



ABERDEEN WESTERN PERIPHERAL ROUTE

**PROJECT DEVELOPMENT 2005 - 2006
CONSOLIDATION ASSESSMENT REPORT**

November 2006

1. Purpose

1.1 The purpose of this report is to bring together into one document in summary the main stages of development of the Aberdeen Western Peripheral Route since the public consultation in spring 2005 up until the start of the formal statutory consultation process in December 2006. A number of key decisions are described however the technical information referred to in reaching those decisions is referenced and is available elsewhere. In particular the report outlines the reasons for adopting the Milltimber Brae Route and Fastlink, the adoption of the route through the International School at Milltimber and the adoption of a dual carriageway cross section for the Fastlink. Consideration of requests for consideration of a cut and cover tunnel at Milltimber, the Eastern Peripheral Route and the Douglas Stewart Report are also described.

AWPR Scheme Benefits

The AWPR is one of the Scottish Executive's top priority transport projects which will bring major benefits to Aberdeen and North East Scotland. These are:

- a halving of journey times across the City at busy times;
- improved access to and around Aberdeen and to the industrial areas in the City and the areas to the north and west;
- a reduction in traffic, including long distance heavy goods vehicles, on the existing congested A90 route through and to the south of Aberdeen;
- taking traffic off the city streets and local roads, reducing noise and air pollution and creating opportunities to improve the general amenity of the city through, for example, the pedestrianisation in the City Centre;
- provision of access to existing and planned park and ride and rail facilities around the outskirts of the City, encouraging people out of their cars and onto public transport;
- improved access to Aberdeen Airport, at which passenger numbers are predicted to double over the next 25 years;
- increased opportunities to maximise bus lanes and other public transport priority measures; and
- improved road safety over a wide area through the reduction of traffic on local roads.

2. History and development of the project

2.1 The early development of the AWPR was carried out in two distinct stages. The Southern and Western Leg, from the A90 south of Aberdeen to the A96 Inverurie Road and the Northern Leg, from the A96 Inverurie Road to the A90 north of Aberdeen. In the early 1990s, development work concentrated on the Southern and Western Leg, between the A90 Stonehaven Road and the A96 Inverurie Road, in order to select a 'preferred corridor'. This involved the design and assessment of route options and extensive public consultation. In 1996, Grampian Regional Council recommended to the successor authorities, Aberdeen City Council and Aberdeenshire Council, a 'preferred corridor' for the Southern and Western Leg. This became known as the Murtle Route.

2.2 Both Local Authorities subsequently endorsed the Regional Council's recommendation. In 2001, both Councils started designing and assessing options for the Northern Leg, between the A96 Inverurie Road and the A90 Ellon Road. This assessment was the subject of public consultation in 2002, following which the Councils selected a 'preferred corridor' for the Northern Leg in 2002. In 2002 Aberdeen City Council also presented a 15,000-signature petition from local residents in support of the provision of an AWPR to the Scottish Parliament.

2.3 In March 2003 the Scottish Executive, in recognition of the strategic importance of the AWPR to the economy of the North East, announced that it would be promoted as a trunk road in partnership with Aberdeenshire and Aberdeen City Councils. The Scottish Executive agreed to meet most of the cost reflecting the strategic role of the road to Scotland as a whole. Aberdeen City and Aberdeenshire Councils would fund the remainder of the cost split equally between them, reflecting the importance of the AWPR to the local area.

2.4 From March 2003 the Managing Agent, Aberdeen City Council, and its project consultants, the Babbie Group, in consultation with statutory bodies and landowners, developed the design and assessment. This work took into account the impacts on the environment, communities and people living in the vicinity of the route, as well as engineering issues, traffic and economic influences. The work was used to identify an optimum alignment within the inherited corridor, minimising the impact as far as possible.

2.5 In 2004 Given the scale of the sensitivity of the River Dee crossing area, the then, Minister for Transport, instructed that the work undertaken in the 1990s should be reviewed and the decision to proceed with their preferred route be reviewed. This review involved looking at the process followed then; the decision reached with the information then available; identifying changes, both physical and legislative, and assessing 4 alternative route options in addition to the inherited corridor.

2.6 These 5 corridors; Murtle, Pitfodels, Milltimber Brae, Peterculter/Charleston and Peterculter/Stonehaven were the subject of a major informal public consultation exercise in Spring 2005. This gave residents, business and other interested parties the chance to have their say. The consultation took the form of a series of public exhibitions in communities situated close to the potential routes which was run in a roadshow format and staffed by engineers from the AWPR project. Exhibitions took place at locations throughout the north east between March and April. More than 7,600

responses were received by the Scottish Executive team from this informal consultation. It must be stressed that this consultation was informal and was not a referendum on the proposals. This consultation was stated to be open and that no options were ruled in or out. The report from the public consultation can be downloaded from the project website.

2.7 During the summer and autumn of 2005 consideration was given to the feedback received from the public consultation and other correspondence and to the reports into the impact of the Murtle Route on the Camphill Newton Dee and Murtle campuses prepared by Professor James Hogg and Dr David May. The relative performances of each of the route options as assessed using the Scottish Transport Appraisal Guidance (STAG) was also considered. Prior to making a final decision on the preferred route a report was commissioned by the Scottish Executive from MVA Consultants to examine the relative performance and benefits of the Murtle, Milltimber and a Milltimber Brae Hybrid option. This latter scheme combined two of the options presented at the public consultation in the spring of 2005 – the Peterculter/Stonehaven and Milltimber Brae Routes. These proposals were developed in discussion between Scottish Executive officials and the Minister in the period leading up to the decision.

2.8 The scheme objectives which are listed below were also re-examined as part of this process. The AWPR performs a local and a strategic function and this is reflected in the management and cost-sharing arrangements for the scheme set out in a Memorandum of Understanding, signed in 2003 between the Scottish Executive and Aberdeen City and Aberdeenshire Councils. The Memorandum of Understanding included provision for a contribution from the two partner local authorities in recognition of the costs of providing junctions with local roads and the local benefits that would accrue. 81% of these costs are to be met by the Scottish Executive with 9.5% contributions from Aberdeen and Aberdeenshire Councils. The scheme inherited from the Local Authorities, did not reflect completely the nature and strategic objectives of the trunk road network.

Scheme Objectives

1. Improve access to an around Aberdeen to improve transport efficiency and support the industrial areas in the City and the area to the north and west of Aberdeen (Economy and Employment).
2. Provide traffic relief (including the removal of long distance heavy goods vehicle traffic) on the existing congested A90 route through and to the south of Aberdeen (Environment and Accessibility).
3. Reduce traffic on urban radial routes reducing noise and air pollution and creating opportunities for pedestrianisation in the City Centre (Environment and Accessibility).
4. Provide access to existing and planned park and ride and rail facilities around the outskirts of the City encouraging modal shift (Integration).
5. Increase opportunities to maximise bus lanes and other public transport priority measures (Integration).
6. Improve road safety over a wide area through the reduction of traffic on local roads (Safety).

2.9 None of the route 2005 options on their own fully addressed the strategic and local transport needs of the North East. The chosen combination best addresses the strategic problems of getting traffic round Aberdeen quickly and avoiding the growing hold ups on the A90 while at the same time reducing traffic in the city centre.

2.10 Compared to the Murtle option the Milltimber Brae and Fastlink route offers 20% higher user benefits in terms of reduced travel time and vehicle costs. It offers greater safety benefits (8 accidents less per year). It performs better on air quality, producing less greenhouse gas emissions than the Murtle Route and has a very high benefit to cost ratio of around 5, which is considered extremely good in the context of national road projects.

2.11 The decision to adopt the Milltimber Brae route and Fastlink was announced by the Minister for Transport on 1 December 2005. An indicative corridor map was published combining the original alignment of the Milltimber Brae Route with the Stonehaven Spur of the Peterculter/Stonehaven Routes.

3. The Stonehaven Fastlink

3.1 The inclusion of the Fastlink improves the overall efficiency of the scheme allowing long distance strategic traffic to get round the city more quickly and reducing traffic using the busiest stretch of the A90 between Stonehaven and Aberdeen. Maintaining the existing A90 south of Aberdeen and keeping traffic moving is becoming increasingly difficult. The proposed fast link will be built largely off-line and will involve little traffic management and disruption during its construction.

3.2 The terms of the Memorandum of Understanding referred only to a city bypass and the contribution to Scottish Ministers costs recognised the role of the scheme in supporting the wider road network and transport and development aspirations of the City and Shire Councils. The Fastlink will only have junctions with the A90 at Stonehaven and the AWPR itself and, as such, the benefits will principally be to the trunk road network. In recognition of the strategic nature of this leg it has been agreed that the costs will be met wholly by the Executive.

3.3 The announcement on 1 December 2005 indicated that the Fastlink would comprise a Wide Single Carriageway with alternating overtaking sections (a so called WS2+1 arrangement). The gradients on the climb north from Stonehaven and south from the River Dee valley would require climbing lanes to allow faster vehicles to overtake slow moving vehicles. Alternating overtaking sections would be provided in the central section past Netherley.

3.4 Detailed traffic modelling carried out since the 1 December 2005 announcement indicated however, that traffic volumes in the opening year will be close to the threshold in the Design Manual for Roads and Bridges ⁽¹⁾ guidance justifying a dual carriageway. In recognition of this and the operational benefits that will result during major maintenance or as a result of accidents on the existing A90 between Stonehaven and Aberdeen it was decided to progress the design of the Fastlink as a dual-carriageway.

3.5 Indications are that the AWPR will attract additional traffic if the benefits of the project are locked in. Such measures could include giving priority to the radial routes at

their junctions with Anderson Drive and reallocating road space to public transport and pedestrians. Such measures will be developed as part of the Regional Transport Strategy being developed by NESTRANS.

3.6 The Memorandum of Understanding noted at paragraph 2.8 includes a provision that all of the junctions along the route of the AWPR would be grade separated. Traffic flow modelling indicates that the principal traffic movements will be from Stonehaven to and from the north and Charleston to and from the north with only limited movement to and from Stonehaven and Charleston via the Fastlink and AWPR. This would suggest a grade separated junction with north facing slip roads only. To maximise the operational benefits of the Fastlink a roundabout junction is planned at Cleanhill to allow all ways movements. Traffic modelling suggests that a roundabout will be adequate for the expected traffic volumes and this will impose significantly less environmental impact than a grade separated junction. This is described further in the reports referenced in section 4.

4. Route alignment development at Milltimber

4.1 From early January 2006 the project team carried out extensive survey and design development work to refine the alignment of the AWPR within the corridor announced on 1 December 2005. This work is described in some detail in the Development of the Preferred Route Initial and Final Stage Assessment Reports which can be downloaded separately from the project website. This work culminated in an announcement of the finalised preferred alignment on 02 May 2006.

4.2 When the announcement of the choice of the Milltimber Brae and Fastlink was made on 1 December 2005 an indicative plan was published which showed the AWPR following a route through the private dwellings houses to the east of the International School of Aberdeen. This alignment was based upon the work carried out for the spring 2005 public consultations. Immediately following the announcement discussions were held with residents, the International School, Kippie Lodge, Albyn School and Camphill Trust to help inform the developing design.

4.3 Although in a cutting the AWPR would have had a significant impact on the school during construction and operation. The detailed design then being carried out also indicated that the AWPR would require to pass below the former Deeside Railway Line. It is a project requirement that the railway line must be capable of re-opening at a future date. The original concept for the AWPR/A93 junction was for a "diamond" grade-separated junction with north and south facing slip roads. South facing slip roads and an AWPR passing below the former Deeside Railway would require a long bridge. Consideration was given to locating a junction to the north of the site of the International School linked to the A93 by a short connecting road. This concept allowed alternative alignments to be considered for the main carriageway of the AWPR. A route further west through the site of the International School has the advantage that it reduces the number of residential properties requiring demolition, it increases the distance between the AWPR and remaining properties which allows the implementation of further noise and landscape mitigation. The need to relocate the school, which would be subject to significant impact during construction and operation, is also unequivocal. A decision to adopt a route through the School was therefore taken and Transport Scotland are

working with the School and their advisors to ensure a successful relocation prior to main construction starting.

4.4 Representations were received by the AWPR Managing Agent and Transport Scotland suggesting that the route of the AWPR through Milltimber should have followed a more westerly course through the grounds of Camphill School Milltimber, Kippie Lodge and/or Albyn School playing fields. Such an option would have resulted in fewer residential properties requiring demolition. This suggestion was analysed by the AWPR Managing Agent and Consultant however this was ruled out for several reasons. Firstly the horizontal alignment required would have been below the required standards in the Design Manual for Roads and Bridges. It is especially important to ensure the maximum possible standards in the vicinity of a junction to ensure the safety of road users. Secondly such an option would have required compensating Kippie Lodge and relocation would be a complex operation. The alignment chosen and described in paragraph 4.2 allows the implementation of mitigation between the AWPR and Camphill School. An alignment farther west through the grounds of Camphill School and Kippie Lodge as suggested would result in a much more significant impact on Camphill and a significant residual impact on the International School. For these reasons a route farther west was not taken any further.

5. Other design and alignment considerations

5.1 During the design development a number of other representations were received by Transport Scotland and the AWPR Managing Agent. The following section describes in outline the analysis work carried out and the conclusions reached.

5.2 Milltimber Cut and Cover Tunnel

5.2.1 Consideration was requested to the incorporation of a cut and cover tunnel at Milltimber as part of the scheme proposals. This was reviewed by the project Consultant.

5.2.2 The maximum potential length of a tunnel is considered to be some 600m. The southern location is determined by the depth of cutting at which sufficient headroom can be achieved to enable a tunnel to be formed. The northern location is determined by the requirement to provide a vehicle cross-over facility in advance of the tunnel while enabling traffic using that facility to continue to use Milltimber Junction.

5.2.3 A range of technical and other issues arise when considering a tunnel at this location, including:

- The current main line gradient is above that recommended for a tunnel. Lowering this gradient will increase costs by taking the excavation into rock, and will have other impacts, such as either increasing the depth of diversion formed for the two major aqueducts in this area or requiring the tunnel itself to be sufficiently lowered to retain these in-situ. In addition, the lowering of the main carriageway would require an associated lowering of the slip roads, which would significantly increase the impact on Kippie Lodge golf course that has effectively been designed out of the current scheme proposals.

- As the proposed tunnel is to be formed using cut and cover techniques it is not considered to offer any construction advantage, as all demolition and earthworks will still have to take place. In fact it may be considered to increase construction impacts, as the length of time to complete the works in this area will increase considerably due to the additional structural works required, and the overall scale of the works will increase due to additional excavation being required associated with lowering of the main line alignment.
- While the tunnel would be expected to give some improvement to residual noise levels, it should be noted that as the road would in any case be in a significant cutting, the extent of further mitigation would be limited.
- Again, while the tunnel would be expected to give some improvement to residual air quality levels, it should be noted that these are not expected to be at a level in any case where there would be concerns over air quality, and therefore any improvement provides no real benefit. There are also some concerns about degraded air quality in tunnel portal areas, and further assessment would be required as to whether this would be of specific concern at the southern portal which would be close to a residential area.
- The main advantage that the tunnel would provide is the opportunity to landscape the area above the tunnel and significantly reduce the visual impact of the scheme. This would also create the opportunity to use the area above the tunnel for habitat recreation, potentially offering some ecological benefit.

5.2.4. The basic cost of forming the tunnel is estimated as £85m per kilometre, before consideration of contingencies. Given the level of uncertainty, contingencies have been applied at 50%, which results in an overall construction cost of £125m per kilometre. For a tunnel 600m in length the rate of £125m per kilometre would equate to a construction cost of £75m. Offset against this cost would be a reduction in the scheme for works that were incorporated within that cost, such as excavation works and provision of a bridge for the A93 over the AWPR. These offset works are estimated at some £10m, giving an overall construction cost for a 600m long tunnel of £65m. When preparation, inflation and other costs are added the scheme cost estimate for a 600m long tunnel is £85m. In addition to construction costs, the tunnel would also entail significant additional whole-life costs associated with tunnel operation e.g. ventilation and lighting.

5.2.5 On the basis of the limited environmental benefits expected and the high capital and operational costs associated with the proposed tunnel, this has not been taken forward.

5.3 Eastern Peripheral Route

5.3.1 The AWPR project team continue to receive representations for the consideration of an Eastern Peripheral route which would require a tunnel under Aberdeen Harbour. This proposal was analysed using the principles in the Scottish Transport Appraisal Guidance (STAG) and the summary report can be downloaded from the project website.

5.3.2 No further consideration was given to this suggestion for two principal reasons. The first would be the prohibitive cost estimated at £600m. The second was the extremely poor fit to the project objectives which are intended in part to encourage modal shift through linking the western radial routes and the proposed park and ride sites around the western periphery of the city.

5.4 Douglas Stewart Report

5.4.1 On 20 March 2006 Mr Douglas Stewart submitted a report entitled 'Aberdeen Western Peripheral Route, Fit For Purpose?' to Transport Scotland. The report refers to alternative options for both the Murtle Route and the Milltimber Brae Route and Stonehaven Fastlink. The report states that the alternative options presented are better and that the project team were making 'a fundamental design error'.

5.4.2 Given the widespread publicity received for this report it was considered by the AWPR Managing Agent. It was concluded that a large part of the submitted report is built upon the incorrect assumption that the project team could not get the Charleston junction for the original Murtle option to work. A working traffic solution has however been demonstrated in a micro-simulation presentation. Consideration of the proposed new 'Improved Pitfodels Route' concluded that it does not have all the benefits claimed when compared with the previous Pitfodels Route option, nor does it satisfy some of the strategic Trunk Road and AWPR objectives. No further consideration has been given to this report. The Managing Agent's report can be downloaded from the project website.

6. Next steps

6.1 It is intended to publish, in December 2006, draft Roads Orders and the Environmental Statement. This document will set out the development work, describe alternative routes considered and rejected and the impact of the road, along with proposed mitigation measures. A series of roadshows will accompany the publication of the orders in early 2007. The remaining side road and compulsory purchase orders are expected to be ready for publication by mid-2007.

6.2 The publication of the draft orders will allow members of the public to formally lodge objections and make representations on the proposals. It is likely, given the scale of the scheme, that these objections will be heard in a Public Local Inquiry towards the end of 2007. If so, then a Reporter will be appointed to consider the objections and to make recommendations. Scottish Ministers will then consider any recommendations before deciding on whether or not to proceed with the scheme as proposed.

7. References

The following technical reports and documents referred to throughout this report can be downloaded from the project website www.awpr.co.uk.

- Public Consultation Spring 2005
- Report on Public Consultation (March – April 2005).
- STAG assessments

- An evaluation of the impact of the Aberdeen Western Peripheral Route (Murtle Route) on the Camphill Communities in Bielside, Aberdeen: Psychological and Policy Perspectives – Professor James Hogg
- An Examination of Local Authority Attitudes to the Camphill-Rudolf Steiner School, Bielside and the Aberdeen Western Peripheral Road (Murtle Route) – Dr David May
- AWPR Scheme Testing Report - MVA Consultants
- Consideration Paper of the report – “Aberdeen Western Peripheral Route Fit For Purpose” - Submitted by Mr Douglas L Stewart
- Report on Cut and Cover Tunnel at Milltimber – Jacobs
- Initial alignment assessment report
- Final alignment assessment report

⁽¹⁾ TA 46/97 – “Traffic flow ranges for use in the assessment of new rural roads” – Design Manual For Roads and Bridges

Working in partnership

