NORTH EAST SCOTLAND TRANSPORT PARTNERSHIP

20th February, 2008

5. (3) Access from the South – Draft Report – With reference to Article 7(4) of the Minute of Meeting of the Board of 29th August, 2007, members had before them a report dated 8th February, 2008, by Jennifer Anderson explaining that a draft final report of the Access from the South study had been submitted by the consultants and that an Executive Summary of the document was appended to the report now presented.

The report reminded members that this study had followed on from its predecessor as it was felt that the earlier work required to be reviewed in light of the revised line of the Aberdeen Western Peripheral Route and the new link to Stonehaven and to explore further options in more depth; following advice from Transport Scotland, the review was also expanded to comply with the requirements of Part 1 of the Scottish Transport Appraisal Guidance.

Following a stakeholder workshop in 2007, options had been tested in packages using Paramics micro-simulation models developed for the short (2008) medium (2012 with Western Peripheral Route in place) and long-term (2027) and the study had identified potential infrastructural and traffic management improvements for the various timescales; it also suggested that a Park and Ride site would be most efficient in traffic operation terms if located at Schoolhill adjacent to the new grade separated interchange. As the potential measures identified in the study required to be implemented by the appropriate roads authority, it was proposed that the finalised report be put to both Councils for consideration of the individual projects therein and implementation as appropriate in accordance with their Local Transport Strategies.

Members proceeded to ask detailed questions about proposals to address difficulties in exiting Souterhead Road, widening the Bridge of Dee and reducing queues at Leggart Terrace. In answering these questions, officers explained that full consultation on the study had been undertaken with officers of both Councils and with Transport Scotland, that options for Souterhead Road included signalising the junction, that a long-term solution to queuing at Leggart Terrace could see traffic directed onto the Stonehaven Road; and that moving pedestrian and cycle traffic from the Bridge of Dee would allow more traffic on the bridge itself with a pedestrian footbridge/cycle way constructed nearby. In view of the significance of some of the schemes, members suggested that further consultation should be undertaken, particularly with the Aberdeen City and Shire Strategic Planning Committee in order that some of these major works could be incorporated into the new Structure Plan and subsequent Local Development Plans.

The Board agreed:-

(i) to approve the principle of the findings in the draft study to allow the report to be finalised;

(ii) to refer the final report to Aberdeen City and Aberdeenshire Councils and to the Aberdeen City and Shire Strategic Planning Committee for further consideration of the identified potential solutions, for implementation in line with their Local Transport Strategies and for consideration in the context of development plans;

(iii) to make appropriate provision for contributions to the funding of projects as they were brought forward to the Local Transport Strategy implementation processes; and

(iv) to request the Director to provide the full report to all Board members,

Access from the South – Draft Report

o Purpose of Report

This report advises Board members that the Access to Aberdeen from the South Study is nearing completion and that a draft of the final report has been submitted by the consultants for consideration.

o Background

Nestrans has been funding a study to develop options to improve traffic flows on the A90(T) Stonehaven Road and A956 Wellington Road corridor approaches to Aberdeen from the South and to identify a preferred location in transportation terms for a Park & Ride site and any bus priority measures required to ensure reliable bus journey times. The study has been carried out by consultants and overseen by a Steering Group consisting of officials from Nestrans, Transport Scotland and Aberdeen City and Aberdeenshire Councils.

The study follows on from a previous study by a different consultant that was reported to the Nestrans Board in August 2006. The Board agreed that the earlier work be reviewed in light of the revised routing of the Aberdeen Western Peripheral Route and new link to Stonehaven and to explore further options in more depth. Following advice from Transport Scotland the review was expanded to bring it into line with the requirements of a Scottish Transport Appraisal Guidance (STAG) Part 1 assessment

o Discussion

A stakeholder workshop was held in 2007 to set objectives and develop options. Options were sifted against the key objectives and the resultant options suitable for modeling were tested in packages using Paramics microsimulation models that had been developed for the short (2008), medium (2012 with Aberdeen Western Peripheral Route in place) and long term (2027). The study identifies potential infrastructure and traffic management improvements in the various timescales and suggests that a Park & Ride site would be most efficient in traffic operation terms if located at Schoolhill adjacent to the new grade separated interchange.

A draft report has been received for consideration by the Steering Group and can be made available on request. The Executive Summary is attached as an **Appendix**.

o Issues and Next Steps

The principles of the findings within the study are in accordance with the aims of the Regional Transport Strategy. As the potential measures identified within the study would require to be implemented by the relevant Roads Authority, it is recommended that Nestrans refers the finalised report to the two Councils for further consideration of the individual projects therein and implementation as appropriate in line with their Local Transport Strategies.

o Recommendation

It is recommended that the Board:

1. Note and approve the principle of the findings within the draft study to allow the report to be finalised.

2. Remit the final report to Aberdeen City and Aberdeenshire Councils for further consideration of the identified potential solutions and for implementation in line with their Local Transport Strategies.

3. Make appropriate provision for a contribution to the funding of projects as they are brought forward through the Local Transport Strategy implementation processes.

JA/8 February 2008

Aberdeen City Council, Aberdeenshire Council, Nestrans
Aberdeen Access from the South
Executive Summary

Date :	*Distribution :*
7 February 2008	**Aberdeen City Council**
Author :	**Aberdeenshire Council**
Peter Stewart	**Nestrans**
SIAS Project Code & Reference :	
TPATCAFS / 69019	

SIAS Limited www.sias.com
37 Manor Place, Edinburgh EH3 7EB, Tel: 0131 225 7900, Fax: 0131 225 9229
13 Rose Terrace, Perth PH1 5HA, Tel: 01738 621377, Fax: 01738 632887
70 Cowcross Street, London EC1M 6EJ, Tel: 020 7336 6653
49 Frederick Road, Edgbaston, Birmingham B15 1HN, Tel: 0121 454 5654, Fax: 0121 454 7656
Room 7, 1st Floor, George House, 36 North Hanover Street, Glasgow G1 2AD, Tel: 0141 572 8321

1 INTRODUCTION

This Executive Summary concludes a study undertaken by SIAS on behalf of Aberdeen City Council, Aberdeenshire Council and Nestrans concerning access to Aberdeen from the South. Full reporting can be found in 'Aberdeen Access from the South – Core Document – Transport Report (Draft)' (SIAS Ref. 69019). The study has been carried out in a manner consistent with Scottish Transport Appraisal Guidance (STAG) and is considered appropriate to feed into the transport appraisal input to a STAG Part 1. The study follows on from original work undertaken by JMP Consulting and its final report 'Aberdeen South Access Study – Final Report' produced in November 2006. This follow on study has been undertaken as a result of the Scottish ministerial announcement on 1st December 2005 regarding the preferred Aberdeen Western Peripheral Route (AWPR) alignment corridor with an additional new spur road to Stonehaven. The announcement presented a configuration of the AWPR sufficiently different from that previously considered to warrant this updated study.

On 2nd May 2006 the Minister announced the preferred alignment for the AWPR and the Stonehaven spur.

2 AIMS

The initial purpose of this study was to revisit the previous study by JMP, as a result of the revised route for the AWPR and to consider the proposed short, medium and long term options including a 1000 space park and ride facility, introducing alternative options where necessary. To that end, the main aims of the study were to:

- Review the Aberdeen South Access Study in light of the revised proposed route for the AWPR
- Review the options identified in the original study for the short, medium and long term
- Review the preferred location for a Park & Ride facility to the south of the city
- Identify and test alternative solutions where appropriate

The main focuses of the study have been the A90 (T) Stonehaven Road and A956 Wellington Road corridors to the south of Aberdeen including the four main road bridges over the River Dee namely:

- Bridge of Dee
- Queen Elizabeth II Bridge
- King George VI Bridge
- Victoria Bridge

Although the aim of the study was not to produce detailed designs, the deliverability of any identified improvements and their compatibility with wider objectives needed to be considered, with further investigation and detailed design would need to be considered at a future date.

3 PROBLEMS AND ISSUES

Problems and issues for Aberdeen, to which access to Aberdeen from the South contribute, have been summarised in the following paragraphs.

Traffic problems in Aberdeen South are not due to one cause but are attributable to a range of social, economic, geographic and transportation issues, which when combined, result in significant delay to all modes of traffic. In particular, this reduces public transport performance and affects efficient movement of freight.

In a social context, there is a general movement of population from Aberdeen City to Aberdeenshire which brings an increase in commuter trips. The population of Aberdeen City is projected to fall by 23% in the 20 years from 2004, while the population of Aberdeenshire is projected to rise by 8% over the same period.

Committed developments of both industry and housing in Aberdeen South will exacerbate the current traffic problems unless infrastructure is in place. In an economic context, structure and local plans are aiming for diversification in the local economy, which will require a Modern Transport System (MTS) to support it.

Road traffic issues regarding access to Aberdeen from the South arise in the main from the River Dee and its four road crossings, which are significant points of congestion. Conflicting movements of traffic to the city centre and to the Tullos/Altens industrial areas on Wellington Road in the AM peak, and vice versa in the PM peak, are also a source of congestion. Freight access is an issue due to width restrictions which require an HGV ban on Bridge of Dee, and height restrictions on Riverside Drive. Growth in traffic in recent years means that key areas are now over capacity at peak times for extended periods.

Existing public transport services link housing and industrial areas. Some bus priority measures are already in operation on Wellington Road, but the level of congestion means public transport services, along with all other modes of transport, are significantly delayed. Key locations have inadequate pedestrian and cyclist facilities, making these modes of travel unattractive to all but the most discerning users.

The perception of poor, or a lack of, travel choices has an influence on travel habits, and the nature of small villages and rural areas in Aberdeenshire results in a high level of car use. Improvements to the public transport, walking and cycling network are required in order to provide alternative travel choices and change travel habits.

Problems can be summarised as:

- problems for freight and commercial traffic due to insufficient infrastructure, routeing and gradients

- existing congestion and delay around development sites, the development of which would support the local plan aims to make the City of Aberdeen more attractive to families, with the chance to enhance the more deprived areas around Torry and Balnagask
- the desire to promote more sustainable, socially inclusive and healthy modes of transport (i.e. proposed Park and Ride) will be hampered by inability to operate effectively in the south of Aberdeen due to the congested road network
- geographic constraints due to gradients, river, embankments, and existing development and property boundaries
- safety and comfort issues for pedestrians and cyclists at key locations
- congestion causing delays to existing public transport
- no effective relationship between public transport and employment shift working patterns linked with main residential sites throughout the city

4 STAG AND TRAFFIC MODELS

STAG sets out the process to enable practitioners (and decision makers) to identify value for money transport solutions to identified transport problems. This Transport Scotland/Scottish Government guidance provides a framework for practitioners to use when undertaking a transport planning and appraisal process, from the earliest phases of planning, through appraisal and implementation, to post evaluation.

In undertaking the appraisal, SIAS has made use of the S-Paramics microsimulation traffic models developed by JMP Consulting and used in the previous study.

Information from ASAM, the Aberdeen Sub Area Model of TMfS, was used taking cognisance of the preferred route of the Aberdeen Western Peripheral Route (AWPR) and other proposals currently contained in the MTS.

5 PLANNING AND LOCAL OBJECTIVES

A workshop with key stakeholders was held on 6th March 2007 to discuss the current and future problems and issues, and to develop key objectives for the study.

In setting the objectives, consideration was given to the relevant transport and planning aspirations of central and local government, as set out in relevant Local and Regional Transport Strategies, Local Plans and Structure Plans, as well as the development objectives.

In accordance with the MTS Strategy for the north east up to 2011, this study has investigated elements of the original study objective to “investigate proposals to improve traffic flows and reduce delays for all modes of traffic on trunk and local roads approaching Aberdeen from the South” in traffic operation terms.

Planning objectives were established to provide a clear indication of what this appraisal is trying to achieve. The appraisal is concerned with investigating potential transport changes in the study area. The planning objectives have focused on desired transport outcomes following a broad consideration of the actual and potential future situation in the study area, drawing significantly on the appreciation of existing and potential problems.

The key objectives were agreed as:

- Economy - To reduce congestion and unreliability, and have effective journey times particularly where it impacts on the efficient movement of goods

- Safety - To reduce the incidence of, and potential for, collisions and all transport related collisions especially vulnerable users, such as cyclists, pedestrians and motorcyclists
- Social Inclusion & Accessibility - To encourage socially-inclusive and healthy transport modes other than single car occupancy
- Social Inclusion & Accessibility - To improve the accessibility between residential and employment areas
- Environment - To improve the local environment by reducing air pollution problems
- Integration - To integrate transport with land use planning to ensure that transport networks serve development in an efficient, effective and sustainable way

6 OPTION GENERATION

An workshop with key stakeholders was held on 6th March 2007 to develop and propose options and ideas for the short, medium and long term which would form the basis of assessment of Access to Aberdeen from the South.

The development of these options was undertaken to provide realistic and deliverable measures within the assessment timeframes. The options previously developed and tested by JMP formed part of this exercise, as did additional measures raised by NESTRANS and the Freight Quality Partnership.

The workshop session allowed the key stakeholders an opportunity to develop short, medium and long term ideas as possible transport solutions. Key areas were highlighted as requiring specific solutions:

1. Garthdee/ Bridge of Dee
2. King George VI Bridge
3. Queen Elizabeth II Bridge
4. Wellington Road
5. Hareness
6. Souterhead Roundabout
7. A90 Corridor/ Charleston
8. General consideration

The stakeholders were split into two groups and plans of the key areas were distributed. It was crucial that all options be considered at this stage, regardless of constraints such as cost, scale and deliverability. As a result a number of solutions were developed.

7 OPTION SIFTING AND APPRAISAL

The initial option sifting process involved scoring each of the options generated at the workshop against the key planning objectives, to ascertain which met the specified objectives. Where the options had the potential to meet the objectives, they were then considered as either part of a package for traffic model assessment, or as a measure worthy of future consideration, but outwith the scope of this study's traffic model testing.

Packages were brought together, taking the likely beneficial measures at each of the key locations in combination, i.e. Bridge of Dee, King George VI Bridge, QEII Bridge, Wellington Road, Hareness Roundabout, Souterhead Roundabout and Charleston Interchange etc. Where

items within a package clearly failed to provide any benefit to network performance they were removed from subsequent evaluation.

The modelling years considered for the test packages were:

- 2008
- 2012 with Aberdeen Western Peripheral Route
- 2027 with Aberdeen Western Peripheral Route

The packages of short (2008), medium (2012) and long term (2027) option testing for application within the S-Paramics model were discussed between Aberdeen City Council, Nestrans and SIAS Ltd to ensure focused testing and agreement prior to undertaking any network evaluation.

The meeting was conducted at St Nicholas House, Aberdeen on 12th July 2007 and this combined with subsequent communication, outlined key short, medium and long term packages for consideration.

It was agreed that the assessment of bus priority and park and ride were appropriate for the medium term. To that end, the preferred site for a 1000 space park and ride facility and any priority measures required to ensure reliable bus journey times, has been considered. For the purpose of this study a desktop review was undertaken to confirm/review the appropriateness of sites (e.g. if adequate access cannot be achieved due to the new proposed layout of the AWPR).

In addition to the traffic model tests it was vitally important to consider other road users including pedestrians and cyclists, as well as alternative travel such as public transport (rail and bus).

8 ANALYSIS AND POTENTIAL SOLUTIONS

The appraisal was conducted based on STAG methodology, considering the agreed planning objectives, the Government's key criteria and implementability criteria. A seven point scale has been used for considering the relative size or scale of a scheme's impact.

Short Term 2008

The short term Do-Minimum model was based on the 2004 Base S-Paramics model infrastructure, with the addition of dualling from Charleston to Souterhead on the A956.

The short term Do-Minimum model represents an assessment year of 2008. Growth was derived from the Aberdeen Sub Area Model (ASAM3b) model and is summarised as follows for the AM and PM peak periods from 2004 to 2008:

- AM: 31475 vehicles, resultant growth of 3.7% (1175 vehicles) to 2008 giving 32650 vehicles
- PM: 40496 vehicles, resultant growth of 3.2% (1292 vehicle) to 2008 giving 41788 vehicles in 2008

Four work packages were agreed by Aberdeen City Council and Nestrans, and assessed using the 2008 Do-Minimum S-Paramics model as the reference case. The summary findings for the work packages are provided in the following sections.

The traffic modelling results found that if nothing is done in the short term, the problems relating to congestion, delay, accessibility, public transport unreliability, HGV routeing, industrial access and egress would all remain and deteriorate. It will not be possible in the short

term to address all of the issues, however, some local network changes, changes to public transport service provision (service frequency and routes) and increased liaison with business communities could assist in limiting the deterioration.

Local junction improvements such as segregated left turn lanes and reviewed signalised junction operation will assist the network operation and are listed below:

1. segregated left turn lane Great Southern Road to King George VI Bridge
2. segregated left turn lane King George VI Bridge to West Tullos Road
3. segregated left turn lane Wellington Road to Hareness Road
4. segregated left turn lane Great Southern Road to Stonehaven Road
5. extended 3 lanes on Wellington Road northbound approach to Hareness Roundabout
6. adjusted traffic signals Souterhead Roundabout
7. adjusted traffic signals Balnagask Road/Somerfield junction

Some benefits will be realised particularly if the above measures are combined with options such as public transport subsidies at peak times, prevention of rat running through residential areas, improved public transport access to East and West Tullos industrial estates and setting up a TMO for the Altens, Tullos and Cove areas to implement green travel plan initiatives.

Medium Term 2012

In order to undertake the medium term testing, a reference case model was developed:

- 2012 Do-Minimum = Short Term Do-Minimum model + Short Term improvements, also includes AWPR and new Charleston and Schoolhill interchanges

Six work packages were agreed by Aberdeen City Council and Nestrans and carried out in the 2012 Do-Minimum S-Paramics model:

- Package 1 – signalise Bridge of Dee and King George VI Bridge
- Package 2 – create separate pedestrian/cycle bridge, remove footway on Bridge of Dee, signalise Hareness Rd/Wellington Rd junction
- Package 3 – one way gyratory using Bridge of Dee and KGVI Bridge
- Package 4 – replace Souterhead Roundabout with signal controlled junction providing bus priority and improved pedestrian/cyclist facilities
- Package 5 – Park and Ride options
- Package 6 - High Occupancy Vehicle (HOV) options on Stonehaven Road

The traffic growth applied to the 2004 base model, using ASAM3b forecasts to form the 2012 future year model matrices (with Aberdeen Western Peripheral Route), can be summarised as follows for the AM and PM peak periods from 2004 to 2012:

- AM: 31475 vehicles, resultant growth of 3.9% (1212 vehicles) to 2012 giving 32687 vehicles
- PM: 40496 vehicles, resultant growth of 4.6% (1873 vehicles) to 2012 giving 42369 vehicles

The traffic modelling results again found that in the medium term at 2012 with the AWPR in place, significant problems would still occur around the industrial areas of Wellington Road, which will provide an obstacle to future development and economic growth.

A revision to infrastructure at the critical Souterhead and Hareness Roundabouts was investigated and showed potential to significantly improve access, while also providing significant benefits to pedestrians and cyclists. At Hareness, land acquisition and a redesign of the junction will provide a significant saving in journey times for vehicles exiting Hareness Road during the PM peak. The provision of traffic signals will significantly enhance the pedestrian/cycle facilities and enable provision for public transport priority. Careful consideration of public transport movements around Abbotswell Crescent and West Tullos Road should further improve network operation and safety.

At Souterhead Roundabout, a complete re-design of access points onto Wellington Road from Langdykes Road, Souterhead Road and Wellington Circle will permit full signalisation through a staggered junction arrangement. As with Hareness, the implementation of full traffic signal control will significantly enhance pedestrian and cycle facilities while providing opportunities to incorporate public transport priority.

An investigation of previous park and ride studies, combined with revised traffic modelling, indicate that Schoolhill would offer the most efficient Park and Ride location to the south of Aberdeen in traffic operation terms. Crucially, installing signalised junctions also provides the opportunity to initiate bus priority which would enhance any Park and Ride facility south of Souterhead.

HOV lanes on Stonehaven Road and HGV lanes on Wellington Road were considered in the medium term. The HOV analysis showed that some benefits could be achieved with a lane on the A90 northbound towards Bridge of Dee. The investigation for HGV crawler lanes on Wellington Road was inconclusive, and found that additional information and understanding of the problems for HGVs on Wellington Road southbound is required.

Additional measures which may aid the network performance in the medium term are: *quality bus partnerships with bus operators, quality bus partnership to Stonehaven and Portlethen, parking review and restrictions where required in Aberdeen city centre, shuttle buses travelling around Aberdeen South and linking to rail, integrated bus services to station and integrated ticketing, linkage to industrial estates from Schoolhill Park and Ride via Cairnrobin and provide infrastructure to give link to Altens, underpass / priority measures to get buses to / from park and ride, provide a link for public transport between Stonehaven Road and Wellington Road.*

Long Term 2027

In order to undertake the long term testing, two reference S-Paramics traffic models were developed:

- 2027 Do-Nothing = Medium Term Do-Minimum model + Short Term (2008) preferred improvements, using 2027 traffic demands
- 2027 Do-Minimum = Medium Term Do-Minimum model + Medium Term (2012) preferred improvements, using 2027 traffic demands

Four packages were agreed by Aberdeen City Council and Nestrans. The packages were:

- Package 1 – widen Bridge of Dee (BOD)
  - (a) with roundabouts at junctions
  - (b) with traffic signals at junctions
- Package 2 – new two-way bridge upstream of Bridge of Dee
- Package 3 – new bridge upstream of Bridge of Dee to form gyratory (BOD one way southbound, new bridge one-way northbound)

- Package 4 – HOV lane on Great Southern Road from Bridge of Dee to King George VI Bridge in both directions

In all packages Leggart Terrace is diverted onto Stonehaven Road and traffic can no longer access the southern roundabout of the Bridge of Dee from Leggart Terrace.

The growth applied to the 2004 base model, using ASAM3b forecasts to form the 2027 future year models (with AWPR), can be summarised as follows for the AM and PM peak periods from 2004 to 2027:

- AM: 31475 vehicles, resultant growth of 11.5% (3612 vehicles) to 2027 giving 35087 vehicles
- PM: 40496 vehicles, resultant growth of 10.5% (4272 vehicles) to 2027 giving 44768 vehicles

The traffic modelling results found that in the long term further problems would develop at the River Dee Bridge crossings, though the improvements introduced in the medium term at Hareness and Souterhead Roundabouts could cater for long term forecasts.

The resolutions to problems at Bridge of Dee in the longer term are limited and most would involve some form of compulsory purchase of land and/or property. The least intrusive solution is a widening of the Bridge of Dee which would maintain the existing alignment of the A90 (T) South Anderson Drive and the A90 (T) Stonehaven Road. Widening the Bridge of Dee, while technically possible, will meet opposition as it is a grade A listed historic monument.

Any solution around Bridge of Dee will require Leggart Terrace to be diverted to tie in with the A90 (Stonehaven Road) at a point south of the existing junction. Otherwise options of either a roundabout or traffic signal control at the southern junction of Bridge of Dee will be unable to cater for the forecast traffic flows.

The long term testing also identified continued problems at King George VI Bridge/Riverside Drive and the option of a larger roundabout considered during the short term tests may require further consideration.

Additional measures which may aid the network performance in the long term are: l*ocal charging schemes (parking, congestion etc.), heavy rail options, Crossrail stations at Altens and Cove, improved coastal route east of A956 for development access, More trains at Portlethen, New pedestrian/cycle footbridge options across the network, additional pedestrian/cycle bridge to connect at RGU over the River Dee, raise height under Wellington Suspension Bridge (Riverside Drive at South College Street), Crossrail with two stops, one at north end of Wellington Road and one at south end, Rail stops at West Tullos and Altens.*

(4) Western Peripheral Route – Locking in the Benefits – Reference was made to Article 6(2) to the Minute of Meeting of the Board of 18th April, 2007, when it was agreed to commission a study to demonstrate the linkages between the Aberdeen Western Peripheral Route and the complementary transport measures included in the Modern Transport System. Faber Maunsell and SIAS had been commissioned to undertake the now-finalised study, and the Executive Summary was appended to the report dated 12th February, 2008, by Rab Dickson which members now had before them; the full report would be available on the NESTRAS website once the final version was completed.

The study concluded that there were a number of schemes and initiatives which could complement the Western Peripheral Route to ensure that its aims were not only achieved but retained into the longer term, including cycling routes, pedestrian crossing facilities and additional bus lanes or high-occupancy vehicle lanes where appropriate, where capacity could be freed up by redirecting traffic from some routes. As the potential measures identified in the study would require to be implemented by the appropriate Council as roads authority, it was proposed that the finalised report be referred to both Councils for further consideration of the individual projects and implementation in line with their Local Transport Strategies.

In discussing the report, Iain Gabriel noted that both Councils needed to cost the projects contained within the study as these may be significant and in this context it was suggested that it should also be referred to the Aberdeen City and Shire Strategic Planning Committee. There was also some discussion of the implications of junctions being regulated by traffic lights and the possible resultant build-up of queuing on slip roads, particularly when children were being taken to school. In response, Derick Murray emphasised that the junctions were being designed to work and that there should be no queues.

The Board agreed:-

(i) to approve the principle of the findings in the Executive Summary of the study;

(ii) to refer the final report to Aberdeen City and Aberdeenshire Councils to consider the identified potential solutions for implementation in line with their Local Transport Strategies and, in addition, to refer the report to the Aberdeen City and Shire Strategic Planning Committee;

(iii) to make appropriate provision for a contribution for the funding of the projects as they were brought forward through the Local Transport Strategy implementation processes; and

(iv) to request the Director to seek clarification from the Aberdeen Western Peripheral Route Team on the extent to which queuing at junctions and slip roads could be a significant possibility.

AWPR Locking in the Benefits

o Purpose of Report

The purpose of this report is to provide the Board with the results of a feasibility study into the potential measures which could be initiated to complement the development of the Aberdeen Western Peripheral Route to ensure that the anticipated benefits are secured and "locked in".

o Background

Transport benefits arising from a new scheme, particularly where additional road space capacity is being provided, can be subject to altering demand patterns which could lessen the benefits in the longer term. For example, where additional capacity is provided on a route, that may make journey times quicker and attract more traffic thereby reducing the benefits.

This vicious cycle of benefits being diminished by changing demands is a consideration which transport modellers find difficult to quantify although it is possible to ensure that benefits are maintained for the long term by ensuring that road space allocations are protected for priority uses. In the case of the AWPR, it has always been argued that the purpose of the route was not just to provide additional road capacity, but as a key to an integrated transport strategy, to provide opportunities for complementary measures many of which could not be implemented without the relief afforded by the route.

A report was considered by the Nestrans Board on 18 April 2007, wherein it was agreed to appoint Faber Maunsell and SIAS, the framework consultants, to undertake this study.

o Conclusions of the Study

The consultants have now concluded their work and produced a finalised study. Copies of the Executive Summary are attached to this report and the full report will be available on the Nestrans website once the final version is available.

The study concludes that there are a number of schemes and initiatives which could complement the AWPR and help to ensure that its aims are not just achieved, but retained into the longer-term. Examples may be cycling routes, pedestrian crossing facilities or additional bus lanes (or High Occupancy Vehicle lanes where appropriate) where capacity is freed up by traffic redirecting from some routes.

o Issues and Next Steps

The principles of the findings within the study are in accordance with the aims of the Regional Transport Strategy. As the potential measures identified within the study would require to be implemented by the relevant Roads Authority, it is recommended that Nestrans refers the finalised report to the two Councils for further consideration of the individual projects therein and implementation as appropriate in line with their Local Transport Strategies.

o Recommendations

It is recommended that the Board:

1. Note and approve the principle of the findings within the attached Executive Summary.

2. Remit the final report to Aberdeen City and Aberdeenshire Councils for further consideration of the identified potential solutions and for implementation in line with their Local Transport Strategies.

3. Make appropriate provision for a contribution to the funding of projects as they are brought forward through the Local Transport Strategy implementation processes.

RDickson/12 February 2008

SIAS transport planners

FABER MAUNSELL | AECOM

1 Executive Summary

Introduction

SIAS Limited and Faber Maunsell were commissioned by Nestrans, Aberdeen City and Shire to undertake a "Locking in the Benefits" study in relation to the Aberdeen Western Peripheral Route (AWPR). Aberdeenshire Council Transportation and Infrastructure Service co-ordinated the project on behalf of the client, Nestrans, the Regional Transport partnership for Aberdeen City and Shire.

The study objective was to update the previous work, which has demonstrated the potential benefits (transport, economy, environment, safety, integration health, accessibility and social inclusion) of the route and how the AWPR supports the Regional Transport Strategy (RTS), Local Transport Strategies (LTS) as well as the National Transport Strategy (NTS). The study summarises the current linkages between the various projects being promoted across the City and Shire, which are only achievable with the AWPR in place and identifies other transport initiatives that can be progressed to further 'lock in' the benefits provided by the AWPR to achieve a more sustainable transport network throughout the area.

The AWPR acts as both a bypass for strategic traffic and a distributor road for local journeys. In doing so it provides links between existing and proposed Park and Ride sites and connects employment centres and residential areas around the city with each other, the proposed rail freight transfer sites and Aberdeen Airport.

Currently the A90 goes through Aberdeen and acts as a local distributor as well as the main strategic route connecting the north and west of the region with the south and is crossed by a number of radial routes. The large volumes of traffic making these cross movements leads to significant congestion, slow and unreliable journey times across the city and high levels of community severance particularly for pedestrians. These access problems are being addressed by the AWPR and will substantially improve cross-city and radial journeys enabling better access to key industrial and business locations and to the airport as well as contributing to other objectives.

Review of Policy Documents

The NTS was published in December 2006 and reaffirms the Scottish Government's national objectives for transport and sets out how it proposes to achieve these over the period to 2025. In so doing, the NTS establishes three strategic outcomes for the NTS to deliver, to:

- Improve journey times and connections
- Reduce emissions
- Improve quality, accessibility and affordability

In this study, measures are considered which provide the opportunity to implement complementary initiatives to ensure that the benefits of the AWPR and supporting schemes link with these national transport objectives and in turn link with regional objectives for transport.

The AWPR was identified as a key element of an integrated transport system for the North East of Scotland, following studies carried out by Nestrans. The overall proposals are called the Modern Transport System (MTS) which is a 14 strand integrated strategy for improving transport in the region up to 2011 and includes a range of pedestrian, cycle and public

transport improvements as well as the AWPR. The RTS has been developed using the MTS strategy as a base, including the AWPR and sets out the challenges facing Aberdeen City and Shire over the next fifteen years and how these will be addressed.

Both Aberdeenshire and Aberdeen City Councils developed their initial Local Transport Strategies in December 2000 and together they formed the basis for the MTS. Both Councils have continued to develop their Local Transport Strategies on this foundation in more recent years.

The purpose of locking in benefits is to meet the objectives and capture all the benefits of the AWPR. A policy review has shown how locking in the benefits integrates with local, regional and national strategy objectives, particularly in relation to ability for integration, for choice of transport modes and health benefits. More public transport priority and further development of schemes to promote more efficient and effective travel will go further and enhance the AWPR benefits and address some of the more pressing objectives identified in relation to the environment. The integration and environmental benefits from the AWPR can be captured and sustained with these forms of complementary measures made possible by reductions in traffic flow on key existing routes and accompanied by a release of major benefits to the economy, safety and accessibility.

Review of Existing Studies and Data

There have been a number of studies that have been undertaken and that are currently on going involving transport issues in and around the North East. These studies have been reviewed as part of this study to bring together the wealth of investigation and transport planning information and data that is available on individual projects. The studies and issues that have largely stemmed from regional and local transport strategies include:

- Haudagain Roundabout Junction Improvements
- Access from the North – Third Don Crossing
- City Centre Study
- Access from the South Study
- Westhill Traffic Study
- Dyce Area Needs Study
- Airport Access Strategy
- Air Quality Reports
- New and existing public Transport Routes
- Freight
- Core Paths Studies
- Park and Ride Interchanges
- Carbon Studies

One of the outcomes from the AWPR traffic model work is that future traffic flows are forecast on the key road network due to the introduction of the new Aberdeen Western Peripheral Route and Stonehaven Fastlink. A review of the Aberdeen Sub-Area Model (ASAM) plots showing peak hour reductions in traffic volumes across the network was undertaken. From this analysis and the knowledge gained from previous studies, the RTS and LTSs, eleven key corridors were identified for investigation across the region.

The pattern that emerges on principal routes is one that shows North Anderson Drive and the A90 from the south experiencing the most benefits in reduced traffic volume. This is accompanied by journey time benefits on other routes including; the A90 in the northern area

of Aberdeen, the Parkway, the A96 by the Airport and Stoneywood Road Dyce. Localised benefits would be found on other corridors including the A93 and A944.

Rural routes along the B979 that are used as unofficial by-passes, particularly from Stonehaven to Maryculter Bridge and from Peterculter to Westhill, shall see reductions in traffic flow when the AWPR is in place. For this corridor, more importantly than travel time savings in these locations, is the ability to use these routes for local and leisure trips by walking, cycling and for accessing local services. Reduction in traffic volume will provide relief on this route which will promote local amenity.

Suburban areas and areas adjacent to key corridors in Aberdeen City will benefit from journey time reductions from the North, the South and on Anderson Drive. The need and temptation to rat run to avoid delays on key corridors shall be reduced. Reduced journey times on the key corridors will attract rat runners back to appropriate routes and relieve local communities that have been impacted by inappropriate traffic movements in residential and community areas.

Benefits and Opportunities

A desktop study was undertaken on each of the eleven identified routes with the findings identified on Ordnance Survey (OS) tiled plans. The study focused on making optimum use of the existing kerbside space and road features including critical links and junctions following the implementation of the AWPR. Acknowledgement has been taken of existing facilities for pedestrians, cyclists and public transport users, and any potential upgrades that can be incorporated into these have been highlighted. The existence and location of existing facilities have been taken into account in determining appropriate measures that could be implemented on each route as a result of the AWPR construction.

The provision of high quality links requires a range of improvement measure that meets the needs of a broad range of transport users. Eleven routes were identified and the opportunities highlighted have taken account of all road users and the measures include the following:

- Bus priority;
- Changes to existing priorities
- Junction improvements
- Cycle priority and opportunities to link up existing routes
- Consideration of the potential for bus/High Occupancy Vehicle (HOV) or HGV lanes
- Interchange opportunities;
- Park and Ride opportunities;
- Corridor and traffic management measures
- Opportunities to improve local village centres

An evaluation framework has been developed to assist in the future assessment process and determines the short, medium and long term deliverables as a result of the implementation of the AWPR. These were also further categorised by routes with the highest priority in relation to traffic reduction benefits.

Benefits Options

In order to identify the options that are both implementable and will bring benefit, a more detailed study has been undertaken with regard to how applicable each intervention is to that particular route. Preliminary investigation has also been undertaken into how each option could be introduced in terms of timescales.

Following the identification of the potential options that could be implemented, on each of the routes, an assessment was undertaken of the implementability of the various potential schemes on each route. Further study was undertaken regarding the impact of journey times on the network as a result of the reduction in traffic from the opening of the AWPR and Stonehaven Fastlink. Potential schemes have been identified as being implementable in the short, medium and long term. The benefits and disbenefits in terms of environment, safety, economy, integration and accessibility and social inclusion have been assessed for each of the proposed options on each route in order to determine the applicability of the option, and where the benefits will lie.

Carbon benefits are likely to be accrued from the implementation of measures to encourage travel by walking, cycling and public transport. Encouragement of car sharing by 'park and ride or park and choose' sites and car sharing priority schemes will also reduce the carbon emissions from private transport.

Overall this study has identified a number of pedestrian, cycling and public transport improvement and implementation schemes that could take benefit from the introduction of the AWPR. These schemes now require further detailed investigation, planning and design within a time frame relative to the AWPR to achieve the best possible mode shift and greatest carbon benefit.

Journey times will be enhanced by the potential interventions to encourage more sustainable transport. The principle is clear that if more people switch to walking, cycling or using public transport in the most congested part of Aberdeen then journey times will decrease because of the more efficient use of the transport system available.

The main benefits to air quality are that the AWPR will improve air quality in Aberdeen city centre by reducing emissions of noxious gases. This is achieved by taking traffic away from slow-moving city streets and cutting the build up at junctions. Traffic which moves on free-flowing roads generates lower emissions. Improvements in air quality, along with reductions in traffic volume, make pedestrian and cycle travel around Aberdeen easier and more enjoyable. Plans to pedestrianise Union Street will also be greatly assisted by the AWPR by removing strategic through traffic from the city centre.

The key economic benefits of the AWPR include that journey times and costs to and from the North East will be greatly reduced. Current and future industrial estates, existing road networks and Aberdeen Airport will all enjoy easy access to the route. Construction of the route will itself bring employment opportunities – engineers, road workers, researchers and other experts will be required to build it. The route will reduce congestion at key bottlenecks, such as Bridge of Dee, Bridge of Don and the Haudagain Roundabout on the A96. Access to the city centre will be greatly improved for residents, shoppers, tourists and businesses, as will the movement of strategic traffic and goods heading to markets in the South and North.

Optimising the Benefits Summary

This study has shown that the pattern of journey time benefits offered by the AWPR provides the opportunity to provide complementary schemes to:

- afford greater priority at North Anderson Drive to east-west lateral movements that cater for public transport movements

- provide bus priority or trial bus/HOV routes from the north and south (these should be additional to existing bus lanes, rather than in place of)
- integrate measures with Park and Ride sites
- improve the environment of local rural roads for more walking and cycling
- improve the environment of suburban streets for more walking and cycling
- improve the air quality of city centre streets for the health of residents, employees and visitors
- increased journey times will also improve economic competitiveness and costs of business and freight
- aid the realisation of the aims, objectives and targets of local, regional and national transport strategies

The study has shown that the benefits of the AWPR fully accord with national, regional and local transport policy objectives. It has been found that complementary measures are required to capture and where possible improve on these benefits. Locking in the benefits on key corridors will involve developing and implementing a series of integrated measures to make best use of the improvements to the level of service brought about by a pattern of traffic relief. It is clear that the AWPR will offer a window of opportunity to improve transport connections and the quality of life to a great many people in the north east and this study has shown that there is potential to achieve this in a sustainable way on eleven key corridor routes.

It is suggested that the constituent councils consider the short term measures that can be put in place when the AWPR opens by preparing for their inclusion on day one. Measures such as the following high priority options,

- Route 1, A90 from Stonehaven to Bridge of Dee
  - Joining up of existing parallel cycle route
  - Linking up wider off road cycle network

- Route 3, Anderson Drive
  - Changes to the existing signal timings to allow a greater east-west priority
  - Introduction of parallel cycle lanes and improvements to junctions for cyclists.

- Route 11, B979
  - Cycling and walking improvements

Other routes are also potentially suitable for similar short term improvements. These short term measures will allow the benefits of the AWPR to be recognised and “locked in” from day one of opening. However, there are a number of individual studies that should be carried out in the next two years.

In addition to these short term measures, there are a number of longer term benefit interventions identified in the report which could be analysed and where practical implemented with the timescales outlined in this report. These could include some of the following high priority options:

- Route 1, A90 from Stonehaven to Bridge of Dee
  - Provision of a bus or bus/ HOV lane from the Charleston Interchange to the Bridge of Dee
  - Providing an enhanced junction at Muchalls to provide an adequate space for right turning buses

- Route 3, Anderson Drive
  - Implement a new circumferential bus route that runs the entire length of Anderson Drive
  - Replace existing roundabout junctions with signals or signalise roundabouts in order to greater east-west priority
  - Introduce new and additional pedestrian crossings at various points along the route

- Route 11, B979
  - Provision of cycle lane
  - Pedestrian phasing at or near the A93/ B979 junction on the B979

Additional longer term options for medium priority routes include:

- Route 2, Queen Elizabeth 2 Bridge to Charleston
  - Junction improvements identified in the Aberdeen Access from the South study

- Route 4, Holburn junction to Peterculter
  - Bus or bus/ HOV lane eastbound on this route with junction priority
  - Cycle route following the route of the bus or bus/HOV lane
  - Urban Streetscape Study in Peterculter to lock in benefits

- Route 5, Mason Lodge to Hutcheon Street
  - Continuous bus or bus/ HOV lane with junction priority from the bus gate on the Lang Stracht to Hutcheon Street
  - Alter signalised roundabout timings
  - Cycle route following the route of the bus or bus/ HOV lane
  - Pedestrian crossing on A944 at Kingswells roundabout
  - Study on impact of Westhill

- Route 6, Switchback to Holburn Street
  - Extend existing bus lane from Switchback junction to Anderson Drive (eastbound journeys only) and consider converting bus lane to bus/ HOV lane

- Route 7, A96 Kinellar Roundabout to St Machar Drive
  - Bus or bus/ HOV lane with junction priority along A96
  - Bus lane along Dyce Drive from A96 to Airport
  - Cycle lane along A96 and Dyce Drive to Kirkhill Industrial Estate
  - Junction improvements at A96/ B979 and elsewhere as determined

- Route 8, Stoneywood Road from AWPR to Bucksburn
  - Bus or bus/ HOV lane along the route where possible, with bus priority where a full lane is not possible
  - Additional bus priority on Victoria Street
  - New cycle provision
  - Convert existing advisory lanes on Riverview Drive to mandatory

- Route 9, the Parkway
  - Provision of segregated cycle and pedestrian lane
  - Improvement of junctions for right turning vehicles
  - Further pedestrian improvements

- Route 10, A90 Ellon Road, Balmedie to St Machar Drive
  - Bus or bus/HOV lane with junction priority to connect with the existing provision on King Street
  - Pedestrian crossing on Ellon Road

The above options offer the most realistic chance to 'lock in' the benefits of the AWPR across the area on all the major corridors accessing the city, and on cross country routes. Proposals have been derived for all modes of transport, allowing the benefits of the AWPR to be afforded to all residents in the area for all modes of transport. A number of reports and studies will be required in the next few years in order to fully optimise the opportunities identified by the construction of the Aberdeen Western Peripheral Route, and create a modern and integrated transport system, for the benefit of all the North East.