

# **St. Athan Northern Access Road**

## **Eglwys Brewis Road Options Report**

**Prepared for:  
Welsh Government**

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## Quality Information

Document name	Ref	Prepared for	Prepared by	Date	Approved by
Eglwys Brewis Road Options Report	60509148 / CFRP0001	Welsh Government	Rhys Mander	March 2017	Ted Evans

## Revision History

Rev	Revision date	Details	Name	Position
0	December 2016	Original Issue	Rhys Mander	Associate
1	January 2017	Updated following comments received	Rhys Mander	Associate
2	March 2017	Updated following comments received	Rhys Mander	Associate

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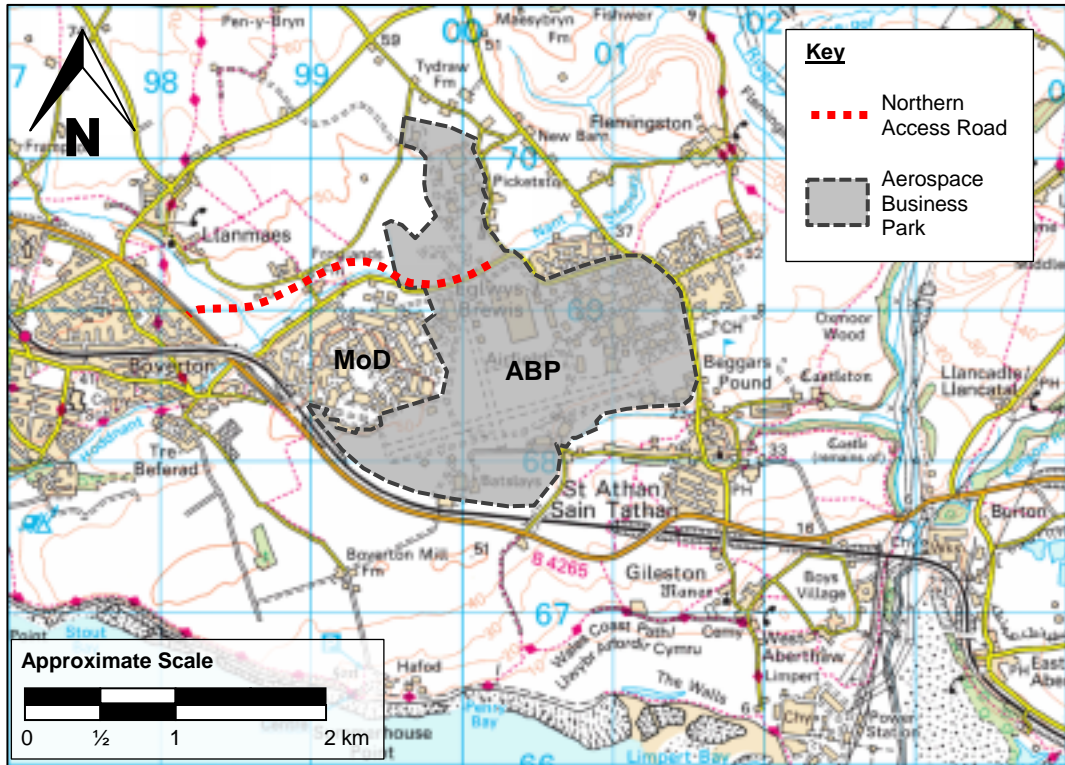
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**1. INTRODUCTION**

Aecom Ltd. has been appointed by the Welsh Government to design a new access road to serve the Aerospace Business Park in St. Athan. The proposed new road, which is referred to as the Northern Access Road, will provide a link from the B4265 near Llantwit Major in the west to Eglwys Brewis Road in Picketston in the east, crossing land currently used for agricultural purposes as shown in **Figure 1**.



**Figure 1 – Location Plan**

The route of the Northern Access Road was determined in 2009 under previous planning permissions relating to the expansion of the existing Aerospace Business Park and a proposed Defence Technical Collage. The Defence Technical College is no longer proposed, therefore the Welsh Government has instructed Aecom to review the original route options study to determine whether or not the Northern Access Road remains the preferred option. This report provides a summary of that review.

**2. BACKGROUND**

**2.1 Project History**

Proposals for major development at St. Athan received outline planning permission in 2009 for a mixed-use, regeneration-led scheme, involving substantial new development of the existing site and the adjoining land. The purpose was to provide a Defence Technical College for the Ministry of Defence (MoD) and an expanded Aerospace Business Park for the Welsh Government, whilst part of the site, West Camp, was to remain as an operational military base.

These developments required a new access road off the B4265, referred to as the Northern Access Road. The projects received outline planning permissions in December 2009 as part of which detailed permission was granted for the Northern Access Road.

The Defence Technical College did not proceed and the planning permissions have since expired. Nevertheless, the Welsh Government remains committed to the Aerospace Business Park and the Northern Access Road is considered essential in order to deliver the economic and social benefits associated with the Cardiff Airport and St. Athan Enterprise Zone.

## 2.2 Purpose of the Northern Access Road

The Northern Access Road will serve existing and proposed development at St. Athan including:

- The Aerospace Business Park, which occupies a large part of the former RAF camp, including the operational runway. The business park currently caters for 200 existing jobs. The emerging masterplan for the site indicates that the Aerospace Business Park has capacity for up to 3,000 jobs if the site is developed to its full potential;
- The proposed Aston Martin car manufacturing facility, which will occupy the existing super hangar building on the Aerospace Business Park. The factory is expected to be fully operational by 2019 and will provide 700 new jobs; and
- Proposed residential developments allocated in the Vale of Glamorgan Council's emerging Local Development Plan (LDP) on land lying south of the proposed Northern Access Road and between it and Eglwys Brewis Road.

The Northern Access Road will not serve the MoD camp at St Athan, which will continue to be accessed via the existing Main Gate off the B4265.

## 2.3 The Need for Improved Access

It is considered essential that the Aerospace Business Park is accessed via a high quality link to enable, and to help attract, economic investment in the Cardiff Airport and St. Athan Enterprise Zone. The proposed redevelopment of the St. Athan site will generate increased levels of traffic. Any access must therefore be of appropriate design, specification and construction to provide safe access to the site whilst ensuring that traffic congestion on the existing local road network and any adverse environmental impacts to existing communities are avoided.

## 2.4 Original Route Selection

When proposals for the Defence Technical College and Aerospace Business Park were first developed, a study was undertaken to determine the most appropriate means of providing access to the St. Athan site. The findings of that study are reported in the "Aerospace Business Park and Defence Technical College Report on Highway Access Options" ref. A024845rep091214\_v1 dated December 2009<sup>(1)</sup>. An extract from the report, including Chapter 5 which considers the options for access from the west, as well as a route option drawing, is provided in **Appendix A**.

The original route study identified the following options for providing access to the Aerospace Business Park and Defence Technical College. Reference should be made to the drawing included in **Appendix A** which illustrates the alignment of each proposed route.

- Access from the east (avoiding St. Athan village)
  - Eastern bypass to St Athan village
  - Inner bypass to St Athan village
- Access from the south
  - Southern access running to the east of the runway

- Tunnel beneath the main runway
- Tunnel beyond the western end of the runway
- Access from the west
  - On-line improvement of Eglwys Brewis Road
  - Northern Access Road
  - Access through West Camp

At the time of the original study, access from the west was considered to be the most viable option for providing access to the Aerospace Business Park and Defence Technical College. The study concluded that the preferred option was to construct the Northern Access Road.

The reasons given in the original report for preferring access from the west, rather than from the east or from the south, are considered to remain valid despite the revised masterplan. Of the three options presented for providing access from the west, only the construction of the Northern Access Road or the on-line improvement of Eglwys Brewis Road are considered potentially viable. This is because access through West Camp is not considered to be an option due to the security implications and the restrictions that this may place on the operation of the Aerospace Business Park. Furthermore the current arrangement of accessing the Aerospace Business Park via the MoD Main Gate will not be possible from 2019 onwards.

In summary, the original list of options can be reduced to two potentially viable options to serve the currently proposed Aerospace Business Park, namely:

- Construct the Northern Access Road; or
- On-line improvement of Eglwys Brewis Road.

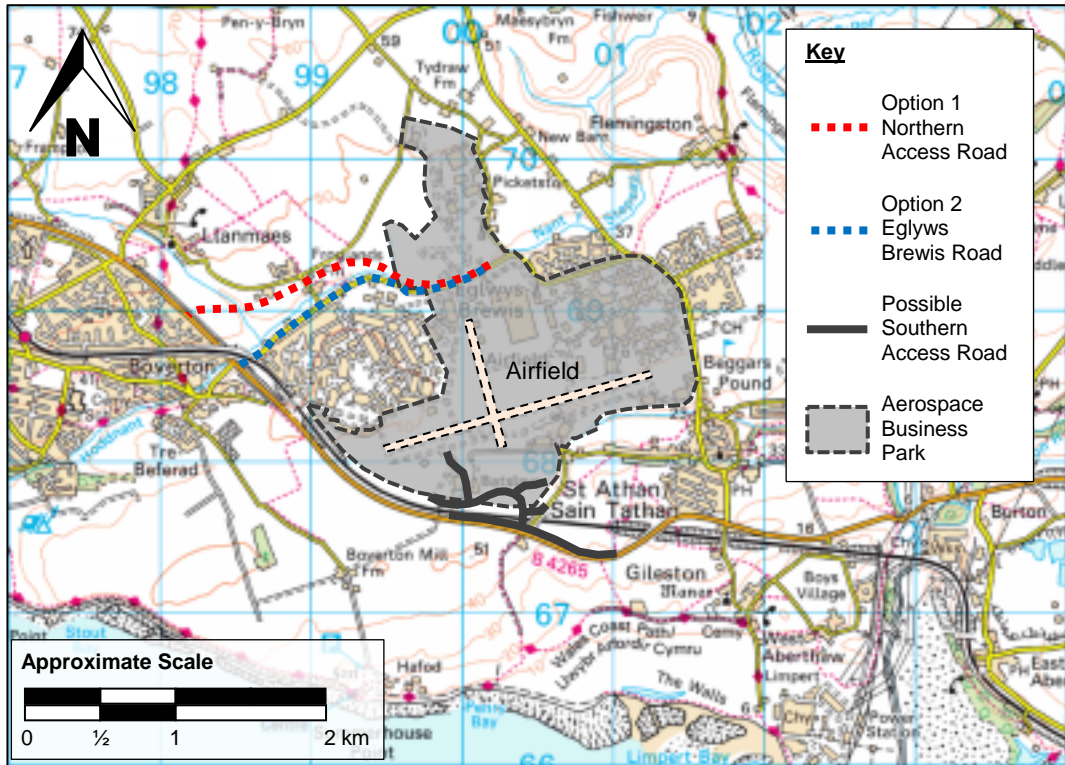
The purpose of this report is to examine in more detail the feasibility of upgrading the existing Eglwys Brewis Road.

## **2.5 Southern Access Road**

It should be noted that in addition to the above, a Southern Access Road is proposed to serve future development at the Aerospace Business Park if required. This access may be needed in the future depending on the scale of development at the Aerospace Business Park but, for operational reasons, would only provide access to development south of the runway. It would not be used to access land north of the runway as the movement of high volumes of vehicular traffic across the operational runway would not be permitted on safety and security grounds. Justification for the Southern Access Road is considered to be independent of the options considered in this report and is therefore outside the scope of this study.

### 3. DESCRIPTION OF THE OPTIONS

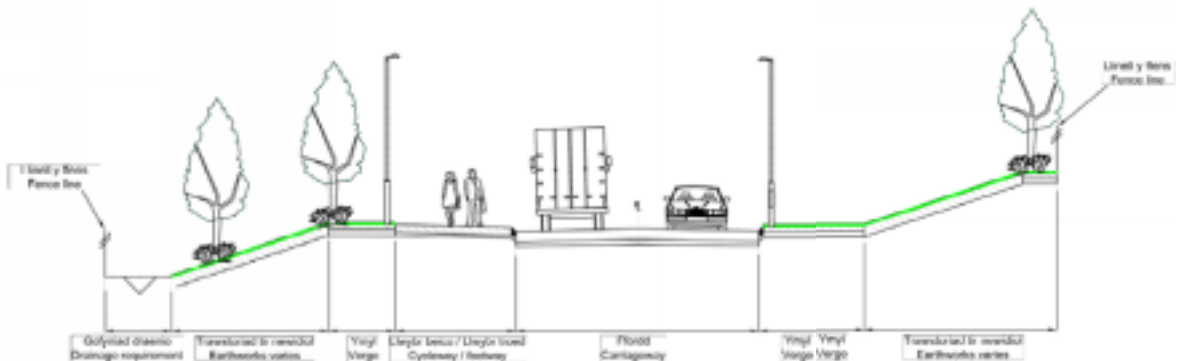
The alignment of each option in relation to the Aerospace Business Park is shown in **Figure 2** below. The potential route of the proposed Southern Access Road is also shown.



**Figure 2 – Route Options**

#### 3.1 Option 1 – Northern Access Road

The Northern Access Road comprises a 2.1km single carriageway road 7.3m wide. A shared footway/cycleway 3.5m wide is proposed on the southern side with a 2m wide grass verge beyond. A 4m wide grass verge is proposed on the northern side to enable the possible construction of a footway if future demand requires. The road would in general follow the existing topography of the land on a low embankment. The road would enter a cutting at its western end in order to tie-in with the levels of the existing B4265. Reference should be made to the General Arrangement drawings provided in **Appendix B**. A typical cross-section is shown in **Figure 3**.



**Figure 3 – Northern Access Road Typical Cross Section**



A number of junctions would be provided along the route comprising simple T-junctions to serve potential new residential development areas which have been allocated in the Vale of Glamorgan Council's emerging Local Development Plan (LDP). At the western end a new roundabout would be constructed on the B4265. At the eastern end a new signalised junction would provide access into the Aerospace Business Park and connect to the existing local network.

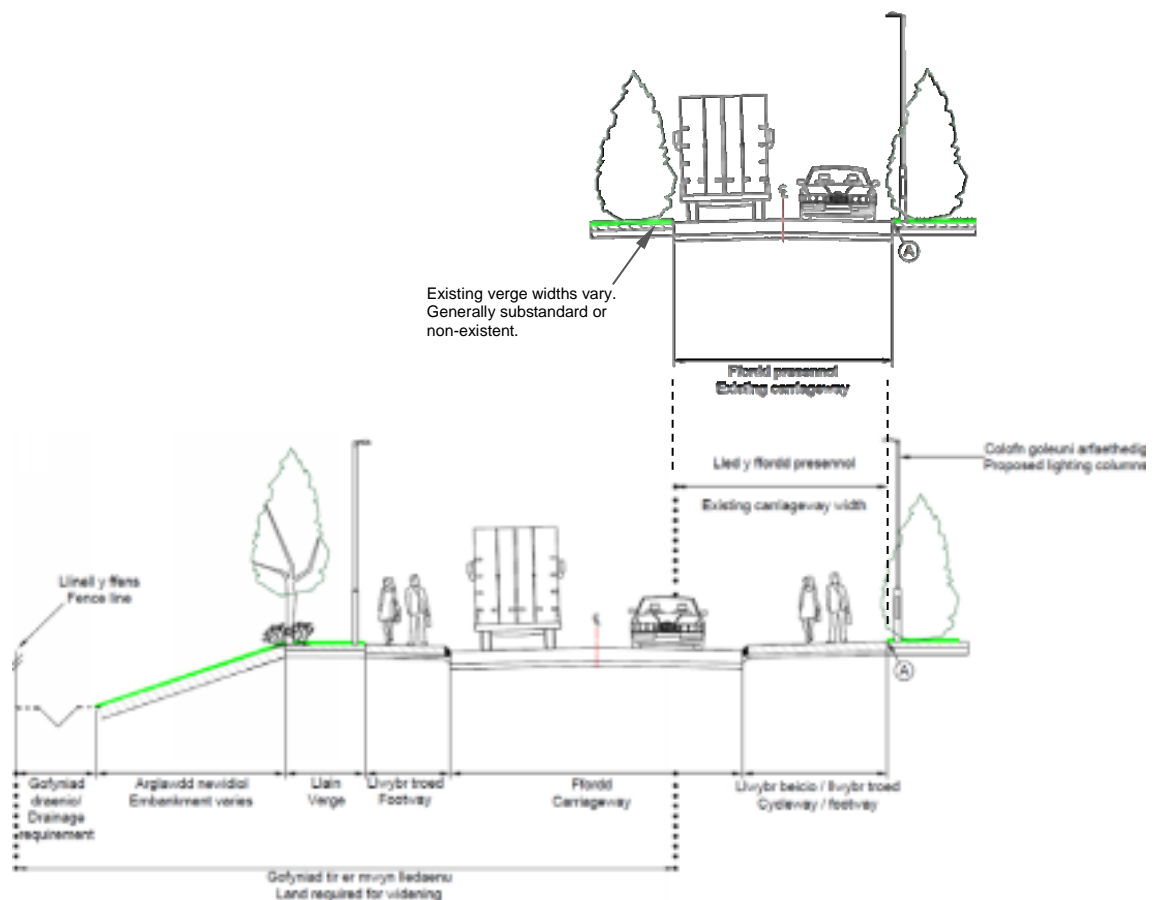
In order to discourage traffic travelling through the village of St. Athan, the signalised junction at the entrance to the Aerospace Business Park would be configured such that traffic leaving the business park is discouraged from turning right into St. Athan village through the use of traffic signs and kerb alignments. Similarly, traffic travelling west through St. Athan will be discouraged from turning left into the business park. New traffic signs will be erected on the B4265 to ensure traffic travelling from both directions is directed to use the new road rather than existing routes.

### 3.2 Option 2 – Eglwys Brewis Road

With reference to the General Arrangement drawing provided in **Appendix C**, upgrading Eglwys Brewis Road would involve implementing a range of measures to provide a viable alternative to the Northern Access Road to a current similar adoptable standard. These works would include:

- Carriageway widening to provide a minimum width of 7.3m;
- Carriageway realignment to provide an acceptable horizontal alignment at some bends;
- Reconfiguration of the existing railway bridge to provide sufficient headroom;
- Improvement to pedestrian/cyclist facilities through the railway bridge;
- Construction of shared footway/cycleways alongside Eglwys Brewis Road; and
- Street lighting improvements.

Cross section drawings showing the existing and proposed situation are presented in **Figure 4** overleaf.



**Figure 4 – Eglwys Brewis Road – Existing (top) and Proposed (bottom) Cross Sections**

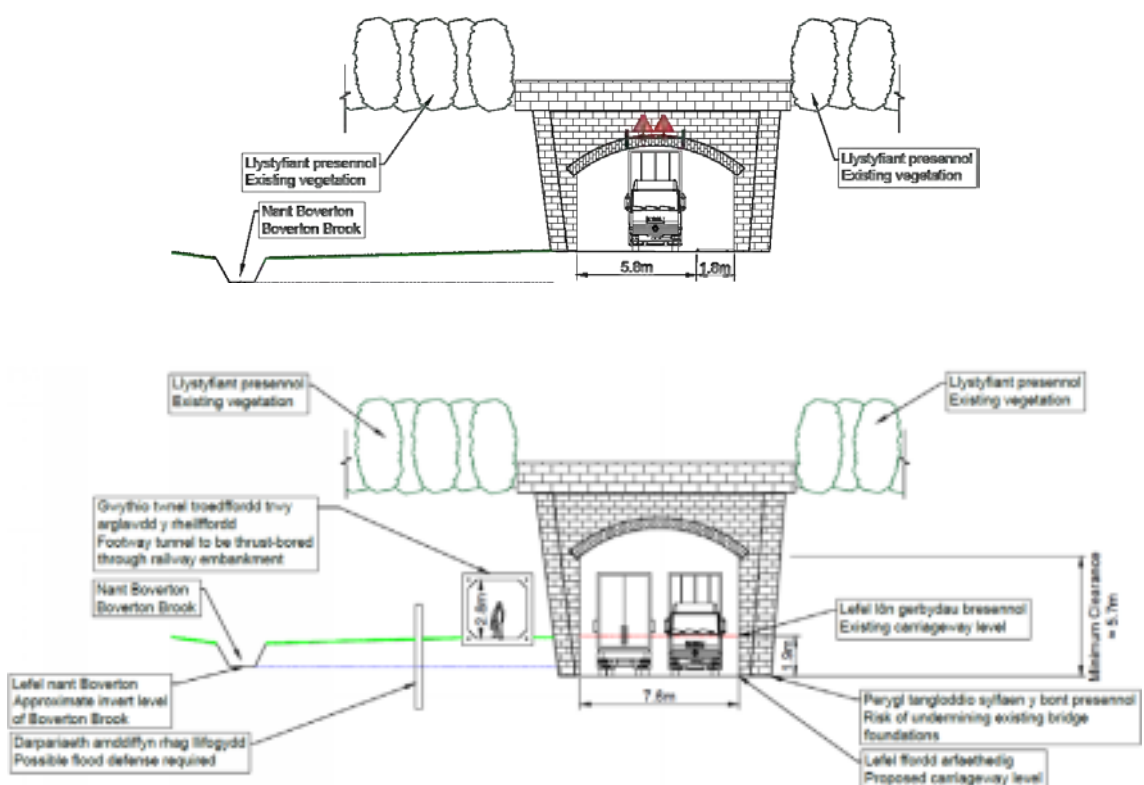
A number of junctions would be required along the route to serve the residential developments proposed in the LDP. These would need to cross Boverton Brook. A new junction would be constructed at the eastern end, similar to that proposed for the Northern Access Road to provide access into the Aerospace Business Park.

It should be noted that there could be a number of viable options available for upgrading the road. The options presented in this report are considered to represent the most feasible and cost effective.

For example the drawings indicate carriageway widening on the northern side of the road which is considered to be the simplest option in terms of buildability. However, widening to the north will require land to be acquired, including the acquisition of two existing properties at The Parwg (a house) and The Old Brewery (a commercial property). Compulsory purchase powers may be needed to achieve these acquisitions. An alternative option to avoid these constraints may be to widen the road to the south. Given the existing topography, whereby the land rises to the south, this would require a retaining structure. It is anticipated that even with widening to the south and implementing a retaining structure, some land acquisition to the north would also be required to achieve the necessary carriageway and footway widths.

At present there is insufficient headroom and the bridge is subject to a height restriction which is considered unacceptable in attracting investment to the Aerospace Business Park. There are a number of options available for this location which could provide the required configuration for both vehicles and pedestrian use. One option for dealing with the railway bridge, as presented in **Figure 5**, would be to lower the carriageway to provide sufficient headroom. This would require the following works:

- Carriageway reconstruction at a lower level approximately 1.9m below existing carriageway level;
- Underpinning of the existing bridge abutments;
- Construction of flood prevention measures given that this location is prone to flooding due to the proximity of Boverton Brook and the high groundwater;
- Installation of a pumping station to ensure adequate drainage;
- Construction of a separate tunnel bored through the railway embankment to provide a pedestrian and cycleway link.

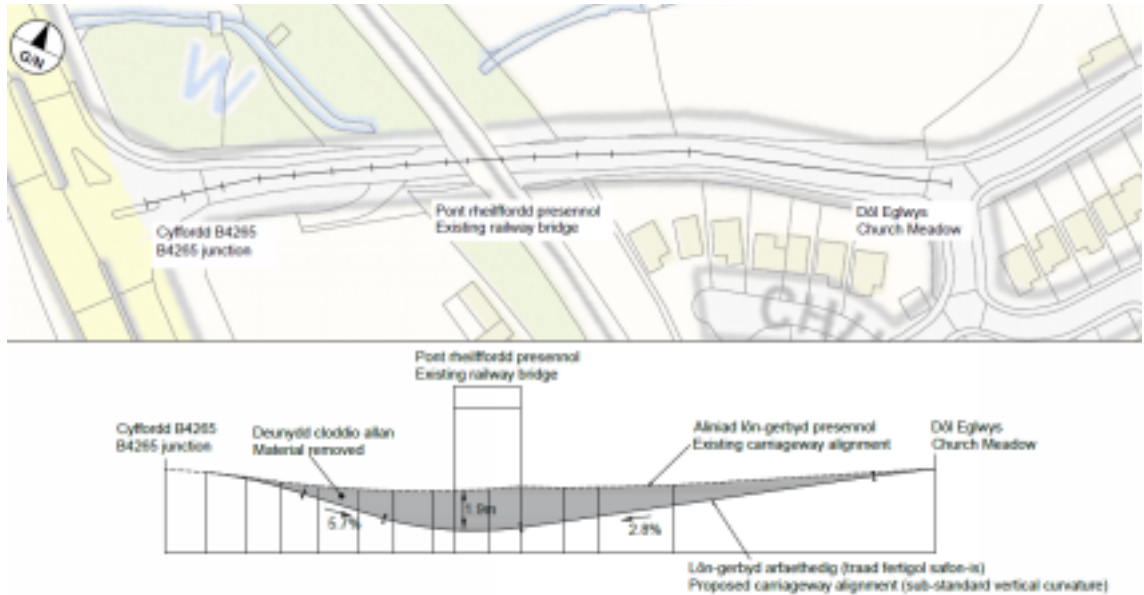


**Figure 5 – Existing Railway Bridge Existing (top) and Proposed (bottom)**

There are a number of risks associated with these works, namely:

- The existing bridge abutments could be undermined;
- Unknown ground conditions;
- The proximity of the underlying groundwater;
- Flood risk, given that this location is prone to flooding which could result in access being cut off from time to time;
- A sub-standard vertical alignment on Eglwys Brewis Road given the depth to which the road would need to be lowered (see **Figure 6**);

- Significant earthworks on either side of the bridge;
- The need to agree an acceptable design with Network Rail; and
- The risk of rail closures if the existing bridge was deemed unstable during the works.



**Figure 6 – Sub-standard Vertical Alignment at Railway Bridge**

An alternative option would be to only partially lower the carriageway to provide sufficient headroom within the central part of the bridge, with traffic movements being restricted to single-file either by means of a priority give-way or by traffic signals. Restricting the carriageway width would also allow the footway to remain within the arch of the bridge, removing the need to bore a separate tunnel through the railway embankment. One disadvantage would be the potential for queuing on Eglwys Brewis Road at peak times, especially if employment at the Aerospace Business Park increases to 3,000 jobs as predicted.

A further alternative option may be to replace the existing bridge deck with a more slender steel or composite construction in order to increase the headroom. However, this would require a number of rail possessions, thus increasing the costs and the timescale, and would also result in the loss of an attractive stone arch bridge. Depending on how slender a structure was possible, some carriageway lowering is still likely to be required.

#### 4. OPTIONS APPRAISAL

In order to ensure a structured approach to the review, Aecom has considered the guidance provided in WeITAG<sup>(2)</sup> and TAN 18<sup>(3)</sup>. The assessment has therefore examined the following criteria:

- Engineering feasibility;
- Environmental impact;
- Social impact;
- Economic impact;
- Cost; and

- Time.

The findings are presented in the following sections.

#### 4.1 Engineering Feasibility

**Table 1 – Engineering Feasibility**

Criteria	Northern Access Road	Eglwys Brewis Road	Preferred
Compliance with highway alignment design standard	The proposed Northern Access Road complies with the requirements of the Design Manual for Roads and Bridges.	The existing alignment of Eglwys Brewis Road does not meet the requirements of the Design Manual for Roads and Bridges and therefore works would need to be undertaken to improve the horizontal alignment in several locations. A compliant horizontal alignment can be achieved but land acquisitions would be necessary.  Lowering the carriageway beneath the railway bridge is likely to result in a non-compliant vertical alignment which would require a departure from standard.	NAR
Physical constraints	The Northern Access Road crosses Llanmaes Brook and Boverton Brook which would need to be culverted beneath the road embankment.	Eglwys Brewis Road passes beneath a low railway bridge which is subject to a height restriction. A range of options are available for dealing with the railway bridge as discussion in <b>Section 3.2</b> of this report. There are a number of risks associated with these works.	NAR
Buildability	The western end of the Northern Access Road requires an earthworks cutting into rock which will be challenging to construct. The road also passes over two watercourses which will need to be managed during construction. Otherwise there are no significant buildability constraints.	Maintaining traffic flows along Eglwys Brewis Road and minimising the impact on local residents will be a significant challenge. Upgrading the existing railway bridge is also likely to be a significant challenge in terms of buildability.	NAR
Land acquisitions	All land required to construct the Northern Access Road is already owned by the Welsh Government. No further land acquisitions will be necessary.	Land would need to be acquired to widen the existing Eglwys Brewis Road and two properties may need to be demolished. Compulsory purchase powers may need to be used, which carry risk and could affect timescale.	NAR
Access into the Aerospace Business Park	Both options would include a new entrance into the Aerospace Business Park via Picketston Gate.		Neutral

Criteria	Northern Access Road	Eglwys Brewis Road	Preferred
Service diversions	Both options would require a number of service diversions to be able to construct the new road. Neither option is significantly better than the other.		Neutral

## 4.2 Environmental Impact

**Table 2 – Environmental Impact of Each Option**

Criteria	Northern Access Road	Eglwys Brewis Road	Preferred
Noise	<p>Both the Northern Access Road and Eglwys Brewis Road options will have an adverse impact on local residents in terms of noise during the construction and operation phases. However, the impact on individual properties will vary depending on which option is selected. Further reference should be made to Aecom report ref. 60509148/NORP0001.</p> <p>The impact, as defined in the Design Manual for Roads and Bridges, which examines the change from current levels, is considered to be greater for the Northern Access Road given that construction of the Northern Access Road results in a change from a greenfield site to a highway, whereas the Eglwys Brewis Road results in an increase in traffic volumes on an existing road. However, a greater number of properties are situated within the immediate vicinity of Eglwys Brewis Road that would be adversely affected by increased traffic noise if this option were selected. Therefore, noise impacts are considered to be neutral when considering the two options.</p>		Neutral
Air quality and greenhouse gas emissions	<p>An air quality and pollution assessment has been undertaken to examine the impact of each option. Reference should be made to Aecom report ref. 60509148/EXRP0001. Predictions indicate that there would be negligible changes in pollutant concentrations between the Northern Access Road and Eglwys Brewis Road options. The impact of emissions from road sources during operation of the proposed Northern Access Road to sensitive receptors is considered to be negligible and therefore not significant. Air quality effects are also considered to be insignificant in the additional later 2034 scenario. On the basis of the construction and operational assessments carried out, the overall effect of either option on air quality is not considered to be significant.</p>		Neutral
Landscape and townscape	<p>Construction of the Northern Access Road will impact the existing landscape, resulting in the loss of agricultural land.</p> <p>Mitigation measures will be implemented to minimise the visual impact of the road and to integrate it with the landscape.</p> <p>If residential development was to occur on the land south of the Northern Access Road, then Eglwys Brewis Road could potentially be promoted as a green corridor.</p>	<p>Upgrading Eglwys Brewis Road will have a detrimental impact on part of the landscape.</p> <p>Whilst widening the existing road is likely to have less of an impact on the landscape in terms of the overall footprint, it should be noted that the majority of the Northern Access Road site is agricultural land, whereas the land required to upgrade Eglwys Brewis Road could have greater potential in terms of biodiversity.</p>	Neutral

<b>Criteria</b>	<b>Northern Access Road</b>	<b>Eglwys Brewis Road</b>	<b>Preferred</b>
Biodiversity	Both options are likely to have similar implications for biodiversity given that the construction of either option will result in the loss of some natural habitat. However, it should be noted that the Northern Access Road would result mainly in the loss of agricultural land whereas upgrading Eglwys Brewis Road will impact on existing natural habitat. Both options present opportunities for betterment through the creation of new habitat, particularly associated with the SUDS drainage measures. Both options would also need to include ecological mitigation measures for a range of species including dormouse, otters, badgers and bats. Therefore, the biodiversity implications are considered to be neutral when comparing the two options.		Neutral
Soils	Both options will involve the removal of shallow soils to construct the new road. Existing topsoil will be stripped and re-used within the works. Given that similar measures will be required for both options, the impact on soils is considered to be similar for both options.		Neutral
Heritage	Neither option has a detrimental impact on existing heritage features, However there is the potential for archaeological finds across the area, which could have implications for both options. Therefore, heritage impact is considered to be similar for both options.		Neutral
Flood risk	The Northern Access Road will act as a flood defence by restricting the flow of Llanmaes Brook and Boverton Brook and creating flood plains to the north of the new road. This will provide betterment to the downstream residential area of Boverton, which is currently at risk of flooding, as well as the potential residential areas to the south of the new road. Utilising the Northern Access Road as a flood defence also aligns with the Vale of Glamorgan Council's flood alleviation scheme in Llanmaes, offering betterment to Llanmaes village. Reference should be made to Aecom report ref. 60509148/BRRP0001 for details of the Flood Consequences Assessment that has been undertaken.	Upgrading Eglwys Brewis Road would offer no betterment in terms of flood risk. If similar benefits to those offered by the Northern Access Road were to be recognised, then separate flood alleviation schemes would need to be implemented at Llanmaes Brook and Boverton Brook.	NAR

Criteria	Northern Access Road	Eglwys Brewis Road	Preferred
Water environment	<p>Neither option will have a significant impact on the underlying groundwater.</p> <p>The Northern Access Road will have a positive impact on Llanmaes Brook and Boverton Brook, with the flows within each watercourse being restricted to create flood plains to reduce the flood risk downstream. These flood plains will create some natural habitat for a range of species, thus improving the overall biodiversity.</p>	The nearby surface watercourses Llanmaes Brook and Boverton Brook would be unaffected by the proposals.	NAR

## 4.3

**Social Impact****Table 3 – Social Impact of Each Option**

Criteria	Northern Access Road	Eglwys Brewis Road	Preferred
Impact on local residents post-construction	Assessing the impact on local residents post-construction is largely dependent on where individual properties are located in relation to each option. For example residents along Eglwys Brewis Road will receive greater adverse impacts if the option to upgrade Eglwys Brewis Road was selected, due to increased traffic volumes in close proximity to their properties. Alternatively, residents to the north in areas such as Froglands and Millands Park will be adversely impacted if the Northern Access Road is constructed. It is considered that a larger number of properties would be adversely affected if the Eglwys Brewis Road option was selected. The Northern Access Road is also considered to be the preferred option in terms of maintaining or improving the existing situation.		NAR
Impact during construction	The majority of construction works would be undertaken outside the existing highway network, so the impact on local road network will be minimised. However the works will still have an impact on local residents in close proximity to the construction operations.	Upgrading Eglwys Brewis Road would cause considerable disruption for local residents during the construction phase due to the need to undertake works in close proximity to residential properties. There would also be significant traffic disruption due to the need to implement traffic management restrictions.	NAR



<b>Criteria</b>	<b>Northern Access Road</b>	<b>Eglwys Brewis Road</b>	<b>Preferred</b>
Road safety	<p>The highway alignment for the proposed Northern Access Road complies with the requirements of the Design Manual for Roads and Bridges and will therefore be inherently safe.</p> <p>Construction of the Northern Access Road will also ensure against increased traffic volumes on the existing Eglwys Brewis Road and any potential reduction in road safety that could cause.</p>	Lowering the carriageway beneath the railway bridge is likely to result in a non-compliant vertical alignment which would require a departure from standard. This may introduce safety concerns. Elsewhere Eglwys Brewis Road would be realigned to achieve a Design Manual for Roads and Bridges compliant alignment.	NAR
Personal security	Both options would include similar measures to ensure personal security such as wide footways and street lighting. Neither option is considered to be significantly better or worse in terms of personal safety.		Neutral
Physical fitness	Both options would include footway/cycleways to encourage the use of alternative modes of transport. Neither option is therefore considered preferable in terms of physical fitness.		Neutral
Social inclusion	<p>The Northern Access Road includes a range of inclusive access measures which would provide safe routes to schools for the local community. Existing routes along Eglwys Brewis Road will also benefit from reduced traffic volumes.</p> <p>Furthermore, if residential development was to occur on the land south of the Northern Access Road, then Eglwys Brewis Road could potentially be promoted as a green corridor.</p> <p>However, construction of the Northern Access Road will result in some severance for a number of existing residential properties, in particular where the proposed road crosses the Llanmaes Lane at Froglands.</p>	Widening the existing Eglwys Brewis Road and the provision of improved footway/cycleway links will improve the connectivity and could improve the social inclusion between the communities of Eglwys Brewis and Llantwit Major. However, as the Aerospace Business Park expands, traffic volumes on Eglwys Brewis Road would increase which could result in the road becoming a barrier, resulting in severance between communities.	NAR
Equality, diversity and human rights	Neither option is considered to provide significant benefits in terms of equality, diversity and human rights.		Neutral
Health and wellbeing	<p>Both options would include footway/cycleways to encourage the use of alternative modes of transport. Neither option is considered preferable in terms of health and wellbeing.</p> <p>However, if the Northern Access Road were to be constructed then there would be the opportunity to promote Eglwys Brewis Road as a green corridor.</p>		Neutral

Criteria	Northern Access Road	Eglwys Brewis Road	Preferred
Safe Routes to Schools	The Northern Access Road would include footways and cycleways along its length which would be extended along the B4265 to provide linkages into Llantwit Major. Similar measures would be provided at the eastern end to improve footway/cycleway provision along Eglwys Brewis Road towards St. Athan. These measures, coupled with reduced traffic volumes on Eglwys Brewis Road, could have a significant overall benefit for Safe Routes to Schools between Eglwys Brewis and Llantwit Major.	Upgrading Eglwys Brewis Road would include the provision of footway/cycleways along its length, resulting in improved Safe Routes to Schools. However, as the Aerospace Business Park expands, traffic volumes on Eglwys Brewis Road would increase which could start to have detrimental implications for Safe Routes to Schools in the future.	NAR
Walking and cycling	Both options would include shared footway/cycleways along their lengths, so neither is considered to offer any particular advantage.		Neutral
Public transport	Bus services currently run along Eglwys Brewis Road and this is expected to continue regardless of which option is selected. Bus stop provision will be included in the design of the Northern Access Road to enable bus services to run on the new route if required in the future.		Neutral

#### 4.4

#### Economic Impact

**Table 4 – Economic Impact of Each Option**

Criteria	Northern Access Road	Eglwys Brewis Road	Preferred
Economic impact	<p>The primary function of the Northern Access Road is to provide a high quality link to the Aerospace Business Park to enable, and to help attract, economic investment in the Cardiff Airport and St. Athan Enterprise Zone.</p> <p>The Northern Access Road is considered to be the only option aligned to achieving the goals set out in the Strategic Development Framework for the Cardiff Airport and St. Athan Enterprise Zone. The Northern Access Road is therefore considered to be the most economically advantageous option.</p> <p>Without significant expenditure, Eglwys Brewis Road will always be constrained, even with the improvement measures described in this report. The Eglwys Brewis Road option is therefore considered to represent a barrier to attracting further economic investment in the future.</p>		NAR

## 4.5 Cost

**Table 5 – Cost of Each Option**

<b>Criteria</b>	<b>Northern Access Road</b>	<b>Eglwys Brewis Road</b>	<b>Preferred</b>
Cost	<p>Cost estimates indicate that the total project cost for both options is broadly similar. Whilst the construction cost for upgrading Eglwys Brewis Road is lower, the costs associated with purchasing land, purchasing properties, interfacing with Network Rail and increased traffic management requirements during construction, result in the total project cost being comparable with the cost of the Northern Access Road.</p> <p>It should be noted that the cost estimate for the Northern Access Road includes the construction of flood alleviation measures at Llanmaes Brook and Boverton Brook, whereas these works would be additional costs over and above upgrading Eglwys Brewis Road, if this option were to be selected.</p> <p>Overall the cost implications when comparing the two options are considered to be neutral.</p>		Neutral

## 4.6 Time Constraints

**Table 6 – Time Constraints for Each Option**

<b>Criteria</b>	<b>Northern Access Road</b>	<b>Eglwys Brewis Road</b>	<b>Preferred</b>
Time constraints	<p>Whereas the Aerospace Business Park is currently accessed through the MoD camp via Main Gate, this arrangement will not be available from 2019 onwards due to MoD restrictions.</p> <p>Some programme constraints exist in dealing with ecological and archaeological mitigation measures, however these are not considered to be significant barriers in terms of delivering the Northern Access Road within the required timescale.</p> <p>Given the unrestricted working area it is also anticipated that the Northern Access Road could be constructed in a shorter timeframe than the upgrade to the Eglwys Brewis Road.</p>	<p>There are considered to be significant programme constraints associated with the upgrade to Eglwys Brewis Road, in particular dealing with the land acquisitions and negotiations with Network Rail. It is not considered feasible that all matters could be concluded within the necessary timeframe to implement the works by 2019 which could jeopardise the viability of the Aerospace Business Park.</p>	NAR

## 5. CONCLUSIONS

Aecom has undertaken an appraisal to examine the available options for improving access to the Aerospace Business Park in St. Athan. Previously in 2009 a number of options had been identified but it is considered that only two potentially viable options remain. These are to construct the Northern Access Road or to upgrade the existing Eglwys Brewis Road.

In reviewing each option, Aecom has considered the guidance provided in WeITAG<sup>(2)</sup> and TAN 18<sup>(3)</sup> and examined the following criteria:

- Engineering feasibility;
- Environmental impact;
- Social impact;
- Economic impact;
- Cost; and
- Time.

A number of criteria were examined and the assessment indicated the following:

- the Northern Access Road was preferred against 13 criteria;
- there were no criteria where Eglwys Brewis Road was preferred; and
- both options were considered to be neutral against 15 criteria.

It can be concluded that whilst both options have various advantages and disadvantages, the Northern Access Road has fewer constraints to overcome and those constraints are considered to be less costly and less time-impactful. In particular, the main factors are:

- Opportunities for inclusive access and Safe Routes to Schools improvements across the local road network if the Northern Access Road is constructed;
- Opportunities for addressing flood risk by incorporating flood alleviation measures into the Northern Access Road;
- The level of impact on local residents both during construction and after road opening if Eglwys Brewis Road were to be upgraded;
- Buildability constraints associated with upgrading Eglwys Brewis Road;
- The ability to deliver the Northern Access Road to the required timescales which is vital given the pending restrictions imposed by the MoD from 2019;
- Risks associated with upgrading Eglwys Brewis Road, particularly in respect of maintaining Network Rail service levels during the bridge works whilst also achieving the required construction timescales imposed by the MoD requirements. There is also the need for land acquisitions (potentially by compulsory purchase), which are considered to be a significant disadvantage to the option of upgrading Eglwys Brewis Road; and
- The overall economic benefits, given that the Northern Access Road is considered to be the only option which will provide a high quality link to the Aerospace Business Park to enable, and to help attract, economic investment in the Cardiff Airport and St. Athan Enterprise Zone in alignment with the goals set out in the Strategic Development Framework.

In conclusion, the Northern Access Road remains the preferred option for providing access to the Aerospace Business Park.

**6. REFERENCES**

1. Aerospace Business Park and Defence Technical College Report on Highway Access Options" ref. A024845rep091214\_v1, WYG, Capita and Atkins, 2009
2. Welsh Transport Planning and Appraisal Guidance (WelTAG), Welsh Government, 2008
3. Technical Advice Note (TAN) 18: Transport, Welsh Government, 2007

# ***APPENDIX A EXTRACT FROM THE ORIGINAL ROUTE OPTIONS REPORT***

**St Athan**

**Aerospace Business Park  
and Defence Technical College**

**Report on highway access options**



Llywodraeth Cymru  
Welsh Assembly Government

Report on highway access options  
December 2009



St Athan

Aerospace Business Park and Defence Technical College

Report on highway access options

December 2009

Department for the Economy and Transport  
Welsh Assembly Government  
QED Centre  
Main Avenue  
Treforest Industrial Estate  
Treforest  
Rhondda Cynon Taf  
CF37 5YR

Welsh Assembly Government



## 5 Consideration of options: access from the west

### Overview of options for access from the west

501 Two main options were considered for providing access to the DTC and ABP from the west in order to be able to access the site from the north:

- the on-line improvement of Eglwys Brewis Road with an improved junction at the B4265; and
- a new northern access road running roughly parallel to Eglwys Brewis Road, from a new junction with the B4265.

502 A separate road would be required from the B4265 to access ABP South.

503 An alternative option for providing access to the DTC and ABP from the west arose during public consultation, in March 2009, and was also proposed in objection to the planning applications by Mr David Harris and Llanmaes Community Council. The proposal suggested a new roundabout junction on the B4265 just to the south of the existing West Gate access, a new bridge over the railway and a new length of road running to the north of the runway through West Camp before joining the road illustrated on ABP North master plan drawings submitted with the ABP planning application, and linking onto Eglwys Brewis Road, with DTC being accessed off Eglwys Brewis Road (as improved by the DTC proposals illustrated in the DTC planning application). A separate road would be required from the B4265 to access ABP South.

### On-line improvement of Eglwys Brewis Road (Figure R:15)

504 The proposal for the on-line improvement of Eglwys Brewis Road comprises:

- Improvements to the junction of Eglwys Brewis Road and the B4265;
- 2.4 km of improvement and widening of Eglwys Brewis Road to achieve a WS2 urban (without hardstrips) standard, including footway and cycleway provision; and,
- The demolition of the existing bridge beneath the railway and the construction of a new bridge to provide adequate cross section and headroom for the improved highway.

505 The widening of Eglwys Brewis Road would generally occur along the north-western side of the road, that is the side adjoining the Boverton Brook; the south-eastern side is restricted by the close proximity of existing housing and the adjoining Eagle Road, as well as constraints relating to changes in level. This option would require a separate road from the B4265 to access ABP South.

506 The benefits and limitations of this option can be summarised as follows:

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- Topography: Although the land slopes towards Boverton Brook, the vertical alignment of this road generally follows the topographical profile.
- West Camp: West Camp would be unaffected by this option.
- Land for development: The land available for the development of DTC and ABP would be unaffected by this option.
- Built environment: The existing hangars within the St Athan site could be utilised for development if required. The widening of Eglwys Brewis Road would require the demolition of a house known as Y Parwg and the Old Brewery public house.
- Segregation of access: Separate main access gates would be provided to DTC and ABP North from the improved Eglwys Brewis Road. ABP South would be accessed separately directly from the B4265. In addition, the public facilities would also have separate accesses as required. Access to West Camp is unaffected by the proposal.
- Security of facilities: The security of facilities at West Camp, ABP and DTC would be unaffected by this option.
- Cultural heritage: No adverse effects on archaeological heritage have been identified at this stage.
- Biodiversity: This option would bring significant disturbance to the Boverton Brook, which is a valuable wildlife corridor. The need to widen the existing carriageway would require the Boverton Brook to be diverted to a new course to the north, where the land rises, together with the provision of a compensatory flood plain (see hydrology/ flooding below), which would result in a significant loss of habitat. Otters are known to use this brook and lesser horseshoe bats have been recorded commuting along this area. Any increased lighting would have a detrimental effect on the wildlife potential of this area.
- Landscape: The new bridge construction under the railway would result in the loss of existing vegetation on either side of the rail corridor. Similarly, the widening of the carriageway along Eglwys Brewis Road would also result in the loss of existing vegetation.  
The western section is within the Lias Plateau LANDMAP visual and sensory aspect area, which has a moderate evaluation, whilst the eastern section is within the MoD St Athan area, which has an overall low evaluation and sensitivity. The change arising from the loss of existing boundary treatment would result in an adverse effect.  
There would be views of the new road from the existing public footpaths east of Boverton and around Froglands Farm.  
Individual residential receptors include properties at Millands Farm, Rose Cottage, Froglands Farm, Millands Residential Park, Old Froglands, and Y Parwg, which are high sensitivity receptors, that would experience a change and, therefore, significant adverse effects. These properties would also experience a significant change in night-time views as a result of light trespass from the highway lighting and some adverse effects from the glare of vehicle headlights, although this would be limited by proposed highway landscape planting.  
The suburban areas of settlement at West Camp and Eglwys Brewis, which are high sensitivity receptors, would be subject to change and a significant adverse effects.



- Hydrology/ flooding: In times of adverse weather conditions, the existing Eglwys Brewis Road becomes flooded near the junction with Picketston Lane. At this location, the carriageway is drained by shallow roadside ditches. The rising water level in the Nant y Stepsau causes the flow to back up in these ditches and flood onto the carriageway. To prevent future flooding of the proposed highway, the vertical alignment of the on-line improvement at Eglwys Brewis would be raised 1.0 m above the level of the existing carriageway.

Constructing the improved access on-line would cause problems further west where the Boverton Brook flood plain lies in the vicinity of the Old Brewery and the Llanmaes Brook. The need to widen the existing carriageway would require the Boverton Brook to be diverted to a new course to the north, where the land rises. The widened carriageway would be constructed on what is now a natural flood plain and falls within the C2 Flood Zone. To retain this flood volume, compensatory storage would need to be provided on a like for like basis, involving extensive earthworks to reduce the level of the surrounding land. This option could also have a detrimental effect on the Llanmaes Brook, requiring an additional bund to further reduce the flow into the Boverton Brook.

Providing storage for the attenuated runoff would prove difficult for an on-line improvement scheme due to the small level difference between the carriageway surface and the Boverton Brook.

- Railway: This option would require the demolition of the existing bridge underneath the railway and the construction of a new bridge in its place to provide adequate cross section and headroom for the improved highway. The construction of the new bridge beneath a live railway track would be extremely difficult and the temporary closure of the line would be required, causing disruption to passengers using the newly reopened Vale of Glamorgan line. This work could pose timing difficulties, as it would need to be in place at an early stage to facilitate construction access and to serve the DTC development on opening in 2014. (This disadvantage does not apply to the SAR to serve ABP South, as that access does not serve DTC and is not critical to its implementation and opening.)
- Runway and disused cross runway: This option avoids the need to cross the runway or disused cross runway.
- Runway operation and safety, including obstacle limitation surfaces: From a runway operational viewpoint, this would be an acceptable option.
- Special landscape area: This option would not affect the Lower Thaw Valley SLA.
- Glamorgan Heritage Coast: This option is away from the Glamorgan Heritage Coast.
- Conservation areas: The improved junction with the B4265 would be located directly north-east of the Boverton Conservation Area.
- UDP Policy EMP10 – RAF St Athan employment site: This option would not have a detrimental effect on this policy area.
- Land quality: Agricultural land quality would not be a constraint to this option.
- St Athan village: This option would not physically affect St Athan village. Traffic travelling from the east may attempt to use the existing highway network running through St Athan village as a route to DTC and ABP North; this would be discouraged through the entrance designs for DTC and ABP North restricting access from the east.

- Public rights of way: The Heart of the Vale public right of way runs along part of Eglwys Brewis Road requiring online improvements; an appropriate footpath and crossing facilities would need to be accommodated.
- Accessibility for pedestrians and cyclists: Access from the residential areas at Llantwit Major and Eglwys Brewis to ABP North and DTC, and vice versa, would be via the improved highway along Eglwys Brewis Road, with its associated footway and cycleway provision. Access from East Vale and St Athan village would be along the eastern section of Eglwys Brewis and Cowbridge Road, which may require some improvement as a result.
- Public transport: Bus services would continue to run along Eglwys Brewis Road and through St Athan village allowing DTC and ABP North, as well as the existing residential areas, to be well served by bus. The improvements to the highway along Eglwys Brewis Road would include for the provision of dedicated bus lay-bys. The provision of footways and cycle paths along the western section of Eglwys Brewis Road would allow access to the train station in Llantwit Major from DTC and ABP North.
- Accessing new public facilities: The public facilities at DTC would be accessed from the upgraded Eglwys Brewis Road. Access from St Athan village, East Vale and Eglwys Brewis would be via the existing highway along Cowbridge Road and Eglwys Brewis Road.

507 The requirement to demolish an existing bridge and replace it with a new, wider, bridge under a live railway track would have serious phasing implications in terms of reaching agreement with Network Rail, which could result in a delay in providing suitable access to DTC for its opening. In addition, this work would cause disruption to passengers using the newly reopened Vale of Glamorgan line. The on-line improvement of Eglwys Brewis Road could be problematical in terms of traffic management and service diversions, with severe delays and disruption to traffic movements likely. There are a considerable number of residential properties that would be close to this upgraded road, which could experience a deterioration in environmental quality. The widening of the carriageway and the provision of compensatory flood storage with associated loss of vegetation and habitat, would result in significant disturbance to the valuable wildlife corridor along the Boverton Brook. A residential property and a business property would need to be demolished to accommodate the road widening. This option would require a separate road from the B4265 to access ABP South. The upgrading of Eglwys Brewis Road was therefore considered unacceptable, principally on environmental and construction phasing grounds, and was not taken forward for design in any detail.

### Northern Access Road (Figure R:16)

508 In terms of an appropriate alignment of a new northern access road, various options were considered:

- A route from a new junction on the B4265 running north of Millands Residential Park;

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- A route from a new junction on the B4265 running between Millands Residential Park and Froglands Farm;
- A route from a new junction on the B4265 running between Rose Cottage and Froglands Farm; and,
- A route from an upgraded junction at Eglwys Brewis Road and the B4265, a new crossing under the railway, with the road then running between Rose Cottage and Froglands Farm.

509 The route that was considered to be the most appropriate was that running between Rose Cottage and Froglands Farm. The other routes were discounted for the following reasons:

- A route from a new junction on the B4265 running north of Millands Residential Park: This was deemed to be unnecessarily far from the development it was intended to access (DTC and ABP North). It also took the route unacceptably close to the village of Llanmaes and the conservation area at Llanmaes. The route was also further away from existing urban areas of Llantwit Major, the residential area at West Camp and MoD St Athan.
- A route from a new junction on the B4265 running between Millands Residential Park and Froglands Farm: This was also considered to be unnecessarily far from the development it was intended to access. The route would run close to a number of existing residential properties at Millands Farm, Oakwood, Froglands Farm and Millands Residential Park.
- A route from an upgraded junction at Eglwys Brewis Road and the B4265, a new crossing under the railway, with the road then running between Rose Cottage and Froglands Farm: As for the option of the on-line improvement of Eglwys Brewis Road, the requirement to demolish an existing bridge and replace it with a new, wider, bridge under a live railway track would have serious phasing implications in terms of reaching agreement with Network Rail, which could result in a delay in providing suitable access to DTC for its opening. The option of forming a new junction with the B4265 north of the junction with Eglwys Brewis Road, thereby avoiding the need to cross under the railway, was therefore deemed preferable.

510 The route from a new junction on the B4265 running between Rose Cottage and Froglands Farm is described and appraised below.

511 The proposal for the NAR comprises:

- A new junction of the NAR with the B4265, which requires a 0.5 km online improvement of the B4265 to construct a traffic signal controlled junction;
- 1.8 km of new WS2 standard carriageway, incorporating a new single span bridge over the Llanmaes Brook (the design speed for this section of carriageway is 85kph (50mph));
- 1.0 km of on-line improvements to Eglwys Brewis Road, eastwards from where the NAR joins Eglwys Brewis Road just to the north of ABP North (the design speed for this section of carriageway is 60kph (30mph));



- The inclusion of a combined footway/cycleway link to existing public transport (bus and train) facilities ; and,
- With junctions to all developments being designed to accommodate extraordinary loads (including the access to the Millands Residential Park) and are right in left out, to discourage additional traffic from entering St Athan village.

512 The benefits and limitations of this option can be summarised as follows:

- **Topography:** Although the route for this option generally runs with the topographical profile, the localised topography of the B4265, which is in a cutting, and the Llanmaes Brook valley mean that the road would need to be in a cutting to achieve the junction with the B4265, and then rise up to allow the introduction of a bridge over the Llanmaes Brook.
- **West Camp:** West Camp would be unaffected by this option.
- **Land for development:** The land available for the development of DTC and ABP would be unaffected by this option.
- **Built environment:** The existing hangars within the St Athan site could be utilised for development if required. There would be no requirement to demolish existing properties to achieve this route, although the road would run close to Rose Cottage and Froglands Farm.
- **Segregation of access:** Separate main access gates would be provided to DTC and ABP North from the improved Eglwys Brewis Road. ABP South would be accessed separately, directly from the B4265. In addition, the public facilities would also have separate accesses as required. Access to West Camp is unaffected by the proposal.
- **Security of facilities:** The security of facilities at West Camp, ABP and DTC would be unaffected by this option.
- **Cultural heritage:** No adverse effects on archaeological heritage have been identified at this stage.
- **Biodiversity:** The road would cross agricultural fields comprising improved grassland and poor semi-improved grassland. The fields are bordered by hedgerows, a number of which would be severed by the proposed route. Three hedgerows identified as 'important' under the 1997 Hedgerow Regulations would be severed by the route. The hedges in question are intensively managed and their severance may be classed as slight adverse in respect of habitat.  
The road would cross the Llanmaes Brook on a single clear span bridge. The brook is used by otter and commuting bats. Lighting would cause slight adverse impact for otters and moderate adverse impact for bats. The majority of bats recorded were pipistrelle which are generally not light-shy, although some *Myotis* sp. were also recorded – these species are light-shy and may be deterred from commuting along the Llanmaes Brook or hedgerows crossing the route. The brook corridor must be kept dark to mitigate this, resulting in a neutral effect for otter and bats along Llanmaes Brook. The severance of hedgerows across the area would have an impact on commuting bats and could be considered moderate adverse owing to the majority of bat activity being from non light-shy species. With mitigation such as the provision of dark corridors and bat bridges, the effect would be reduced to slight adverse.

The junction of the NAR with the B4265 would remove a large area of roadside planting which may form a barrier to dormouse movement, a dormouse having been discovered nearby. Planting along the Boverton and Llanmaes Brooks and connecting back to the existing roadside planting should reduce potential impacts, providing the areas of planting and the Llanmaes Brook were kept dark. The railway corridor and its associated vegetation, which may also provide a migration route for dormice, would remain unaffected.

- Landscape: The western section of the NAR would be within agricultural pastoral/ arable landscape of medium/ high sensitivity, with the change arising from loss of hedges and existing roadside planting to the B4265 resulting in adverse effects.

Individual residential receptors include properties at Millands Farm, Rose Cottage, Froglands Farm, Millands Residential Park, Old Froglands, which are high sensitivity receptors; these would experience significant change and therefore significant adverse effects. These properties would also experience a significant change in night-time views as a result of light trespass from the highway lighting and some adverse effects from the glare of vehicle headlights, although this would be limited by proposed highway landscape planting.

The eastern section of the option would be an on-line improvement of the existing Eglwys Brewis Road, which is within the LANDMAP visual and sensory MoD St Athan aspect area, which has an overall low evaluation and sensitivity. There would be some change with a resulting adverse effect. The settlements of Llanmaes (high sensitivity receptor) and Eglwys Brewis (medium sensitivity) would be subject to some change with resulting adverse effects.

There would be views of the new road from the Valeways Millennium Heritage Trail south of Llanmaes.

- Hydrology/ flooding: Raising the level of the NAR has been an essential consideration in the design of the highway in order to provide sufficient depth to the drainage system to incorporate a form of storage for the attenuated runoff flow. Constructing the NAR off-line on higher ground would allow over-sized storage pipes to run the length of the footway/cycleway and remain at a sufficiently high level to outfall into the shallow watercourses. This option of a new off-line access would not interfere with the Boverton Brook flood plain or the Llanmaes Brook flood plain and would be raised above the C2 Flood Zone. At Eglwys Brewis, the vertical alignment of the on-line improvement would be raised 1.0 m above the level of the existing carriageway to prevent flooding from the Nant y Stepsau.
- Railway: This option would avoid crossing the railway in order to access ABP North and DTC. (A separate access would be required for ABP South, which may require a railway crossing.)
- Runway and disused cross runway: This option avoids the need to cross the runway or disused cross runway.
- Runway operation and safety, including obstacle limitation surfaces: From a runway operational viewpoint, this would be an acceptable option.
- Special landscape area: This option would not affect the Lower Thaw Valley SLA.
- Glamorgan Heritage Coast: This option would be away from the Glamorgan Heritage Coast.
- Conservation areas: The road is located south-west of the Llanmaes Conservation Area.

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- UDP Policy EMP10 – RAF St Athan employment site: This option would not have a detrimental effect on this policy area.
- Land quality: This route crosses a small area of Grade 3A agricultural land, which would be regarded as a minor constraint to this option.
- St Athan village: This option would not physically affect St Athan village. Traffic travelling from the east may attempt to use the existing highway network running through St Athan village as a route to DTC and ABP North; this would need to be discouraged through the entrance designs for DTC and ABP North restricting access from the east.
- Public rights of way: The new section of road, north of the B4265, would affect three public rights of way (L16/40/1, L12/16/1 and L12/7/1). The new junction of the NAR with the B4265 would affect the entry point to right of way L16/40/1; the works would include provision to ensure continued access. Both of the other rights of way would require road crossing facilities. The Heart of the Vale public right of way runs along the section of Eglwys Brewis Road requiring online improvements; an appropriate footpath would need to be accommodated.
- Accessibility for pedestrians and cyclists: Access from the residential areas at Llantwit Major to ABP North and DTC, and vice versa, would be along the new section of NAR and the upgraded section of Eglwys Brewis Road, with their associated footways and cycleways. Access from East Vale and St Athan village would be along the eastern section of Eglwys Brewis and Cowbridge Road.
- Public transport: Bus services would continue to run along Eglwys Brewis Road and through St Athan village allowing DTC and ABP North, as well as the existing residential areas, to be well served by bus. The improvements to the highway along Eglwys Brewis Road would include for the provision of dedicated bus lay-bys. The provision of footways and cycle paths along the NAR would allow access to the train station in Llantwit Major from DTC and ABP North.
- Accessing new public facilities: The public facilities at DTC would be accessed from the NAR and upgraded Eglwys Brewis Road. Access from St Athan village, East Vale and Eglwys Brewis would be via the existing highway along Cowbridge Road and Eglwys Brewis Road.

513 This option would avoid crossing the railway in order to access ABP North and DTC, with its associated phasing implications in terms of reaching agreement with Network Rail (a separate access is required for ABP South, which may require a railway crossing, but that would be in a later phase). West Camp and the land available for development would be unaffected by this option. There would be no requirement to demolish existing properties to achieve this route, although the road would run close to Rose Cottage and Froglands Farm. The route of the road across the Llanmaes Brook and agricultural fields means that there would be some loss of vegetation and habitat where the route crosses existing hedgerows; suitable mitigation and compensation would be required. This option would require a separate road from the B4265 to access ABP South. The Welsh Assembly Government, MoD and Metrix have concluded that the proposed NAR would provide the most appropriate means of serving the development of the DTC and ABP. The adopted [St Athan Development Brief](#) for the redevelopment of the site also supports the main access to both ABP and DTC being provided by the NAR.



## Access through West Camp (alternative alignment suggested by objectors to planning application)

514 The proposal for an access through West Camp, as shown on Colin Buchanan Figures 1 and 2 (included in Appendix 3), comprises:

- A new roundabout junction on the south west side of the B4265 just to the south-east of the Llantwit Road junction with the B4265 and the entrance to West Camp;
- A new bridge over the railway with a 25 m skewed span; and,
- 1.8 km of new WS2 standard carriageway, incorporating the new bridge over the railway

515 From an assessment of the drawing and the comments provided with it, the following assumptions regarding the proposal have been made:

- There would be no NAR from the B4265;
- The existing West Camp access remains open;
- The proposed road connects at its eastern end to the ABP North spine road shown on ABP master plans submitted with the ABP planning application;
- There would be security gates at both the northern and southern ends of the road;
- The provision of security gates on the line of the road means that it is proposed to be a private road rather than an adopted highway;
- That access to DTC would be provided off an improved Eglwys Brewis Road, as proposed in the DTC planning application; and
- That traffic could turn right from the junction of the ABP North spine road with Eglwys Brewis Road, and thus access DTC.

516 The benefits and limitations of this option can be summarised as follows:

- Topography: The topography is relatively flat along the length of this option. In addition, the railway line is in a cutting at this location, which would mean that minimal earthworks would be required to achieve a crossing of the railway.
- West Camp: This option would have a significant detrimental effect on the military use of West Camp. The road would need to be located in accordance with runway operational requirements, particularly the obstacle limitation surfaces and, therefore, the alignment of the resulting road would encroach significantly on West Camp. Although the Colin Buchanan figures show the retention of the existing entrance to West Camp, the existing road from the entrance through the southern part of West Camp would be affected by the need to locate the new road outside the obstacle limitation transitional surfaces. In addition, as noted in section 2, there are specific MoD security requirements relating to CTM, which would mean that not only would land be lost for the highway, but that new or

refurbished military buildings would be unsuitable for location within 50 metres of the security fence line. For existing buildings, facilities and operational areas within that zone, including the officer's mess, a risk assessment would need to be undertaken, which may result in the need for buildings to be vacated, and in some cases demolished, and re-provided further into West Camp. This impact on operational buildings and area would not be acceptable to the MoD.

- Land for development: This option would not affect the development land available for DTC. However, it would have a significant detrimental effect on West Camp because of the land lost for the provision of the highway through the southern part of West Camp, as noted above. In addition, although the new road would be a private road, the security arrangements in relation to the ABP North spine road running along the eastern boundary of West Camp would need to be reviewed as a result of the increased levels of traffic transiting ABP North. ABP North is a constrained site area lying between the disused cross runway and the secure fence line of West Camp and in order to accommodate the size of hangars proposed with sufficient aircraft turning space the proposed new spine road has been located as close as possible to West Camp, with a resulting CTM requirement within West Camp which sterilises land within West Camp. This spine road has been designed as a 30 mph industrial standard service road with a footpath on one side only and with no dedicated provision for cyclists. The road could accommodate the increased levels of traffic transiting through ABP North with a reduction of the speed limit to 20 mph; however, the provision of a 3 m wide cycleway along the western side of the road would necessitate the movement of the road alignment slightly eastwards into the ABP North developable area. Although this is not a significant increase in land take for the spine road, even this small amount would mean that the proposed layout for ABP North and the number and type of hangars required could not be achieved. The large hangars for ABP target aircraft need not only a large, level ground footprint, but substantial areas of associated, level apron and taxiways for manoeuvring. In addition, an area of land within ABP North would need to be provided to accommodate appropriate security facilities at the northern access gate to the new private road. ABP South would not be affected.
- Built environment: Although the majority of the existing hangars within the St Athan site could be utilised for development if required, this option could restrict the usability of the hangars located on the western side of ABP North and would require the demolition of the large workshop building (215). In addition, as noted above, there would potentially be a loss of buildings within West Camp.
- Segregation of access: In theory, this proposal would provide separate accesses to DTC and ABP North. ABP North would be accessed via the new road from the B4265, with a secondary, northern access onto Eglwys Brewis Road. DTC would be accessed off Eglwys Brewis Road. However, unless DTC traffic used Eglwys Brewis Road only, DTC would be accessed via the new road running through ABP North. This would mean that DTC traffic would need to pass through three security gates: at the junction of the new road with the B4265, at the junction of the ABP North spine road with Eglwys Brewis Road and then at the DTC main gate. This would have serious implications in terms of delays to traffic movement, which would likely result in DTC traffic using either the western section of Eglwys Brewis Road or the road through St Athan village to access the main DTC site. The use of the new road for DTC traffic transiting ABP North would change what is effectively a service road only

servicing premises within a secure ABP into a main distributor road, thereby increasing the amount of potential access into secure zones. This would result in the need for additional fencing and security and could present potential increased health and safety hazards such as Foreign Objects and Debris (FOD) and/or damage to aircraft. Access to West Camp would be unaffected by the proposal, although the existing road running from the entrance through the southern part of West Camp could be affected by the need to locate the new road outside the obstacle limitation transitional surfaces. ABP South would be accessed separately, directly from the B4265. For the public facilities at DTC, separate accesses would be provided off Eglwys Brewis Road.

- Security of facilities: The security of facilities at DTC and ABP South would be unaffected by this option. The security of facilities at West Camp would be significantly affected, as the new road would result in all boundaries of West Camp being exposed to public highway or publicly accessible areas, with the associated CTM requirements. For ABP North, the security of facilities would be compromised by DTC traffic travelling through the ABP North site in order to get to their main gate. Aerospace companies likely to be attracted to St Athan would require secure facilities and, therefore, additional fencing of internal access roads and premises would need to be provided to prevent transiting traffic from entering such areas. There would be two access points to ABP North, with the associated duplication of security requirements and facilities. For DTC traffic, as noted above there would be a need to pass through three security check points in order to get to the main DTC site from the B4265, leading to delays in their access to the DTC.
- Cultural heritage: No adverse effects on archaeological heritage sites have been identified, but demolition of the Officer's Mess at West Camp would be required for this option.
- Biodiversity: This option has the potential to impact upon reptile populations behind the officers' houses at West Camp and a bat roost (likely to be single male pipistrelle roost). Effects could be reduced through appropriate mitigation and compensation.
- Landscape: The western end of the access is located on the northern edge of the Glamorgan Heritage Coast. This is within the LANDMAP visual and sensory Heritage Coast Hinterland aspect area and assessed as outstanding. The area is of high sensitivity and, with the change arising from loss of hedges and existing roadside planting to the B4265, there would be a resulting adverse effect. To the east of the B4265 and the railway, the western section of this option crosses open grassland, and includes the removal of established planting associated with the railway, the demolition of residential properties on Llantwit Road, the potential demolition of the officers' mess and other buildings within West Camp, and loss of associated landscape planting; this would result in an adverse effect.

Individual residential receptors on Llantwit Road, Boverton Road, Rock and Blackbird Roads, which are high sensitivity, would experience significant change arising from the adjacent highway earthworks and therefore adverse effects. These properties and adjacent residential areas would also experience a significant change in night-time views as a result of light trespass from the highway lighting and the adverse effects from the glare of vehicle headlights.

The central and northern section of route is brownfield, within the LANDMAP visual and sensory MoD St Athan aspect area, which has an overall low evaluation and sensitivity.

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December 2009



Jynodieth Cynullid Cymru  
Welsh Assembly Government

There would be views from public right of ways within the Glamorgan Heritage Coast south of the B4265, which would result in an adverse effect.

- Hydrology/ flooding: This route has not been subject to a detailed drainage assessment. The option of a western access would have the surface water runoff from the highway directed towards the Boverton Brook. As the existing West Camp surface water sewerage system is considered to be at capacity, a new system would be required to drain the additional highway area. Depending on the levels relative to the Boverton Brook, the proposed system would either be constructed deep to cross under the railway cutting or carried above the tracks on a substantial pipe bridge.
- Railway: This option would require the construction of a new bridge over the railway. This could pose timing difficulties, as it would need to be in place at an early stage to facilitate construction access and to serve the DTC development on opening in 2014. (This disadvantage does not apply to the SAR to serve ABP South, as that access does not serve DTC and is not critical to its implementation and opening.)
- Runway and disused cross runway: This option avoids the need to cross the runway or disused cross runway.
- Runway operation and safety, including obstacle limitation surfaces: From a runway operational viewpoint, the position shown on the Colin Buchanan plans is not an acceptable option as the new road infringes the obstacle limitation approach surface and transitional surface contours. A route that satisfied the requirement to remain outside these surfaces would need to be located further north within West Camp, creating CTM and loss of usable land issues for MoD .
- Special landscape area: This option would not affect the Lower Thaw Valley SLA.
- Glamorgan Heritage Coast: The route for this option generally lies outside the Glamorgan Heritage Coast, although the junction with the B4265 may impinge on its northern edge.
- Conservation areas: This option is located directly south-east of the Boverton Conservation Area.
- UDP Policy EMP10 – RAF St Athan employment site: This option would not have a detrimental effect on this policy area.
- Land quality: Agricultural land quality would not be a constraint to this option.
- St Athan village: This option would not physically affect St Athan village. Traffic travelling from the east may attempt to use the existing highway network running through St Athan village as a route to DTC, particularly to avoid the need to pass through three security control points; this would need to be discouraged through the entrance design for DTC restricting access from the east. However, this would result in potentially more traffic using the western end of the currently unsatisfactory and difficult to improve Eglwys Brewis Road. As noted in the section above regarding the option for the on-line improvement of Eglwys Brewis Road, such improvement could be problematical in terms of traffic management and service diversions, with severe delays and disruption to traffic movements likely, and the construction of a new bridge beneath a live railway track would be extremely difficult and the temporary closure of the line may be required. A residential property and a business property would need to be demolished to accommodate the road widening and there are a considerable number of residential properties that would be close to this upgraded road, which could experience deterioration in environmental quality. The widening of the carriageway and the provision

of compensatory flood storage with associated loss of vegetation and habitat would result in significant disturbance to the valuable wildlife corridor along the Boverton Brook.

- Public rights of way: The new section of road would not affect any public rights of way, although an appropriate footpath and crossing facilities would need to be provided along parts of Eglwys Brewis Road affected by the proposals.
- Accessibility for pedestrians and cyclists: Access to ABP North from Llantwit Major would be via the new road access from the west. Although access to DTC from Llantwit Major could be via the new road running through ABP North, this would involve the negotiation of three security checkpoints, which would likely discourage its use for general purposes. Pedestrians and cyclists would therefore be likely to use the western section of Eglwys Brewis Road, where there is limited provision for cyclists and pedestrians. Although improvements to footpaths could potentially be accommodated along parts of the western section of Eglwys Brewis Road or the adjoining Eagle Road, provision would not be continuous, particularly for cyclists, because of physical and ecological constraints. It would be unlikely that this section of highway would be quiet, as it would be used as a short cut for traffic travelling from the west to get to DTC. Access from St Athan village would be via Cowbridge Road and Eglwys Brewis Road.
- Public transport: Bus services would continue to run along Eglwys Brewis Road and through St Athan village (rather than using the private road running through ABP North) allowing DTC and ABP North, as well as the existing residential areas, to be well served by bus. The train station in Llantwit Major could be accessed from DTC and ABP North via bus, although provision for pedestrians and cyclists along the western section of Eglwys Brewis Road would be likely to be limited.
- Accessing new public facilities: The public facilities at DTC would be accessed off Eglwys Brewis Road. Access from St Athan village, East Vale and Eglwys Brewis would be via the existing highway along Cowbridge Road and Eglwys Brewis Road. However, access from Llantwit Major would be along the existing western section of Eglwys Brewis Road.

517 It was suggested during public consultation that a new access be constructed from the B4265 from the west through West Camp, instead of the currently proposed NAR. Such a scheme would not obviate the necessity for the SAR.

518 An access through West Camp is physically possible, but is unacceptable to MoD as it would prejudice the efficiency, viability and operation of the existing West Camp through adverse impacts, including: loss of buildings, reduction in development land and additional security requirements to accord with national counter-terrorism measures.

519 The Welsh Assembly Government would not support the loss of developable land within the ABP, which would adversely affect the economic viability and efficiency of its proposals. The introduction of DTC through traffic into ABP North would change what is effectively a service road, only serving premises within a secure ABP, into a main distributor road, thereby increasing the amount of potential access into secure zones and creating additional security and health and safety issues (that is, access to airfield airside and

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FOD hazards). There would be additional requirements for the fencing of internal access roads and premises to prevent transiting traffic from entering ABP areas. Nor would the Welsh Assembly Government support activities that would infringe the safeguarding of the airfield.

520 With the new road through West Camp being a private road and the associated need for DTC traffic using it to pass through three security check points, it would be highly likely that traffic accessing DTC would use the existing highway network rather than the new road, either passing through St Athan village if travelling from the east or along Eglwys Brewis Road if travelling from the west. Neither of these routes would be capable of accommodating the additional traffic without improvement, and such improvements would be unacceptable on physical or environmental grounds.

521 The MoD, Metrix and Welsh Assembly Government consider that an access through West Camp would introduce unmanageable difficulties for the DTC and ABP, as it would be necessary to construct a new railway crossing to enable the main site construction activities to commence. Any new crossing would require the formal approval of Network Rail and would result in considerable delay to the project through negotiation and construction of the new bridge. This option would require a separate road from the B4265 to access ABP South.

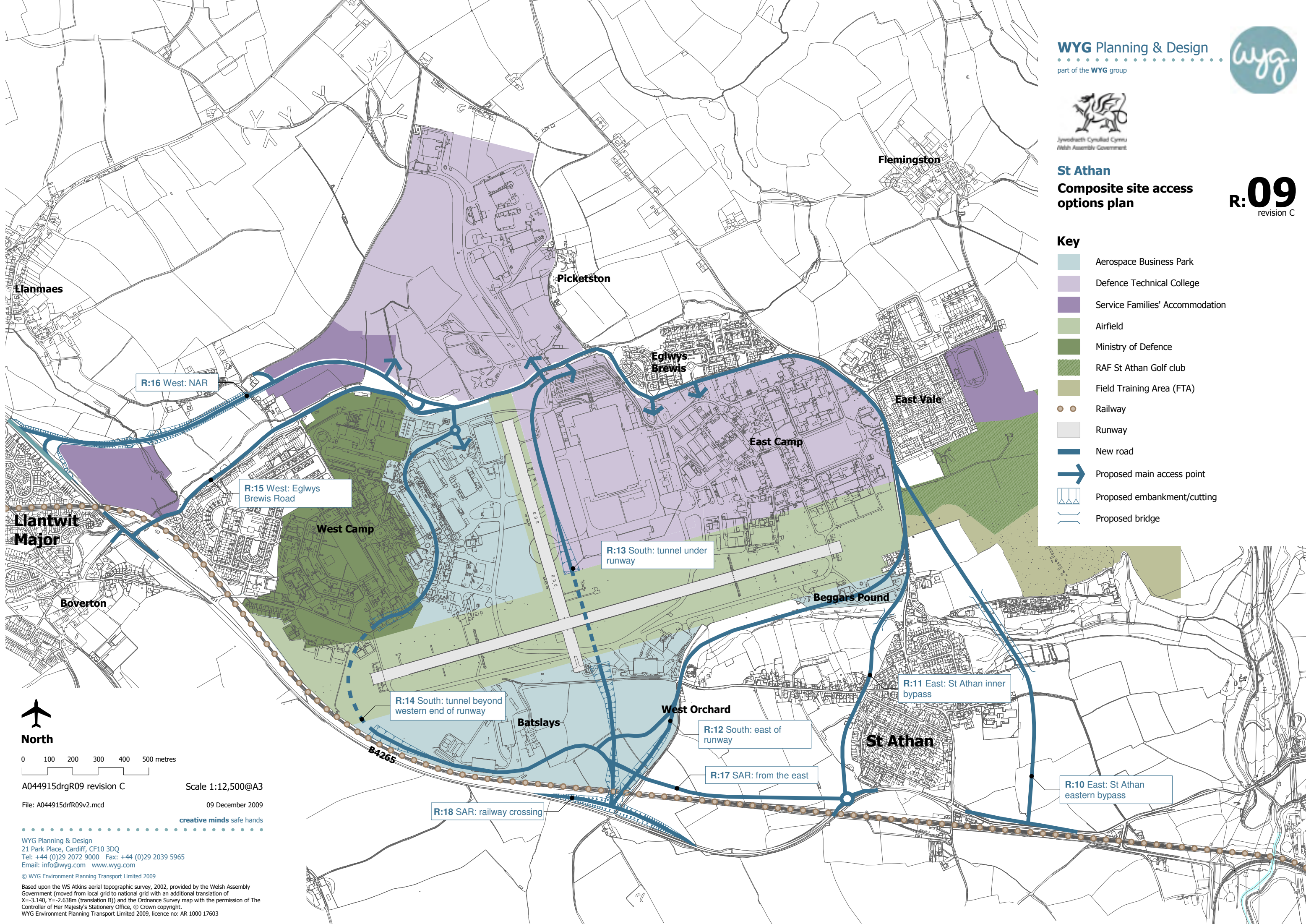


### St Athan Composite site access options plan

R:09  
revision C

#### Key

- Aerospace Business Park
- Defence Technical College
- Service Families' Accommodation
- Airfield
- Ministry of Defence
- RAF St Athan Golf club
- Field Training Area (FTA)
- Railway
- Runway
- New road
- Proposed main access point
- Proposed embankment/cutting
- Proposed bridge



North

0 100 200 300 400 500 metres

A044915drgR09 revision C

Scale 1:12,500@A3

File: A044915dfr09v2.mcd

09 December 2009

creative minds safe hands

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# ***APPENDIX B NORTHERN ACCESS ROAD GENERAL ARRANGEMENT DRAWINGS***





**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).

- Construction
- WORKING ON AND ADJACENT TO LIVE CARRIAGEWAY
- LIVESTOCK IN ADJACENT LAND
- DEEP CUTTING IN THIS AREA, STABILITY OF GROUND COULD BE AFFECTED

**NOTES**

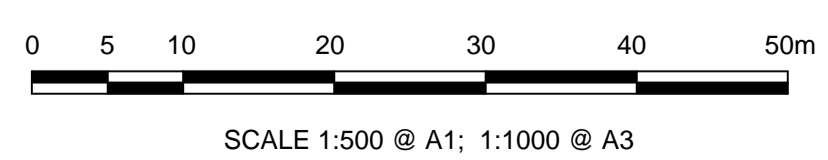
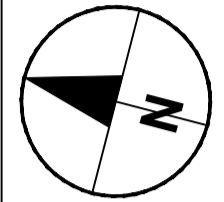
- ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT SPECIFICATION AND THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS.
- ALL WORKING HOURS AND TRAFFIC MANAGEMENT MEASURES ARE TO BE AGREED WITH THE LOCAL HIGHWAY AUTHORITY AND DEPLOYED IN ACCORDANCE WITH CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL.
- LOCATION OF SITE COMPOUND TO BE AGREED WITH THE LOCAL HIGHWAY AUTHORITY PRIOR TO WORKS COMMENCING. ALL MOVEMENT OF PLANT SHOULD BE IN ACCORDANCE WITH RECOGNISED GOOD INDUSTRY PRACTICE. BANKSMEN SHOULD BE PROVIDED WHEN REQUIRED.
- THE GENERAL PUBLIC SHOULD BE SEPARATED FROM THE WORKS WITH ADEQUATE LATERAL CLEARANCE AND APPROPRIATE SAFETY ZONES PROVIDED IN ACCORDANCE WITH CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL.
- ACCESS TO PRIVATE PROPERTIES MUST BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE AGREED WITH THE AFFECTED PARTY AND THE LOCAL HIGHWAY AUTHORITY.
- MEASURES SHOULD BE DEPLOYED TO ENSURE NOISE, VIBRATION AND DUST IS MINIMISED.
- ALL BURIED SERVICES ARE TO BE POSITIVELY LOCATED ON SITE PRIOR TO EXCAVATION. CAT SCANS SHALL BE COMPLETED PRIOR TO EXCAVATION WITH SERVICE LOCATIONS MARKED UP ON SITE. OPERATIVES SHALL

EMPLOY HAND DIGGING METHODS WHEN WORKING IN CLOSE PROXIMITY TO BURIED SERVICES. STATUTORY UNDERTAKER'S PLANT SHALL BE PROTECTED AS NECESSARY. ADDITIONAL TRIAL PITS SHALL BE EXCAVATED AS REQUIRED.

8. FINAL LAYOUT OF PUBLIC RIGHT OF WAY TO BE AGREED.

**KEY**

- PROPOSED WHITE ROAD MARKINGS
- PROPOSED YELLOW ROAD MARKINGS
- PROPOSED CARRIAGEWAY
- PROPOSED SHARED FOOTWAY/CYCLEWAY
- PROPOSED VERGE
- PROPOSED CUT
- PROPOSED EMBANKMENT
- PROPOSED TRAFFIC ISLAND
- PROPOSED MAINTENANCE HARDSTANDING
- PROPOSED DRAINAGE FEATURE
- PROPOSED MAINTENANCE CORRIDOR
- LIMIT OF DESIGN
- EXISTING WATER COURSE
- AREA FOR CONTRACTOR'S COMPOUND
- EXISTING PUBLIC RIGHT OF WAY
- PROPOSED TACTILE PAVING
- PROPOSED CULVERT
- 150 PROPOSED CHAINAGE
- PROPOSED BOLLARD
- PROPOSED ACCESS TRACK
- PROPOSED BRICK OVERRUN AREA



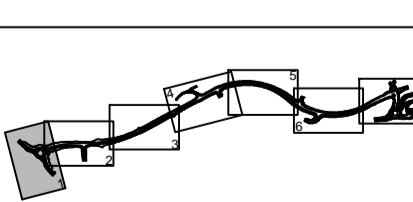
**STATUS**

PLANNING PERMISSION ISSUE

**ISSUE/REVISION**

NO	DATE	DESCRIPTION
A	27-03-17	PLANNING SUBMISSION ISSUE

**KEY PLAN**



**PROJECT NUMBER**

60509148

**SHEET TITLE**

ST.ATHAN  
GENERAL ARRANGEMENT  
SHEET 1 OF 8

**SHEET NUMBER**

60509148-SHT-30-0000-CT-0121

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