle (HOV) Lane A90(T) Northbound</p> <table border="0"> <tr> <td>Site</td> <td>Design Issues</td> <td>Cumulative Impact</td> </tr> <tr> <td>Elsick</td> <td>No impact</td> <td>HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)</td> </tr> <tr> <td>Ury/Mains of Cowie</td> <td>No impact</td> <td></td> </tr> </table>	Site	Design Issues	Cumulative Impact	Elsick	No impact	HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)	Ury/Mains of Cowie	No impact	
Site	Design Issues	Cumulative Impact								
Elsick	No impact	HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)								
Ury/Mains of Cowie	No impact									
<p>Implementability Appraisal</p>										
<p>Key to Appraisal Score</p>	<p>The Implementability Appraisal has been undertaken using the following seven point scale of assessment which is set out in STAG:</p> <ul style="list-style-type: none"> +3 – Major benefit +2 – Moderate benefit +1 – Minor benefit 0 – No benefit or impact -1 – Small negative impact -2 – Moderate negative impact -3 – Major negative impact <p>The following section appraises the Elsick site in detail.</p> <p>Appraisal Score: -2</p>									
<p>Technical:</p>	<p>The Elsick site's eastern boundary is located adjacent to the A90(T) with the existing Newtonhill grade separated interchange located immediately to the south-east of the site. Access is currently provided into the site from the interchange and it is expected to be relatively straightforward to provide a suitable form of development access from the junction. The scale of development is expected to require a second point of access from the trunk road network</p>									

	<p>and it is proposed to provide this by grade separating the Bourtreebush junction which is located to the north-east of the site. Its construction is likely to require significant engineering work which has the potential to generate delay for existing road users.</p> <p>The impact of the existing A90(T) as a barrier to movement for residents is minimised by the existing grade separated crossing and can be further minimised by the provision of pedestrian and cycle facilities as part of the grade separation of the Bourtreebush junction.</p> <p>An additional access is to be provided from the AWPR Fastlink which is to be located immediately to the west of the site. The development access junction will be formed on a strategic road and it is unclear whether this would be acceptable to Transport Scotland or if the junction can be accommodated within the AWPR Fastlink road scheme. Diverted bus services are expected to be relatively straightforward to introduce with the provision of two grade separated development access junctions.</p>															
Operational:	<p>Appraisal Score: +1</p> <p>The scale of the developments is likely to enable diverted bus services to be self-financing following the first 3 - 5 years being underwritten by developers. The location of the Elsieck site provides opportunity to divert a proportion of existing Coaster services (No. 107, 117 and X7) into the site. Additional buses will be required to minimise the impact on existing journey times and service frequency. The introduction of new buses will effectively introduce a new service to serve the Elsieck site with existing service provision remaining at current levels.</p> <p>It is considered that the proposed Schoolhill Park & Ride facility will attract Elsieck residents travelling into Aberdeen.</p>															
Financial:	<p>Appraisal Score: 0</p> <p>It is expected that the majority of the transport infrastructure costs which will be associated with the development of the sites will be borne by developers.</p> <p>The scale of the development is expected to support the diversion of bus services without the need for financial support following initial funding by developers.</p>															
Public:	<p>Appraisal Score: 0</p> <p>The majority of trips which are predicted to be generated by the site are expected to travel north with the AWPR Fastlink expected to provide an attractive facility for residents. Construction of a development access on the AWPR Fastlink may be relatively straightforward, but further investigation is required. There may be an opportunity to construct the interchange in association with the Fastlink without causing delay for existing road users, subject to phasing requirements that are not yet known.</p>															
	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Implementability Appraisal can be summarised as follows:</p> <table border="1" data-bbox="1166 600 1286 1615"> <thead> <tr> <th>Site</th> <th>Technical</th> <th>Operational</th> <th>Financial</th> <th>Public</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>+1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is not considered that either of the site's transport interventions will generate other than a small negative impact.</p>	Site	Technical	Operational	Financial	Public	K73 Ury	-1	+1	0	0	K122 Mains of Cowie	+1	+1	0	0
Site	Technical	Operational	Financial	Public												
K73 Ury	-1	+1	0	0												
K122 Mains of Cowie	+1	+1	0	0												

STAG Criteria		
Criterion	Assessment Summary	Supporting Information
Environment:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Small negative impact</p>	<p>Appraisal Score: -1</p> <p>There are large areas of environmental constraints shown to be located in the vicinity of Bettyhill House and Cammachmore which could have an impact on the layout of the development although these are unlikely to have an impact on the location and form of development accesses. A small Aberdeenshire SMR site is located adjacent to the Bourtreebush junction and this may have an impact on the form and scale of improvements which can be introduced at the junction. The SMR sites don't preclude development due to their classification.</p> <p>There are no significant environmental constraints shown to be located to the west of the site which are likely to have an impact on the form or location of a development access taken from the AWPR Fastlink. The site's rural location and scale are expected to enable the majority of development to be located in a relatively remote location from existing properties and therefore the development is unlikely to have a significant impact on a large number of residential receptors.</p>
Safety:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate benefit</p>	<p>Appraisal Score: +2</p> <p>It is expected that the majority of development generated traffic will access the site via the A90(T) and minimise the development's impact on the local road network.</p> <p>Development of the Elsick site will require grade separation of the existing Bourtreebush junction which will provide a form of interchange which is expected to be safer than the current junction arrangement for all modes of travel.</p> <p>Development of the Elsick site will include a network of pedestrian and cycle facilities which is likely to provide an improvement over the existing situation which requires pedestrians and cyclists to use the rural road network to travel in the vicinity of the areas.</p>
Economy:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>No benefit or impact</p>	<p>Appraisal Score: 0</p> <p>The majority of trips which are predicted to be generated by the Elsick site are expected to be travel north to employment opportunities which are located in and around Aberdeen. The majority of trips are expected to be attracted to the AWPR Fastlink which is to be constructed to the west of the site and to the existing A90(T) which is located to the east. While this will increase the magnitude of traffic travelling on the A90(T) in the vicinity of the site, it is expected that the AWPR and AWPR Fastlink will remove a significant proportion of existing traffic from the road.</p>
Integration:	<p>Description of Impacts</p>	<p>Appraisal Score: 0</p> <p>It is considered that the use of the existing Newtonhill grade separated interchange and grade separation of the Bourtreebush junction will enable the Elsick site to be accessible from Newtonhill and Portlethen by all modes of travel. It is expected that the improvement of the Bourtreebush junction will minimise the</p>

	Assessment using 7 point scale	impact on journey times to Aberdeen by diverting bus services into the site.																		
Accessibility and Social Inclusion:	<p>No benefit or impact</p> <p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Minor benefit</p>	<p>Appraisal Score: +1</p> <p>Diversion of existing Coastrider bus services into the site will be implemented without impacting on the level of service provision or journey times offered by existing services through the introduction of additional buses that would not then route via Portlethen. Existing users would not be affected if sufficient additional buses were provided to cover both the diverted and Portlethen routes. Development of the Elsieck site will include a range of facilities and amenities including employment opportunities and education, retail and community facilities which will benefit both future and existing residents living in the vicinity of the site.</p>																		
Complementary Sites STAG Impacts	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact – Minor benefit</p>	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Appraisal against STAG Criteria can be summarised as follows:</p> <table border="1"> <thead> <tr> <th>Site</th> <th>Environment</th> <th>Safety</th> <th>Economy</th> <th>Integration</th> <th>Accessibility & Social Inclusion</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-2</td> <td>0</td> <td>0</td> <td>+1</td> <td>+1</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is considered that the Mains of Cowie site will not generate a significant impact when appraised against STAG criteria. The Ury site has been judged to generate a moderate negative environmental impact as the majority of the site and access option locations are shown to be listed within Aberdeenshire's SMR. The category of site does not preclude development within it.</p>	Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion	K73 Ury	-2	0	0	+1	+1	K122 Mains of Cowie	0	0	0	0	0
Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion															
K73 Ury	-2	0	0	+1	+1															
K122 Mains of Cowie	0	0	0	0	0															

Note: STAG Criteria Definitions obtained from <http://www.transportscotland.gov.uk/stag/td/Part1/5.4>

References:

- 1 - Change in Daily Traffic Flow on A90(T) (Table 7.2 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 2 - Time lost due to congestion (% change 2007 - 2023) comparison with road network operation during an average hour in the AM and PM Peak periods (Table 5.5 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 3 - Change in Rail Patronage & Utilisation North of Portlethen (Hourly Passengers) (Table 7.7 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 4 - Corridor S-Paramics assessment, A90 northbound AM peak period (06:30 - 09:30) between Charlestown and Bridge of Dee with allowance for re-routing via Findon (see SIAS Report Ref 72376) - Maximum Journey Time shown
- 5 - Maximum cordoned queue in the AM peak period (06:30 - 09:30) predicted by the S-Paramics corridor assessment with allowance for re-routing via Findon (see SIAS Report Ref TPATCDPM/72492)
- 6 - Change in Annual Vehicle Kilometres: 2007 - 2023 (Millions) (Table 5.3 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)

- 7 - Distance to nearest rail station estimated using <http://www.gmap-pedometer.com/> and measured from the site boundary
- 8 - Rail service frequency obtained (30/10/09) from <http://www.nationalrail.co.uk/>
- 9 - Journey time calculations based on total travel from centre of sites to Aberdeen City Centre (including car access to nearest rail station), rail timetable information obtained (30/10/09) from <http://www.nationalrail.co.uk/> and car travel time estimated using <http://www.transportdirect.info/>
- 10 - Total average bus service journey time estimated using Accession GIS software + 5 minute wait time
- 11 - Average car travel journey time data estimated using <http://www.transportdirect.info/> and assumes travel to City Centre with 5 minutes added for accessing car park

DPM_TAG (STAG Part 1 type) Appraisal Summary Tables

Proposal Details																			
Study	Aberdeenshire Council Local Development Plan 2010 A90 South Comparative Appraisal of Major Sites																		
Proposal Name:	Land Use Scenario 4 – Transport Test 1																		
Proposal Description:	<table border="0"> <tr> <td>Land Use Scenario</td> <td>Transport Test</td> </tr> <tr> <td>K89 Mill of Forest – 2,085 households - 688 jobs</td> <td>Access from the A90 via an altered A90 / A92 interchange and a local access from Mill of Forest Road to the east</td> </tr> <tr> <td>K101 East Newtonleys – 2,085 households - 688 jobs</td> <td>Access from the A92 and a local access from the A957 to the north</td> </tr> <tr> <td>K73 Ury - 230 households</td> <td>1 access from A957 Slug Road and 1 access from B979</td> </tr> <tr> <td>K122 Mains of Cowie - 200 households</td> <td>1 access from B979 and 1 from Golf Course Road</td> </tr> <tr> <td>Includes Structure Plan allocations in all other locations</td> <td>Includes committed Structure Plan infrastructure</td> </tr> </table>	Land Use Scenario	Transport Test	K89 Mill of Forest – 2,085 households - 688 jobs	Access from the A90 via an altered A90 / A92 interchange and a local access from Mill of Forest Road to the east	K101 East Newtonleys – 2,085 households - 688 jobs	Access from the A92 and a local access from the A957 to the north	K73 Ury - 230 households	1 access from A957 Slug Road and 1 access from B979	K122 Mains of Cowie - 200 households	1 access from B979 and 1 from Golf Course Road	Includes Structure Plan allocations in all other locations	Includes committed Structure Plan infrastructure						
Land Use Scenario	Transport Test																		
K89 Mill of Forest – 2,085 households - 688 jobs	Access from the A90 via an altered A90 / A92 interchange and a local access from Mill of Forest Road to the east																		
K101 East Newtonleys – 2,085 households - 688 jobs	Access from the A92 and a local access from the A957 to the north																		
K73 Ury - 230 households	1 access from A957 Slug Road and 1 access from B979																		
K122 Mains of Cowie - 200 households	1 access from B979 and 1 from Golf Course Road																		
Includes Structure Plan allocations in all other locations	Includes committed Structure Plan infrastructure																		
Background Information																			
Geographic Context:	<p>Mill of Forest – the site is located to the west of Stonehaven and is bound on the east by the A90(T) and north by the Dundee – Aberdeen rail line.</p> <p>East Newtonleys – the site is located to the south of Stonehaven and is bound on the south by the A92 and west by the A957.</p> <p>Ury – the site is located to the north of Stonehaven and is bound on the east by the B979 and the south by the A90(T).</p> <p>Mains of Cowie – the site is bound to the west by the B979 and the south by Golf Course Road which facilitates access into Stonehaven from the southbound A9(T).</p> <p>The sites are currently rural in nature with the larger sites encompassing residential hamlets and farmsteads.</p> <p>The 2009 Scottish Index of Multiple Deprivation (SIMD) confirms the SIMD Rank and Geographic Access Domain Rank for the sites:</p> <table border="0"> <tr> <td>Site</td> <td>SIMD Rank</td> <td>Geographic Access Domain (GAD) Rank</td> </tr> <tr> <td>K89 Mill of Forest</td> <td>5092</td> <td>281</td> </tr> <tr> <td>K101 East Newtonleys</td> <td>5092</td> <td>281</td> </tr> <tr> <td>K73 Ury</td> <td>5940</td> <td>257</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>5940</td> <td>257</td> </tr> <tr> <td>Maximum Rank for Scotland</td> <td>6505</td> <td>6505</td> </tr> </table> <p>The above summary confirms that the sites are all in the top 25% overall least deprived areas in Scotland (SIMD Rank). The sites are in rural areas and are within the top 10% most deprived areas in terms of access to facilities (GAD Rank), in Scotland.</p>	Site	SIMD Rank	Geographic Access Domain (GAD) Rank	K89 Mill of Forest	5092	281	K101 East Newtonleys	5092	281	K73 Ury	5940	257	K122 Mains of Cowie	5940	257	Maximum Rank for Scotland	6505	6505
Site	SIMD Rank	Geographic Access Domain (GAD) Rank																	
K89 Mill of Forest	5092	281																	
K101 East Newtonleys	5092	281																	
K73 Ury	5940	257																	
K122 Mains of Cowie	5940	257																	
Maximum Rank for Scotland	6505	6505																	
Social Context:																			

<p>Economic Context: (2006 Data obtained from www.aberdeenshire.gov.uk/statistics)</p>	<p>Stonehaven has a population of 10,614 and was originally developed round the town's harbour in the 16th century. The greatest proportion (50.3%) of residents aged 16–74 work in Aberdeenshire with 46.3% working in Aberdeen City.</p>											
<p>Cumulative Transport Impacts</p>	<p>Indicator</p> <p>Daily traffic flows Change 2007-2023 ¹</p> <p>AM Peak hour traffic flows Change 2007-2023 ²</p> <p>Change in Peak Hour Rail Patronage and Utilisation 2007-2023 ³</p>	<p>Location</p> <p>A90(T) Bridge of Dee Approach A90(T) South of Charleston A90(T) Bridge of Dee Approach A90(T) South of Charleston Northbound rail travel north of Portlethen</p>	<p>Change</p> <p>-4% 8% -8% -1% 19%</p>									
<p>Planning Objectives</p>												
<p>Objective:</p>	<p>Performance against planning objective:</p>											
<ul style="list-style-type: none"> Objective 1 – Make the most efficient use of the transport network – by movement of people and goods using existing and committed networks; locally, across boundaries, and strategically 	<p>Journey time and queue length data from microsimulation modelling indicators for the A90(T) northbound between Charleston and Bridge of Dee are summarised as follows:</p> <table border="0" data-bbox="877 896 1037 1568"> <tr> <td></td> <td>Journey Time ⁴</td> <td>Queue Length ⁵</td> </tr> <tr> <td>2007 Base</td> <td>15.7mins</td> <td>4,100m</td> </tr> <tr> <td>2023</td> <td>29.4mins</td> <td>6,500m</td> </tr> </table> <p>Key issue to address: In the test queuing from Bridge of Dee extends along the A90(T) in the AM peak. Queues may extend close to Charleston Interchange.</p>				Journey Time ⁴	Queue Length ⁵	2007 Base	15.7mins	4,100m	2023	29.4mins	6,500m
	Journey Time ⁴	Queue Length ⁵										
2007 Base	15.7mins	4,100m										
2023	29.4mins	6,500m										

- Objective 2 – Reducing the need for people to travel – in terms of communities to operate locally for some journeys, by reducing distance to other facilities
- Objective 3 – Making sure that walking and cycling are attractive choices – by taking cognisance where sites are accessible to facilities within an active travel range and that any natural or manmade barriers to walking or cycling movement are considered

ASAM4 has been used to predict the overall increase in vehicle kilometres which is generated by the land use scenario in 2023 when compared to 2007:

	Kilometres per year ⁶
2007 Base	3,819million
2023	1,052million
Increase (2007-2023)	28%

Site Accessibility Indicators

Existing Employment Sites

Employment population (provided by 2001 Census data) within the following distances of the sites:
 Convenient walking distance (1.6km) – 2,155 employees
 Convenient cycling distance (5.0km) – 15,749 employees

Existing + Potential Future Employment Sites

Convenient walking distance (1.6km) – 3,531 employees
 Convenient cycling distance (5.0km) – 17,125 employees

Proposed Employment Sites

	Future On-site Employment	North Portlethen (K136)	Marywell (K45 & K135)	Stonehaven (K36 & K67)
Mill of Forest East	√√	XX	XX	XX
Newtonleys	√√	XX	XX	XX
Ury	None	XX	XX	√√
Mains of Cowie	None	XX	XX	XX

Key:

- XX Not accessible on foot or by cycle
- X√ Not accessible on foot but accessible by cycle
- √√ Potentially accessible on foot and by cycle

Note: Distance measured from centre of site

Existing and Proposed Education Amenities

	Existing Primary School	Proposed Primary School	Existing Secondary School	Proposed Secondary School
Mill of Forest East	√√	√√	X√	N/A
Newtonleys	X√	√√	X√	N/A
Ury	√√	√√	√√	N/A
Mains of Cowie	√√	√√	√√	N/A

Assessment of physical barriers to active travel

Base / Issue:

A90(T) presents a barrier to movement to the east of the Mill of Forest site

Limited pedestrian / cycle network in vicinity of Mill of Forest site

Limited pedestrian network in vicinity of East Newtonleys site

The site at East Newtonleys is located on an area of land which is over 70m higher than the town centre

Glen Ury presents a barrier to movement to the west of the Ury site

The site at Ury is located on an area of land which is over 45m higher than the town centre

Consideration:

Introduction of pedestrian crossing facilities in association with new vehicle link to Mill of Forest Road

Provision of connection between site and existing transport networks via new vehicular and pedestrian bridge over the A90(T)

Provision of connection between site and existing transport networks

Provide adequate alternatives to walking and cycling i.e. public transport links

Provide foot / cycle crossing of the river as part of a vehicular bridge over Glen Ury

Provide adequate alternatives to walking and cycling i.e. public transport links

- Objective 4 – Making sure that public transport is an attractive choice – by making best locational use of existing public transport networks and identifying where additional measures can be effectively provided

Existing Public Transport Provision

	Nearest Rail Station	Mill of Forest Stonehaven	East Newtonleys Stonehaven	Weighted Average Overall Journey Time	Ury Stonehaven	For Information Only Mains of Cowie Stonehaven
Peak Hour Rail Travel					3km	2km
	Distance to Rail Station ⁷	2km	3km			
	Travel Time to Aberdeen ⁸	34-38mins	34-38mins	36mins	36-40mins	33-37mins
	Rail Frequency ⁹	4 services	4 services	65mins	4 services	4 services
Peak Hour Bus Travel	Travel Time to Aberdeen ¹⁰	65mins	65mins	65mins	60mins	55mins
Peak Hour Car Travel	Travel Time to Aberdeen ¹¹	39mins	40mins	40mins	37mins	39mins
Peak Hour Bus Travel	Travel Time to Westhill ¹²	70mins	68mins	69mins	70mins	68mins
Peak Hour Car Travel	Travel Time to Westhill ¹²	57mins	57mins	57mins	53mins	54mins

Bus Measures

Base / Issue

Mill of Forest site currently has no bus services routing through the site although services route past the site on the A90(T)

Additional Measures

Extend Stonehaven town service (No. 108) into site utilising new infrastructure including Mill of Forest Road link and bridge

East Newtonleys site currently has no bus services routing through the site although services route past the site on the A92 and the Stonehaven town service currently terminates at Braehead to the north of the site

Extend Stonehaven town service (No. 108) into site

	<p>Services 107 and 117 currently connect the Ury site with Aberdeen. Current A90/B979 interchange arrangement does not facilitate the services to route past the site when returning from Aberdeen</p> <p>Mains of Cowie site served by bus services which provide connection to the centre of Aberdeen in addition to the centre of Stonehaven and the town's rail station</p> <p>Proposed Park & Ride at Schoolhill</p> <p>Potential to Use Proposed Park & Ride</p> <p>K89 Mill of Forest Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K101 East Newtonleys Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K73 Ury Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>K122 Mains of Cowie Park & Ride expected to be attractive to future Aberdeen commuters given its location to the north of the site</p> <p>Proposed High Occupancy Vehicle (HOV) Lane A90(T) Northbound</p> <p>Site Design Issues Cumulative Impact</p> <p>Mill of Forest No impact</p> <p>East Newtonleys No impact</p> <p>Ury / Mains of Cowie No impact</p> <p>HOV lane would not operate satisfactorily as currently designed using existing roadspace (Peak period traffic flows > 3000 vehicles)</p>
Implementability Appraisal	
Key to Appraisal Score	<p>The Implementability Appraisal has been undertaken using the following seven point scale of assessment which is set out in STAG:</p> <p>+3 – Major benefit</p> <p>+2 – Moderate benefit</p> <p>+1 – Minor benefit</p> <p>0 – No benefit or impact</p> <p>-1 - Small negative impact</p> <p>-2 - Moderate negative impact</p>

	<p>-3 - Major negative impact The following section appraises the land use scenario sites in detail.</p>
<p>Technical:</p>	<p>Appraisal Score: -1 to 0 The A90(T) presents a barrier to movement between Stonehaven and the Mill of Forest site which is located to the west of the town. An unclassified road currently forms the southern and western boundaries of the site with the local road network connecting to the strategic road network at the A90(T) / A92 Glaslaw Interchange. It is proposed to provide vehicular access into the site from the Glaslaw Interchange which is expected to be relatively straightforward to implement. However, a new bridge over the A90(T) will be required to provide a second vehicular access from Mill of Forest Road. The existing layout of the Glaslaw Interchange will also require to be revised to enable access to be provided into the site to and from the southbound carriageway of the A90(T). The East Newtonleys site is expected to be relatively straightforward to access given its proximity to the local (A92 and A957) and strategic (A90(T)) road networks with access provided onto the A90(T) via the existing Glaslaw Interchange which is located less than 500m to the west of the site. The Ury site is expected to be relatively straightforward to provide one point of access into the site from the B979 with an existing interchange facilitating access to and from the northbound A90(T) provided to the east of the site. It is however, expected to be technically challenging to provide a second vehicular access into the site and permit full development of the site. The provision of a second access from the A957 will require construction of a bridge over Glen Ury. It is considered to be relatively straightforward to access the Mains of Cowie site from both the B979 and Golf Course Road. The topography of the site may impact on the form and location of the development accesses. It is expected to be relatively straightforward to extend the Stonehaven town bus service into all four sites in association with the proposed infrastructure improvements.</p>
<p>Operational:</p>	<p>Appraisal Score: +1 to +2 The scale of the developments is likely to enable bus service alterations to be self-financing following the first 3 - 5 years being underwritten by developers. It is intended to extend the Stonehaven town bus service (No. 108) into the Mill of Forest, East Newtonleys and Ury sites in association with road infrastructure improvements including a new vehicular link (and associated crossing of the A90(T)) to Mill of Forest Road. The provision of the new link and crossing provides scope to extend the existing Stonehaven town service into both sites to provide a more efficient route through the town in addition to ensuring that the service remains self financing by increasing the population living along the route of the service. The provision of bus stops on the B979 adjacent to the Mains of Cowie site will provide opportunity for residents to access bus services which currently route along the B979 without a requirement for the Stonehaven town service to be diverted or extended.</p>

Financial:	<p>Appraisal Score: 0 It is expected that the majority of the transport infrastructure costs which will be associated with the development of the sites will be borne by developers. The scale of the development is expected to support the extension of the Stonehaven town bus service without the need for financial support following initial funding by developers.</p>																			
Public:	<p>Appraisal Score: -1 to +1 It is expected that there will be minimal levels of objection to the development of either site in terms of their transport impact as they are located within convenient access of the strategic road network with a large proportion of trips anticipated to be attracted to the A90(T). The East Newtonleys site is located adjacent to the local road network (A92 and A957) and it is considered that it will be straightforward to provide vehicular access into the site with no significant level of construction required. The provision of access into the Mill of Forest site is anticipated to require an increased level of engineering works when compared to the East Newtonleys site as it will require the construction of a bridge over the A90(T) to enable access to be provided from Mill of Forest Road, in addition to providing direct access from the A90(T) at the Glaslaw Interchange. Although the scenario will not require the construction of additional junctions on the strategic road network, construction of a new bridge over the A90(T) could generate delay for existing road users during construction of the structure. The Ury and Mains of Cowie sites will not require the provision of new access junctions on the A90(T) and it is considered that development of the sites and the associated infrastructure improvements are unlikely to generate significant levels of objection to the sites. There could however be objection to the construction of a bridge over Glen Ury to enable a second vehicular access to be provided into the Ury site. Improvements to transport infrastructure and service provision are likely to be welcomed by existing Portlethen residents and employees.</p>																			
General	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Implementability Appraisal can be summarised as follows:</p> <table border="1" data-bbox="970 600 1098 1301"> <thead> <tr> <th colspan="4">Implementability Appraisal</th> </tr> <tr> <th>Site</th> <th>Technical</th> <th>Operational</th> <th>Financial</th> <th>Public</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>+1</td> <td>+1</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is not considered that either of the site's transport interventions will generate other than a small negative impact.</p>	Implementability Appraisal				Site	Technical	Operational	Financial	Public	K73 Ury	-1	+1	0	0	K122 Mains of Cowie	+1	+1	0	0
Implementability Appraisal																				
Site	Technical	Operational	Financial	Public																
K73 Ury	-1	+1	0	0																
K122 Mains of Cowie	+1	+1	0	0																
STAG Criteria																				
Criterion	Assessment Summary																			
Environment:	<p>Supporting Information Appraisal Score: -2 to 0 The area to the east of the East Newtonleys site is shown to be an Aberdeenshire Area of Landscape Significance. There are no environmental constraints which are likely to have an impact on the location</p>																			

	<p>Assessment using 7 point scale</p> <p>Moderate negative impact – No benefit or impact</p>	<p>and form of development access provided from the A92 and A957. The area surrounding the Glaslaw Interchange is shown to be an Aberdeenshire SMR site which could have an impact on the form of access into the Mill of Forest site although its classification does not preclude development. There are no environmental constraints shown to be on the route of the proposed link to Mill of Forest Road and its associated crossing of the A90(T). There are no environmental constraints shown to be located in the vicinity of the Mains of Cowie site which are likely to have a major impact on the form and location of development accesses. A large proportion of the Ury site is shown to be an SMR site which could have an impact on the development of the site in addition to the form and location of development access junctions although its classification does not preclude development.</p>
<p>Safety:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>No impact or benefit – minor benefit</p>	<p>Appraisal Score: 0 to +1</p> <p>It is anticipated that no new junctions will be required on the strategic road network to provide access into the development sites with no potential associated impact on the safe operation of the network. It is understood that the A957 is to be realigned to route through the East Newtonleys site as part of its development. This is expected to provide a safer facility for existing and future road users. The Mill of Forest site will require the construction of a new crossing to provide access into the site from Mill of Forest Road in addition to an access from the existing Glaslaw Interchange. There could however, be safety implications associated with vehicles undertaking u-turn manoeuvres if the junction layout is not revised to enable all movements to be undertaken at the interchange. The current arrangement only permits access to or from the northbound carriageway of the A90(T) from the west of the trunk road. The provision of access into the Ury and Mains of Cowie sites will require the provision of a new junction on the A957 to provide a second point of access into the Ury site, and from the B979 and Golf Course Road to provide access into the Mains of Cowie site. Construction of any new junction can provide opportunity for an impact on the operation of the road network on which it is sited, however the design of the junctions will minimise the potential to generate a detrimental impact on the road network in terms of its safe operation. Development of the land use scenario sites will include a network of pedestrian and cycle facilities which is likely to provide an improvement over the existing situation and provide convenient access to existing facilities in Stonehaven.</p>
<p>Economy:</p>	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>No benefit or impact</p>	<p>Appraisal Score: 0</p> <p>The majority of trips which are predicted to be generated by the land use scenario are expected to access the strategic road network to travel north to employment opportunities which are located in and around Aberdeen. It is expected that a proportion of traffic will be attracted to the AWPR Fastlink and not have an impact on the operation of the A90(T) to the north of Stonehaven. In addition, it is expected that the AWPR and AWPR Fastlink will remove existing traffic from the A90(T).</p>

Integration:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Minor benefit - moderate benefit</p>	<p>Appraisal Score: +1 to +2</p> <p>The East Newtonleys site will extend the existing Stonehaven pedestrian / cycle network which currently terminates at Braehead.</p> <p>Construction of a new bridge over the A90(T) with associated pedestrian / cycle facilities as part of the development of the Mill of Forest site, will ensure that the site is connected to Stonehaven by all modes of travel.</p> <p>A new bridge is to be constructed over Glen Ury to provide vehicular access into the site from the A957. The link will facilitate access by the extended Stonehaven town bus service in addition to access by pedestrians and cyclists using the facilities which will be provided in association with the link road. It is expected that any improvements to local bus services including alterations to the route of the existing Stonehaven town bus service, can be accommodated without any detriment to existing travellers</p>																		
Accessibility and Social Inclusion:	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate benefit</p>	<p>Appraisal Score: +2</p> <p>Construction of a new bridge over the A90(T) and Glen Ury to provide access from Mill of Forest Road into the Mill of Forest site and from the A957 into the Ury site, is expected to enable alterations to existing bus routes to be accommodated without impacting on the journey time and frequency of existing services.</p> <p>The road infrastructure will provide opportunity to alter the route of the Stonehaven town service to provide a more efficient service than currently provided. In addition, development of the sites will assist in supporting the viability of the Stonehaven town bus service.</p> <p>Development of the Mill of Forest and East Newtonleys sites will include a range of facilities and amenities including employment opportunities and education, retail and community facilities which will benefit both future and existing residents living in the vicinity of the sites.</p>																		
Complementary Sites STAG Impacts	<p>Description of Impacts</p> <p>Assessment using 7 point scale</p> <p>Moderate negative impact – Minor benefit</p>	<p>Sites K73 Ury and K122 Mains of Cowie are common to all development scenarios and the results of the Appraisal against STAG Criteria can be summarised as follows:</p> <table border="1" data-bbox="925 537 1117 1456"> <thead> <tr> <th>Site</th> <th>Environment</th> <th>Safety</th> <th>Economy</th> <th>Integration</th> <th>Accessibility & Social Inclusion</th> </tr> </thead> <tbody> <tr> <td>K73 Ury</td> <td>-2</td> <td>0</td> <td>0</td> <td>+1</td> <td>+1</td> </tr> <tr> <td>K122 Mains of Cowie</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>It is considered that the Mains of Cowie site will not generate a significant impact when appraised against STAG criteria. The Ury site has been judged to generate a moderate negative environmental impact as the majority of the site and access option locations are shown to be listed within Aberdeenshire's SMR. The category of site does not preclude development within it.</p>	Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion	K73 Ury	-2	0	0	+1	+1	K122 Mains of Cowie	0	0	0	0	0
Site	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion															
K73 Ury	-2	0	0	+1	+1															
K122 Mains of Cowie	0	0	0	0	0															

Note: STAG Criteria Definitions obtained from <http://www.transportscotland.gov.uk/stag/td/Part1/5.4>

References:

1 - Change in Daily Traffic Flow on A90(T) (Table 7.2 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)

- 2 - Time lost due to congestion (% change 2007 - 2023) comparison with road network operation during an average hour in the AM and PM Peak periods (Table 5.5 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 3 - Change in Rail Patronage & Utilisation North of Portlethen (Hourly Passengers) (Table 7.7 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 4 - Corridor S-Paramics assessment, A90 northbound AM peak period (06:30 - 09:30) between Charlestown and Bridge of Dee with allowance for re-routing via Findon (see SIAS Report Ref 72376) - Maximum Journey Time shown
- 5 - Maximum cordoned queue in the AM peak period (06:30 - 09:30) predicted by the S-Paramics corridor assessment with allowance for re-routing via Findon (see SIAS Report Ref TPATCDPM/72492)
- 6 - Change in Annual Vehicle Kilometres: 2007 - 2023 (Millions) (Table 5.3 of the report titled Forecasting Transport Impacts in the A90 South Corridor, MVA, 19/02/10)
- 7 - Distance to nearest rail station estimated using <http://www.gmap-pedometer.com/> and measured from the site boundary
- 8 - Rail service frequency obtained (30/10/09) from <http://www.nationalrail.co.uk/>
- 9 - Journey time calculations based on total travel from centre of sites to Aberdeen City Centre (including car access to nearest rail station), rail timetable information obtained (30/10/09) from <http://www.nationalrail.co.uk/> and car travel time estimated using <http://www.transportdirect.info/>
- 10 - Total average bus service journey time estimated using Accession GIS software + 5 minute wait time
- 11 - Average car travel journey time data estimated using <http://www.transportdirect.info/> and assumes travel to City Centre with 5 minutes added for accessing car park
- 12 - Journey time calculations based on total travel from centre of sites to Westhill. Quickest journey time by car and public transport has been estimated using <http://www.transportdirect.info/>