

AECOM



St Athan
Northern Access Road
Design and access statement and planning statement
May 2017



Llywodraeth Cymru
Welsh Government

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Welsh Government
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St Athan
Northern Access Road
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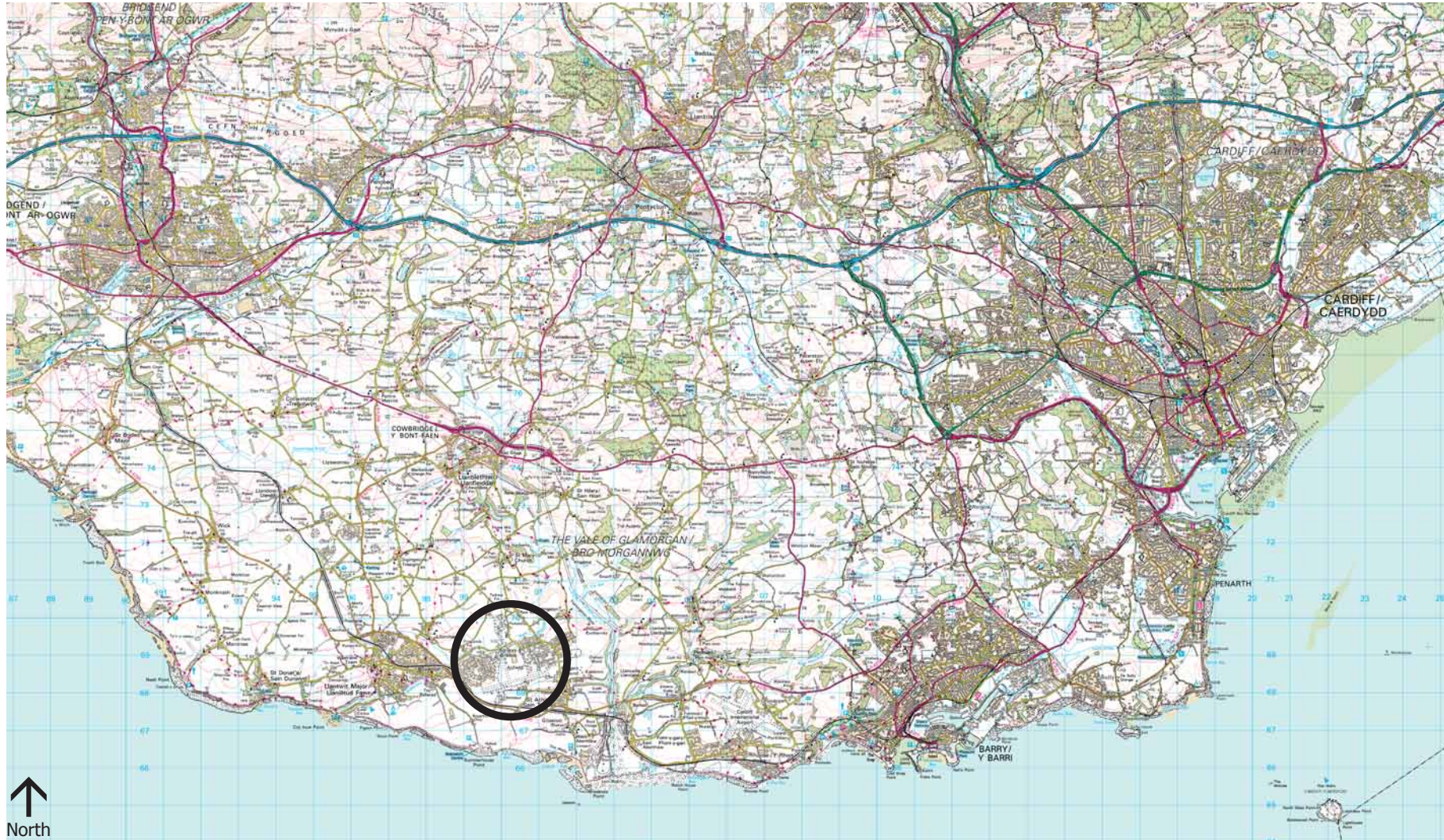
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(not to scale)



1 Introduction

Purpose of the report

101 This document – which comprises a design and access statement and a planning statement – accompanies an application for full planning permission to build a new highway, called the Northern Access Road (NAR), at St Athan in the Vale of Glamorgan: see **Figure 01** and **Figure 02**.

102 The purpose of the NAR is to provide high quality, direct access to existing and future employment development at the St Athan Aerospace Business Park (ABP), including the new Aston Martin car manufacturing facility, and to new housing sites proposed by the Vale of Glamorgan Council. Existing access to the ABP is via the Ministry of Defence military camp as a temporary arrangement and is not regarded as an appropriate long-term solution.

103 Subject to the grant of planning permission and any other statutory procedures, the Welsh Government intends to construct the NAR for an opening date in 2019.

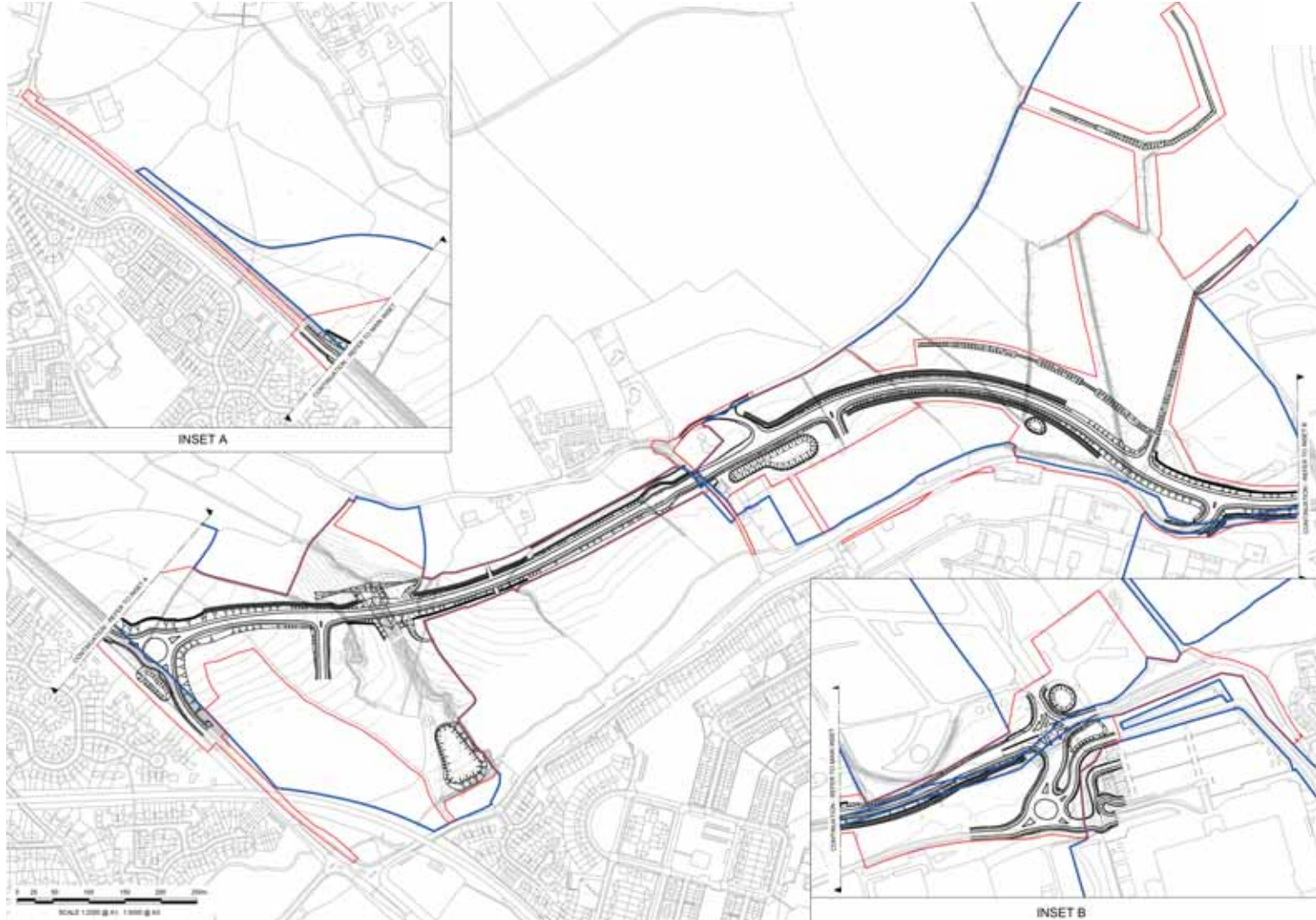
The proposed development

104 The planning application is submitted on behalf of the Welsh Ministers for consideration by the Vale of Glamorgan Council in its role as the local planning authority for the area in which the site is located.

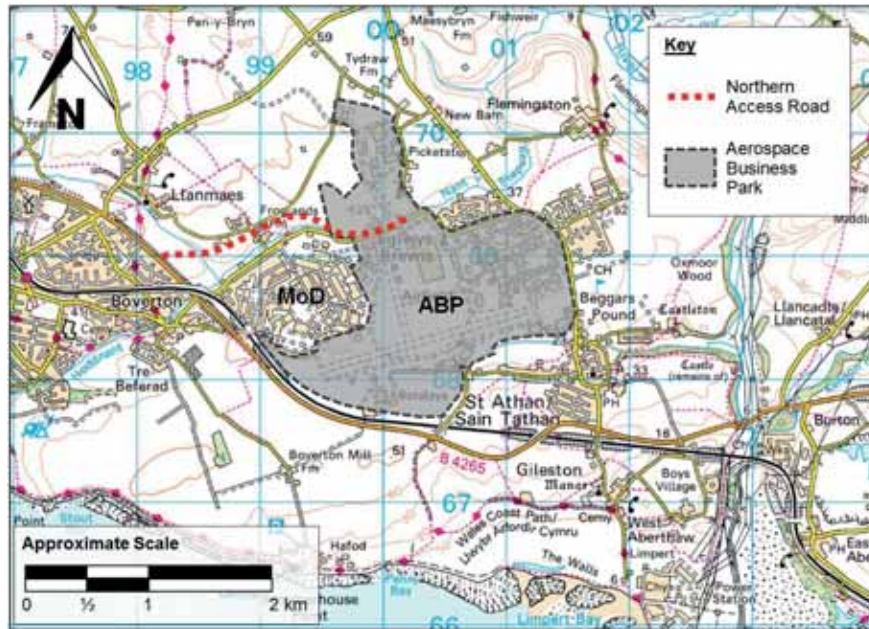
105 The application seeks planning permission for development described thus:

“Proposed construction of a new highway (called the Northern Access Road) with footways and a cycleway, new junctions, lighting, signs, fencing, flood alleviation works, acoustic barriers and other environmental mitigation measures, landscaping, demolition of garage at Rose Cottage, and all associated engineering and building operations.”

Below **Figure 03** Extract from AECOM drawing number 60509148-SHT-30-0000-CT-3020 revision B **Planning application boundary** (not to scale)



Below Figure 02 Site identification (not to scale)



106 The development is illustrated on a series of application drawings, a full list of which is included as **Appendix 1** to this report. The application is accompanied by a full suite of reports, a list of which is included as **Appendix 2** to this report. The range of reports necessary to support the application was agreed in advance with the Vale of Glamorgan Council.

The application site

107 The application site is shown edged in red on **Figure 03**. Other land in the ownership of the Welsh Ministers is shown edged in blue on the same plan.

Pre-application consultation

108 The application seeks permission for development on a site having an area of 1 hectare or more and is therefore classified as “major development” under article 2 of the **Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (2012 Order)**, as amended. Before it was submitted, the application was therefore subject to statutory pre-application consultation in accordance with section 17 of the **Planning (Wales) Act 2015**.

109 As well as the required statutory consultation, the Welsh Government has undertaken additional consultation on a voluntary basis. A range of bodies and interested parties have been consulted on the proposal. These include:

- Vale of Glamorgan Council:
 - Drainage authority
 - Highway authority
 - Planning authority.
- Community councils:
 - Llanmaes Community Council
 - Llantwit Major Town Council
 - St Athan Community Council.
- Other statutory consultees:
 - Glamorgan Gwent Archaeological Trust
 - Natural Resources Wales.
- Local landowners.

110 Public consultation events were held at three venues in the locality:

- The Gathering Place, Flemingston Road, St Athan CF62 4JH between Thursday, 17 November and Tuesday, 22 November 2016 inclusive, with an evening

viewing on Wednesday, 16 November for elected representatives, local landowners and other invitees.

- Llantonian Hall, Boverton Road, Llantwit Major, CF61 1TF on Wednesday, 7 December and Thursday, 8 December 2016.
- Llanmaes Village Hall, Sigingstone Lane, Llanmaes, CF61 2WJ on Thursday, 15 December 2016.

Reports on both public consultations are included in the suite of documents that are submitted in support of the planning application.

Requirements for the design and access statement

111 Article 7 of the 2012 Order (as amended) sets out those classes of development for which planning applications are required to be accompanied by a design and access statement. As the proposal comprises "major development", a design and access statement is a statutory requirement for this application.

112 The requirements for a compliant design and access statement are set out in article 7(4) of the amended Order, namely to:

- explain the design principles and concepts that have been applied to the development;
- demonstrate the steps that have been taken to appraise the context of the development and how the design of the development takes that context into account;
- explain the policy or approach adopted as to access and how policies relating to access in the development plan have been taken into account; and
- explain how any specific issues which might affect access to the development have been addressed.

113 In preparing this statement regard has been had to the advice provided in the following documents:

- **Planning Policy Wales**;¹
- **Technical Advice Note 12: Design**;²
- **Guidance on Design and Access Statements**, Welsh Government, March 2016;³ and
- **Site & Context Analysis Guide**, Welsh Government, March 2016.⁴

Environmental impact assessment

114 In order to determine whether the proposed development is "EIA development", the applicant made a request to the local planning authority under regulation 5 of the **Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2016** for a formal determination as to whether the application would need to be accompanied by an environmental statement. On 20 April 2016 the authority issued an EIA screening opinion (reference 2016/00291/SC1) confirming that the proposed development is not "EIA development" and, as such, that the application does not need to be accompanied by an environmental statement. Notwithstanding this, the application is in fact accompanied by a full suite of supporting documents (see list in **Appendix 2**).

¹ **Planning Policy Wales**, Welsh Government, edition 9, November 2016.

² **Technical Advice Note 12: Design**, Welsh Government, March 2016.

³ **Technical Advice Note 12: Guidance on Design and Access Statements**, Welsh Government, March 2016.

⁴ **Site & Context Analysis Guide: Capturing the value of a site**, Welsh Government, March 2016.

2 The site as existing

Location

201 The regional location of the site is shown on **Figure 01**.

202 The site lies in the Vale of Glamorgan, an area primarily rural in character, with the majority of the population living in the towns of Barry and Penarth, and the smaller settlements of Dinas Powys, Rhoose, Cowbridge and Llantwit Major. Scattered around the attractive countryside between these places are small villages and hamlets. MoD St Athan is located to the north-west of St Athan, about 5 miles south of Cowbridge and about 3 miles east of Llantwit Major. There are minor settlements to the north of MoD St Athan: Eglwys Brewis, Llanmaes, Picketston, St Mary's Church and Flemingston. The B4265, which links Barry and Bridgend, lies to the south of MoD St Athan.

203 The application site for the NAR is 35.1 hectares: see **Figure 03**. This includes land required for flood risk mitigation, drainage, construction access, construction compounds, landscaping, etc.

Land ownership

203 All of the land required for the proposed development, including the land required for construction access, is either in the ownership or control of the Welsh Ministers, or is highway land.

Current land uses

204 The application site is predominantly in agricultural use. Parts of the site comprise existing highways and land in employment use within the ABP.

Physical factors

Geology

205 Reference should be made to AECOM's **Preliminary Sources Study Report (PSSR)**,¹ which has been prepared in accordance with **Design Manual for Roads and Bridges** standard **HD 22/08**² and which provides an overview of the site's geology. A summary is provided below.

206 The geology of the site has been assessed by making reference to the British Geological Survey's (BGS) 1:50,000 geological map of Bridgend – Sheet 262 (Solid and Drift) and selected historical borehole records obtained from the BGS for the surrounding area. The BGS borehole records generally support the published geology.

207 The underlying geology is considered to comprise Made Ground, in previously developed areas only, underlain by alluvium in the vicinity of watercourses, and interbedded limestones and mudstones of the Porthkerry Member. The site geology is classified as a Secondary A aquifer and is not located within, or in the close vicinity of, a Source Protection Zone.

208 Based on the published information available, the table below presents a summary of the anticipated geology for the site. All strata thicknesses are based on the geological map unless stated.

Geology	Name	Geological map description/ anticipated presence	Thickness (m)
Made ground	Not applicable	Not mapped, but anticipated in areas that have been previously developed. Most of the area however is greenfield and it is therefore not anticipated in these areas.	Up to 1.3
Superficial	Alluvium (Quaternary)	Clay, silt, sand and gravel. Appears to be present only in proximity to watercourses in the area.	Not indicated
Solid	Porthkerry Member (Blue Lias Formation)	Interbedded limestone and mudstone.	120 + ³

209 An Envirocheck Report has been commissioned which indicates no ground stability hazards in relation to compressible shrinking or swelling clay and running sand ground stability, across the route. A very low hazard potential has been identified on site in relation to collapsible, ground dissolution and landslide ground stability.

210 The site is not within an area affected by coal mining. There is no hazard listed in relation to the non-coal mining related mined areas of Great Britain. Historical

¹ St. Athan Northern Access Road: Preliminary Sources Study Report, AECOM, October 2016, ref: 60509148/PSSR/0.

² Design Manual for Roads and Bridges, Volume 4 Geotechnical and Drainage, Section 1 earthworks, Part 2, HD22/08 Managing Geotechnical Risk, Highways England, continually updated: <https://www.gov.uk/guidance/standards-for-highways-online-resources#the-design-manual-for-roads-and-bridges>

³ Only 15 m proven in BGS historical borehole record SSNE54 and SS96NE51.

mapping indicates the site has remained largely in open pasture. However, there are a number of historical open cast limestone quarries along the proposed route which have now ceased operation. Within 250 m of the proposed route they are located at Parwg, Boverton (40 m to the south of the site at chainage 420 m) and Great Farm, Llanmaes (68 m to the north of the site at chainage 940 m).

Hydrogeology

211 The underlying bedrock is classified as a Secondary A Aquifer. This relates to the Porthkerry Member bedrock geology. The Environment Agency (EA) classifies Secondary A aquifers as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

212 Groundwater strikes were recorded within the weathered Porthkerry Member at 0.32 m below ground level (bgl), 0.72 m bgl and 0.8 m bgl respectively. One groundwater strike was recorded within the unweathered Porthkerry Member at 3.3 m bgl. Groundwater strikes were also observed at shallow depths within the Made Ground at 0.5 m bgl suggesting a perched water table within this unit.

213 There are no superficial deposits indicated along the proposed route. There are however alluvium deposits associated with surface water courses within 500 m of the site, which are also designated as a Secondary A Aquifer.

214 The site is not in a groundwater source protection zone (SPZ) as defined by the EA and there are no SPZ limits identified within 1 km.

215 The Envirocheck Report records two groundwater abstraction licences within 1 km of the site. Both water abstraction licences are held by the Welsh Government at MoD St Athan. There is one discharge consent to groundwater on site, and nine other discharge consents to groundwater listed within 1 km of the site. The discharge

consent on site is operated by Kelda Water Services and used for fire training at MoD St Athan. The receiving water is a tributary of the Boverton Brook described as a freshwater stream/river. Discharge consents within 1 km of the site have been held by Air Ministry Works (unspecified discharge), Kelda Water Services (trade effluent), De Smt (site drainage), and Dŵr Cymru Cyfyngedig (sewage discharges).

Hydrology

216 Llanmaes Brook, which is classed as a primary river, crosses the proposed route running north to south at chainage 480 m, towards the western end of the route. At chainage 1,560 m an unnamed tertiary river runs north to south of the route, converging with Boverton Brook at chainage 1,590 m south of the route, which then runs parallel to the route.

217 At the eastern extent of the proposed route, a spring is noted at chainage 2,200 m flowing to the east, which becomes the Nant y Stepsau primary river at chainage 2400 m.

218 The site is noted as being at risk from flooding from surface waters according to the flood risk maps published by Natural Resources Wales (NRW). A flood water storage area is indicated where the Llanmaes Brook crosses the route at chainage 480 m and classed as having a low risk (1,000 year return) of extreme flooding without defences. Between chainage 1,500 m and chainage 1,600 m in the middle of the route a low risk of extreme flooding without defences is also noted. A low risk of flooding is also noted between chainage 1,700 m and chainage 2,400 m in the east of the proposed route.

219 There are four discharge consents to surface water listed within 1 km of the site, of which two have expired and two were surrendered under **The Environmental Permitting (England and Wales) Regulations 2010**.

220 There are fifteen recorded pollution incidents to controlled waters within 1km of the site, ten of which are located within 500 m. The nearest of these is located 146 m south east of the site (chainage 1180 m) and relates to a 'Category 2 – Significant' to waters. This occurred in 2011 and the pollutant is listed as 'Organic Chemicals/ Products: Surfactants and Detergents'.

Flood risk

221 **TAN 15: Development and Flood Risk**⁴ requires that all potential flood sources that could affect the proposed development be considered. The following provides an overview of the existing flood risk.

222 **Tidal:** tidal flood sources include both the sea and estuaries. The assessment of tidal flood risk takes into account the site's distance from the Severn Estuary (approximately 2.5 km) and minimum ground levels on site (approximately 42 m AOD). This assessment has identified that there is no tidal flood risk posed to the development site.

223 **Fluvial:** the proposed Northern Access Road crosses both Boverton Brook and Llanmaes Brook, a tributary of Boverton Brook. A third watercourse is located at the east end of the site, Nant y Stepsau. A series of field drains act as conduits for overland flow from the surrounding agricultural fields and outfall into Boverton Brook.

224 The village of Llanmaes, which is located upstream of the proposed NAR, has historically suffered from surface water flooding. The town of Boverton, which is located downstream of the NAR, has also suffered frequent fluvial flooding in the past.

Below **Figure 04 Risk of flooding from rivers and sea** (not to scale)



225 Areas within the proposed development site have suffered from fluvial flooding in the past, specifically land around Froglands Farm. This area is a low point and key conveyance route, and the capacity of the bridge located immediately downstream of Froglands Farm may be exceeded at times of high flow.

226 The publicly-available NRW **Flood risk map** is provided in **Figure 04**. This presents the undefended fluvial flood extents for Flood Zone 2 (land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% to 0.1%)) and Flood Zone 3 (land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%)). The proposed road alignment is also shown in red.

⁴ **Technical Advice Note 15: Development and Flood Risk**, Welsh Assembly Government, July 2004.

227 It can be seen that the location of the watercourse crossings of the proposed NAR are within Flood Zone 3 and considered to be at high risk of flooding.

228 Taking the above information into account, the risk posed from fluvial flood sources to the proposed highways development is considered to be medium to low as a result of the proposed highway being designed above existing ground level in areas near to the flood extents. However, the proposed scheme will encroach upon the flood plain. As a result of these issues, additional modelling work has been conducted to understand the associated risks and develop mitigation measures. This is discussed further in paragraph 481 et seq.

229 An existing flood defence structure, comprising an embankment and culvert, is located on Llanmaes Brook just south of the proposed NAR. The area to the north of this structure is used as flood storage.

230 Overland flow: Overland flow results from rainfall that fails to infiltrate the surface. This is exacerbated where the permeability of the ground is low owing to the type of soil and geology (such as clayey soils) or urban development. Surface water flow may also occur in areas where steep topography can rapidly convey water that has failed to penetrate the surface or where the ground may already be saturated.

231 The British Geological Survey historical boreholes indicate that clay soils are present at the site in areas surrounding the watercourses. Therefore, infiltration of rainwater may be limited, resulting in higher surface water runoff rates compared with more permeable soils (such as sandy soils).

232 The area to the south of the proposed road (along the existing Eglwys Brewis Road) and to the east of the proposed scheme, where the NAR is proposed to re-join the existing highway, is at medium to low risk of surface water flooding.

233 Taking into account the information above, the risk posed from surface water/overland flow is considered to be medium. The proposed scheme will affect the land drainage network and overland flow paths that contribute to the areas of surface water flood risk. Therefore a hydraulic model has been undertaken and mitigation measures developed. This is discussed further in paragraph 481 et seq.

234 Sewer flooding: flooding can occur as a result of infrastructure failure e.g. blocked sewers or failed pumping stations. Sewer flooding can occur when the system surcharges due to the volume or intensity of rainfall exceeding the capacity of the sewer, or if the system becomes blocked by debris or sediment.

235 The proposed scheme is located within agricultural fields and an existing highway. Given that the proposed ground levels (embanked highway) are above existing ground levels, the risk sewer flooding poses to the development area is considered to be negligible.

236 Ground water: ground water flooding occurs where groundwater levels rise above ground surface levels. The geology has a major influence on where this type of flooding takes place; it is most likely to occur in low-lying areas underlain by permeable rocks (aquifers).

237 The superficial and bedrock geology underlying the site has been classified as a minor aquifer; it is an important source of base flow to rivers, but not considered significant for water supply at a strategic scale.

238 Boreholes available from the British Geological Survey indicate that groundwater is typically encountered at depths between 0.3m and 3m across the site. However, the regions of clay soil located above these groundwater bearing soils are likely to form an impermeable layer, preventing shallow groundwater from rising above ground surface levels.

239 Based on the above information, groundwater flooding is considered to present a negligible risk to the proposed development area as the majority of the road is to be constructed above the existing ground level.

240 Artificial sources: artificial flood sources include raised channels such as canals or storage features such as ponds and reservoirs. The **NRW Flood Risk from Reservoirs Map** indicates that the nearest area at risk to the proposed scheme is located along the River Thaw, approximately 1.8 km away. As the proposed development area is located outside of maximum flood extent, combined with the low likelihood of a reservoir breach occurring, the risk from this flood source is negligible.

Ground conditions

241 A PSSR and **Ground Investigation Report (GIR)**⁵ have been prepared in accordance with the **Design Manual for Roads and Bridges** standard **HD 22/08**.⁶ The GIR provides details of a ground investigation that was undertaken by AECOM in November and December 2016.

242 The ground investigation generally confirmed the site geology to be in accordance with that listed in the table at paragraph 208 of this report. However, the investigation highlighted the presence of a thin covering of alluvium across the site, which was not suggested by the published geological records. This is attributable to the presence of the watercourses that cross the site.

243 A summary of the geotechnical parameters derived from the ground investigation is provided in the following table.

⁵ **St. Athan Northern Access Road (NAR): Ground Investigation Report**, AECOM, February 2017, ref: 60509148/GIR/0.

⁶ **Design Manual for Roads and Bridges**, Highways England, continually updated: <https://www.gov.uk/guidance/standards-for-highways-online-resources#the-design-manual-for-roads-and-bridges>: **Volume 4 Geotechnics and Drainage, Section 1 Earthworks, Part 2 HD 22/08 Managing Geotechnical Risk**.

Parameter	Unit	Value/range (average)	Justification
Alluvium			
C_u	kN/m ²	30 - 69 (47)	Field Hand Shear Vane Tests (Bjerrum, 1960 correlation- applicable for soft clays); Lab Shear Vane Tests; Stroud (1975) correlation.
ϕ'	degrees	28	Bjerrum and Simons (1960).
Bulk density	kN/m ³	17.5	Laboratory test results.
Dry density	kN/m ³	13.5	Laboratory test results.
SPT-N ₆₀ (corrected)	-	12*	In situ test.
Moisture content	%	30 -39+ (33)	Laboratory test results.
Plasticity/ Modified plasticity index	%	19.5 - 21.8 (20.6)	NHBC (2014).
Plastic limit	%	23 - 34 (29)	Laboratory test results.
Liquid limit	%	46 - 62 (57)	Laboratory test results.
Volume change potential	-	Medium	NHBC (2014).

CBR	%	0.5 - 2 (1.1)	Laboratory test results.
Porthkerry Member			
ϕ'	degrees	35	Literature values (Waltham, 2009).
Bulk density	kN/m ³	15	Laboratory test results.
Dry density	kN/m ³	12	Laboratory test results.
SPT-N (uncorrected)		>50**	In situ test.
Moisture content	%	0.45 - 1	Laboratory test results.
Point load	MPa	1.47 - 6.9*** (3.5)	Laboratory test results.
UCS	MPa	29.4 - 159 (72.5)	Laboratory test results and Waltham 2009 correlation (20*I _c)
CBR	%	4 - 100 (65)	DCP tests.

- * One value recorded
- ** All values recorded were >50
- *** One value recorded over 6.9: value recorded as 16.4
- **** One value over 159
- + One MC value recorded as 19% but this is considered to be non-representative.

Land contamination

244 A phase 1 geo-environmental assessment has been prepared by AECOM⁷ in accordance with the requirements of Part IIA of the **Environmental Protection Act 1990** and the **Contaminated Land Statutory Guidance for Wales 2012**.⁸

245 The assessment identified a very low or low risk from contamination within the context of the proposed NAR. Previous investigations discovered localised contamination to both soil and groundwater across off-site areas to the north and the south. However, there is a very low potential for significant organic soil contamination to be present on site and the areas of identified petroleum hydrocarbon contamination in groundwater have undergone remediation. There has been a low risk identified from the presence of unexploded ordnance.

246 The phase 1 assessment has been supplemented by a ground investigation where soil and groundwater samples were analysed for the presence of contamination. No concerns have been identified.

Topography

247 The site generally comprises a relatively flat but gently undulating parcel of land at an approximate elevation of 42.0 m above Ordnance Datum (AOD). Llanmaes Brook crosses the western end of the site running on an approximate north/south alignment within a narrow valley. The level of the brook is approximately 36.5 m AOD where it crosses the proposed NAR. The western end of the site abuts the B4265 road which is situated within a cutting. The level of the B4265 is approximately 38.5m AOD where it meets the NAR.

⁷ **St Athan Northern Access Road: Phase 1 Geo-Environmental Assessment**, AECOM, December 2016, ref: 60509148/CFRP0006/1.

⁸ **Guidance Document: Contaminated Land Statutory Guidance – 2012**, Welsh Government, 2013.

248 Reference should be made to the topographical survey drawing.

Environmental factors

Statutory and non-statutory designations

249 The application site is not subject to any statutory or non-statutory environmental designations.

Cultural heritage and archaeology

250 An historic environment desk-based assessment has been undertaken to examine heritage assets at the site, including archaeological sites, the built heritage and historic landscapes, as well as considering the potential for previously unrecorded archaeological remains. Reference should be made to AECOM's **Historic Environment Desk-Based Assessment** report.⁹

251 The aim of the assessment was to identify potential constraints along the route of the road and to assess the potential effects of the development. The assessment examined heritage assets as well as considering the potential for previously unrecorded archaeological remains.

252 The assessment also considered the findings of previous studies including a risk-based assessment¹⁰ and environmental impact assessment¹¹ that had been undertaken previously in support of previous schemes.

253 The desk-based assessment was supported by the findings from geophysical surveys undertaken in 2002¹² and evaluation trenching undertaken for previous studies as well as more recent geotechnical ground investigations,¹³ which were undertaken under archaeological monitoring.

254 The assessment identified a range of assets within the study area, including one scheduled monument; seven listed buildings; two conservation areas; five sites of prehistoric date; three Roman sites; one early medieval site; seven sites with evidence of medieval date; twelve heritage assets with evidence of post-medieval date; five recorded sites of modern date in the study area; and one site of unknown date.

255 The range of recorded archaeological sites within the study area date from the prehistoric to the modern periods. The examples show the landscape has been heavily exploited from the prehistoric onwards, highlighting the change in the use of the landscape and importance of agriculture.

256 No previously recorded heritage assets have been identified within the footprint of the Northern Access Road. There is the potential for previously unrecorded archaeological sites to be identified during construction of the road and other associated infrastructure. This potential is highest for remains of prehistoric and Roman date due to the evidence of significant archaeological deposits from these periods in the surrounding area. Based on this information there is a potential for any previously unrecorded assets from these periods to be of medium or high significance (heritage value). No potential impacts on the setting of heritage assets have been identified.

⁹ St. Athan Northern Access Road: Historic Environment Desk-Based Assessment, AECOM, May 2017, ref: 60509148/LDRP0001/D.

¹⁰ Cotswold Archaeology, 2007.

¹¹ Entec, 2009.

¹² Stratascan, 2003.

¹³ AECOM, 2016.

257 During the construction and operation of the Northern Access Road the following types of impacts can be anticipated:

- physical impacts upon archaeological features during construction;
- impacts upon the setting of heritage assets during construction; and
- impacts upon the setting of heritage assets during operation.

258 Owing to the significant potential for previously unrecorded archaeological deposits to be found, a detailed programme of archaeological intervention will be agreed with the archaeological planning officer at the Glamorgan-Gwent Archaeological Trust (GGAT). This will be undertaken as a strip, map and record of the footprint of the road and any associated features. The archaeological works will be undertaken in advance of the main construction work and will be programmed to allow sufficient time to allow for the appropriate level of excavation, recording and sampling of the archaeology before the construction works starting.

259 The archaeological strip, map and record will be undertaken following a method statement to be produced by the archaeological contractor and agreed with the GGAT planning officer. Archaeological work will be undertaken in line with guidance from the Chartered Institute for Archaeologists.

Ecology

260 The site does not contain any statutory designated sites for nature conservation, the nearest such designated site being East Aberthaw site of special scientific interest (SSSI), which is approximately 4.3 km from the site. Furthermore, no non-statutory sites are present within the site.

261 A full range of ecological surveys was carried out across the site during 2016, including both botanical (extended phase 1 habitat survey) and protected species surveys (including badger, bat, great crested newt, reptile, otter and water vole,

hazel dormice, invertebrate and breeding bird surveys). Additional surveys have been carried out in 2017. The site contains a mosaic of habitats, being largely dominated by grassland, subject to varying levels of agricultural improvement, and arable fields. Smaller areas of habitat present include dense scrub, semi-natural broadleaved woodland and amenity grassland (which is associated with the St Athan military base). The site is drained by Llanmaes Brook, which flows in a southerly direction through the centre of the site with Boverton Brook located to the south. Field boundaries within the site largely comprise hedgerows of varying species diversity.

262 Protected species surveys identified the presence of a number of species within the habitats on-site, including a hazel dormouse nest and single adult hazel dormouse recorded in the east of the site. Based on connectivity of suitable habitats, their presence has been assumed within hedgerows across the site. In addition, two badger setts were located on-site (a large main sett and an outlier sett) with slow worm found in low numbers associated with the Llanmaes Brook stream corridor. Surveys also recorded twelve notable invertebrate species, with a diverse breeding bird population recorded, largely comprising relatively common species associated with the hedgerow, scrub and woodland habitats. No evidence of water vole, otter or great crested newt was recorded during the surveys, but it has been assumed that otter may commute along Llanmaes Brook and Boverton Brook. No bat roosts were recorded within the site and bat activity surveys recorded relatively low levels of activity across the site, with six bat species recorded. Bat activity was largely associated with the field boundaries and streams.

Landscape and trees

263 The proposed NAR is located in a landscape which has no statutory designation, but may be valued locally for its rural appearance. The site contains no landscape features which are considered to be important at a local, district/county or national scale other than the loss of a relatively low number of trees and hedgerows.

264 The trees within the site are dominated by specimens and groups that are in reasonable condition. The trees are associated predominantly with field and highway boundaries and provide substantial screening; other trees are located in nearby private gardens and in MoD St. Athan. A tree survey has been carried out to **BS 5837:2012 Trees in relation to design, demolition and construction**. This confirms the majority of the trees to be category C (low quality), with only two tree groups classified as category B (moderate quality). No trees or groups of trees were found that could be considered category A (high quality) or category U (requiring immediate removal). It is considered that the trees within the application site boundary are not a significant arboricultural constraint to the proposed scheme and that mitigation of their loss is possible.

Visual amenity

265 The location of the proposed Northern Access Road is within an area which is partly rural in nature, whilst being heavily influenced in places by the large scale buildings and structures on MoD St Athan and the ABP. Views towards the site from the residential areas to the south tend to be more rural in nature, whereas the views looking south and east tend to be degraded by the presence of the large hangars and other buildings on the St Athan site.

Infrastructure

Access

266 Existing access to the ABP is via the Main Gate at MoD St Athan. This is a temporary arrangement, ceasing in 2019.

Surface water drainage

267 The route of the NAR traverses Llanmaes Brook – classified as a main river by NRW – which flows north to south and is a tributary of Boverton Brook. The NAR also crosses Boverton Brook in the upper part of the catchment where it is classified

by NRW as an Ordinary Watercourse. Field drainage systems, including culverts and ditches, drain the agricultural land to Boverton Brook and the Nant y Stepsau, which is located to the east of the site. An existing flood defence structure, comprising an embankment and culvert, is located on Llanmaes Brook just south of the proposed NAR boundary. The agricultural land to the north of this structure is currently used for flood storage.

Utilities

268 Preliminary enquiries have been made with the statutory undertakers to identify existing utilities infrastructure that may be affected by the works. Further reference should be made to paragraph 486 et seq of this report, which provides details of proposed diversionary works.

269 Electricity: plans received from Western Power Distribution indicate the presence of electricity infrastructure at the eastern end of the site running along Eglwys Brewis Road near Picketston Gate and also at the centre of the site, crossing the site at Llanmaes Lane.

270 Gas: plans received from Wales and West Utilities indicate the presence of gas mains at the eastern end of the site crossing Eglwys Brewis Road near Picketston Gate and also at the western end of the site crossing the B4265 in the vicinity of the proposed roundabout. The gas main at the western end of the site crossing the B4265 is not expected to be affected by the works.

271 Telecommunications: plans received from BT indicate the presence of services at the eastern end of the site near Picketston Gate. Plans received from Virgin Media indicate the presence of a cable at the eastern end of the site crossing the car park to the north of the Super Hangar. Further enquiries have indicated that this was a proposed connection which has not been installed.

272 Potable water and sewerage: plans received from Dŵr Cymru Welsh Water indicate the presence of a potable water supply crossing the centre of the site in Llanmaes Lane. Plans also indicate the presence of two foul sewers crossing the site, one alongside Llanmaes Brook and one alongside Llanmaes Lane.

273 RAF/MoD services: plans received from the MoD indicate the presence of a range of services crossing the existing Eglwys Brewis Road near Picketston Gate.

3 Planning policy framework

The adopted development plan

301 The adopted development plan for the area in which the application site is located is The **Vale of Glamorgan Adopted Unitary Development Plan 1996-2011** (UDP).¹ Although the plan period has long since expired, the plan remains a statutory consideration in the determination of planning applications and appeals by virtue of section 38(6) of the **Planning and Compulsory Purchase Act 2004**.

302 The **UDP Proposals Map** depicts the application site as follows:

- The eastern end of the site lies within an area designated as “RAF St Athan” and allocated for development under Policy EMP 10.
- The western end of the site lies on unallocated land outside the residential settlement boundary and in the countryside, to which Policy ENV 1 is applicable.

None of the application site is subject to any additional restrictive planning designations such as the Glamorgan Heritage Coast, Green Wedge or Special Landscape Area.

303 Policy EMP 10 states:

“Policy EMP 10 – RAF St Athan

Further appropriate developments in respect of RAF activity within the RAF St Athan base will be favoured provided there is no unacceptable impact on local amenity.”

¹ **The Vale of Glamorgan Adopted Unitary Development Plan 1996-2011**, The Vale of Glamorgan Council, adopted on 18 April 2005.

Paragraph 5.4.48 of the **UDP Written Statement** explains that RAF St Athan is an important source of employment and that appropriate expansion will be favoured provided there is no unacceptable impact on local amenity. The **UDP** predates the contraction of RAF St Athan but, as a business park, the base remains an important source of employment in aerospace and other industrial activities.

304 Policy ENV 1 states:

“Policy ENV 1

Within the delineated countryside permission will only be granted for:

- (i) Development which is essential for agriculture, horticulture, forestry or other development including mineral extraction, waste management, utilities or infrastructure for which a rural location is essential;
- (ii) Appropriate recreational use;
- (iii) The re-use or adaptation of existing buildings particularly to assist the diversification of the rural economy; or
- (iv) Development which is approved under other policies of the plan.”

The NAR qualifies as an infrastructure development under criterion (i) of Policy ENV 1.

305 Other relevant UDP policies include:

Policy	Topic	Comment
ENV2	Agricultural land	The footprint of the NAR includes only a small area of best and most versatile agricultural land. The overriding need for the development outweighs the loss of this small area.
ENV7	Water resources	The proposed development includes measures which will help prevent flooding and improve safety.
ENV10	Conservation of the countryside	The application site lies outside the designated areas cited in Policy ENV 10. The NAR has been sensitively designed in relation to topography and incorporates ecology and landscape mitigation measures.
ENV11	Protection of landscape features	
ENV12	Woodland management	The proposal includes extensive new planting.
ENV16	Protected species	The ecology of the application site has been researched and is documented. Subject to the grant of planning permission, applications will be made for a European protected species licence in respect of dormouse and for a badger licence.
ENV17	Protection of the built and historic environment	The application site is not located in a conservation area and does not contain any scheduled monuments, listed buildings and designated landscapes, parks and gardens.

ENV18	Archaeological field evaluation	Appropriate mitigation for any presently undiscovered archaeological remains is incorporated in the proposal.
ENV27	Design of new developments	The NAR has been designed having full regard to its context. The specification of the road has been reduced from that approved previously: in particular, the bridge has been omitted, the vertical alignment has been lowered, and the carriageway reduced in width. Satisfactory provision is made for access by pedestrians and cyclists and for use of the NAR as a potential bus route.
ENV28	Access for disabled people	The proposal includes tactile surfaces where necessary, to assist blind and visually impaired people.
ENV29	Protection of environmental quality	The proposal incorporates appropriate mitigation in respect of air quality, noise, etc.
REC12	Public rights of way and recreational routes.	The proposal includes a new footway and cycleway. Two existing footpaths will be subject of minor diversions as part of the proposals.

Wales Spatial Plan

306 People, Places, Futures: The Wales Spatial Plan Update 2008 (WSP)² is a statutory plan (section 60 of the Planning and Compulsory Purchase Act 2004)

² **People, Places, Futures: The Wales Spatial Plan Update 2008**, Welsh Assembly Government, 2008.

with a twenty-year horizon, produced by the Welsh Government. It is important in that it provides an overarching framework, to which local planning authorities must have regard when preparing their local development plans.

307 The WSP seeks to promote a sustainable economy:

“We need an innovative, high value-added economy for Wales which utilises and develops the skills and knowledge of our people; an economy which both creates wealth and promotes the spreading of that prosperity throughout Wales; an economy which adds to the quality of life as well as the standard of living and the working environment.”³

308 The WSP introduces strategies for a series of spatial plan areas. The application site lies within the South East Wales – Capital Network spatial plan area, which extends from Bridgend in the west to Chepstow in the east and Abergavenny in the north. This area is described as:

“An innovative skilled Area offering a high quality of life – international yet distinctively Welsh. It will compete internationally by increasing its global visibility through stronger links between the Valleys and the coast and with the UK and the rest of Europe, helping to spread prosperity within the Area and benefiting other parts of Wales.”⁴

309 The strategy for the spatial plan area includes the designation of three “Strategic Opportunity Areas”, “... offering potential regional benefits from their sustainable development...”: St Athan is one of these.⁵

³ Ibid, page 34.

⁴ Ibid, page 125.

⁵ Ibid, page 130.

The emerging development plan

310 The Vale of Glamorgan Council is preparing **The Vale of Glamorgan Local Development Plan 2011-2026 (LDP)**⁶ which, when adopted, will supersede and replace the **UDP**. The **LDP** has been independently examined by an inspector, whose recommendations will be binding on the Council. Publication of the inspector's report is imminent. Adoption is anticipated in mid-2017.

311 The **LDP** strategy is:

"To promote development opportunities in Barry and the South East Zone. The St Athan area to be a key development opportunity and Cardiff Airport a focus for transport and employment investment. Other sustainable settlements to accommodate further housing and associated development."⁷

The supporting text to the strategy makes it clear that the **NAR** is of strategic importance:

"The **LDP** Strategy acknowledges the important role St Athan will play in the future prosperity of the Vale of Glamorgan and the wider South East Wales Capital Region. Policy SP 2 seeks to maximise opportunities for new inward investment and growth arising from these designations, while Policy SP 7 emphasises the strategic importance of a new Northern Access Road to facilitate the further development of the Aerospace Business Park at St Athan as part of the Enterprise Zone. Significant levels of new housing development are also proposed to reflect the importance of St Athan to the

⁶ Vale of Glamorgan Local Development Plan 2011-2026: Deposit Plan Written Statement, The Vale of Glamorgan Council, November 2013.

⁷ Ibid, paragraph 5.3, page 28.

Strategy of the Plan, and to support the key employment opportunities within the area."⁸

312 The **LDP Proposals Map** depicts the application site principally by reference to Policy MG 10 and Policy MG 16. These state:

"Policy MG 10 – St Athan – Cardiff Airport Enterprise Zone

Land is allocated adjacent to Cardiff Airport and Port Road, Rhooose (77 ha) and the the Aerospace Business Park St Athan (305 ha) for the development of 382 hectares of strategic employment land (Class B1, B2 and B8) forming part of the St Athan – Cardiff Airport Enterprise Zone.

"The development of the Enterprise Zone will be guided by a masterplan to include the following elements:

- The refurbishment of the existing 70,000 sqm hanger at St Athan (17.95 ha);
- An Aerospace Business Park north and south of the runway at St Athan;
- A business park for aviation support services at Picketston (11.79 ha);
- A new Northern Access Road at the St Athan Enterprise Zone (Policy MG 16 refers);
- ..."

"Policy MG 16 – Transport Proposals

Land for the following transportation schemes is allocated: [...]

14. Northern Access Road (St Athan Enterprise Zone..."

313 Other relevant **LDP** policies include:

⁸ Ibid, paragraph 5.9, page 29.

Policy	Topic	Comment
SP1	Delivering the strategy	The NAR will help deliver the LDP strategy and, as noted above, is considered by the Council to be strategically important.
SP2	Strategic sites	The NAR is a significant element in realising the Council's aspirations for the Enterprise Zone.
SP3	Residential requirement	The LDP sets a target of 9,460 new homes for the Vale by 2026. The NAR will provide direct access to 465 new homes and will provide enhanced infrastructure for other housing sites in the St Athan/Eglwys Brewis area.
SP5	Employment requirements	The LDP allocates 492 hectares of land to meet regional and local needs, of which over 60% is located at the ABP. The NAR is of strategic importance for the future development of the ABP.
SP7	Transportation	The NAR is one of the transport improvements specifically cited in this policy.
SP10	Built and natural environment	The application sites lies outside the Glamorgan Heritage Coast, the Special Landscape Area and all the other types of designated sites listed in this policy.
MG2	Housing allocations	The NAR will provide access to two of the proposed housing allocations: MG 2(6) and MG 2(7), totalling 465 new homes.

MG9	Employment allocations	The NAR will provide better and more appropriate access to Strategic Employment Site 3: Aerospace Business Park.
MG19	Sites and species of European importance	The application site does not contain any designated sites (European, national, regional/local). The site does contain priority habitats (hedgerow and stream) and dormouse, which is a European protected species, and badger setts. Subject to the grant of planning permission, applications will be made for a European protected species licence in respect of dormouse and for a badger licence.
MG19A	Nationally protected sites and species	
MG19B	Sites of importance for nature conservation, regionally important geological and geomorphological sites and priority habitats and species	
MD2	Design of new development	The NAR will provide safe and accessible access for users, incorporating provision for pedestrians and cyclists, and for the use of the NAR as a potential bus route.

MD8	Environmental protection	The NAR will result in the loss of only a small area of best and most versatile agricultural land and will provide betterment in respect of flood risk. The planning application is accompanied by a full suite of environmental reports, which assess the effects of the proposed development and, where necessary, propose appropriate mitigation measures.
MD9	Historic environment	The NAR is not located in a conservation area and will have no impact on scheduled monuments, listed buildings or designated landscapes. Appropriate mitigation for any presently undiscovered archaeological remains is incorporated in the proposal.
MD10	Promoting biodiversity	The application is accompanied by an ecological assessment, the recommendations of which have been incorporated in the proposal.

National planning policy guidance

314 National planning policy guidance is contained in PPW and in the series of accompanying Technical Advice Notes (TANs).

315 Guidance relating to transport infrastructure is set out in Chapter 8 of PPW:

"... Development plans should include all proposals for new roads and major improvements to the primary road network over the plan period, and beyond where known, and set out the broad policy on priorities for minor improvements. For local

road schemes the development plan procedures should normally provide the means to examine both the need for and the alignment of the route."⁹

As noted above, the NAR is an integral part of the emerging LDP and as such has been subject to extensive public consultation and examination by an independent inspector.

316 Paragraph 8.7.2 of PPW sets out the requirements for transport assessments (TA). The development of a new highway is not listed as a development requiring TA. Notwithstanding this, the application is accompanied by a TA, the scope of which was agreed in advance by the Council in its roles as local planning authority and highway authority.

317 Those TANs considered to be of most relevance to the application are:

- **TAN 5: Nature Conservation and Planning;**¹⁰
- **TAN 11: Noise;**¹¹
- **TAN 12: Design;**¹²
- **TAN 15: Development and Flood Risk;**¹³
- **TAN 18: Transport;**¹⁴ and
- **TAN 23: Economic Development.**¹⁵

⁹ Planning Policy Wales, op cit, paragraph 8.5.1, page 121.

¹⁰ Technical Advice Note 5: Nature Conservation and Planning, Welsh Assembly Government, September 2009.

¹¹ Technical Advice Note (Wales) 11: Noise, Welsh Office, October 1997.

¹² Technical Advice Note 12: Design, Welsh Government, March 2016.

¹³ Technical Advice Note 15: Development and Flood Risk, Welsh Assembly Government, July 2004.

¹⁴ Technical Advice Note 18: Transport, Welsh Assembly Government, March 2007.

¹⁵ Technical Advice Note 23: Economic Development, Welsh Government, February 2014.

Where appropriate, reference to these technical documents is made elsewhere in this report and in the series of reports that accompany the application.

Supplementary planning guidance

318 The Vale of Glamorgan Council has produced a range of supplementary planning guidance (SPG) documents and further documents are in course of preparation or subject to consultation. The following currently approved SPG documents are relevant:

- **Biodiversity and Development**,¹⁶
- **Design in the Landscape**,¹⁷ and
- **Trees and Development**.¹⁸

Other relevant statutes

319 In addition to the planning acts, the following Wales statutes are relevant and have been taken into account:

- The **Active Travel (Wales) Act 2013** requires the Welsh Ministers and local authorities to take reasonable steps to enhance the provision made for, and to have regard to the needs of, walkers and cyclists; to promote active travel journeys and secure new and improved travel routes and related facilities; and to produce approved maps of active travel routes.

¹⁶ **Biodiversity and Development - Supplementary Planning Guidance**, The Vale of Glamorgan Council, undated.

¹⁷ **The Vale of Glamorgan UDP Supplementary Planning Guidance: Design in the Landscape**, The Vale of Glamorgan Council, 2006.

¹⁸ **The Vale of Glamorgan UDP Supplementary Planning Guidance: Trees and Development**, The Vale of Glamorgan Council, 2006.

- The **Well-being of Future Generations (Wales) Act 2015** requires public bodies "...to do things in pursuit of the economic, social, environmental and cultural well-being of Wales in a way that accords with the sustainable development principle." The Act defines what is meant by the 'sustainable development principle' and by 'sustainable development', which is defined as "...the process of improving the economic, social, environmental and cultural well-being of Wales by taking action in accordance with the sustainable development principle, aimed at achieving the well-being goals." Section 4 of the Act defines the well-being goals of the National Assembly for Wales: a prosperous Wales; a resilient Wales; a healthier Wales; a more equal Wales; a Wales of cohesive communities; a Wales of vibrant culture and thriving Welsh language; and a globally responsive Wales.
- The **Historic Environment (Wales) Act 2016** amends the law relating to ancient monuments and listed buildings of special architectural or historic interest; establishes a statutory register of historic parks and gardens and a list of historic place names; establishes historic environmental records for local authority areas; and establishes an advisory panel for the Welsh Historic Environment.
- The **Environment (Wales) Act 2016**, among other things, promotes the sustainable management of natural resources and requires public authorities to take account of the resilience of ecosystems.

4 The proposal

The requirement for a new access

Historical background

401 The original development proposals for St Athan, which received outline planning permission in 2009, included detailed planning permission for the NAR. Despite the Defence Technical College not proceeding, the Welsh Government remains committed to the ABP and the NAR is considered to be essential in delivering the economic and social benefits associated with the Cardiff Airport and St Athan Enterprise Zone.

Purpose of the Northern Access Road

402 The NAR will serve the existing and proposed developments at St Athan including:

- the ABP, which occupies a large part of the former RAF camp, including the operational runway;
- the proposed Aston Martin car manufacturing facility, which will occupy the existing Super Hangar building on the ABP; and
- proposed residential development on land lying south of the proposed Northern Access Road and between it and Eglwys Brewis Road.

The NAR will not serve the MoD camp at St Athan, which will continue to be served via its existing access road at Main Gate.

The need for improved access

403 It is considered essential that the ABP is accessed by a road of appropriate design, specification and construction. Given the size and nature of the development proposals, the creation of a high-quality link to the existing highway network is vital.

404 The proposed redevelopment of the St Athan site will generate increased levels of traffic and the construction of the NAR will ensure that traffic congestion on the existing local road network and adverse environmental impacts to existing communities are avoided as far as possible and mitigated where necessary.

Consideration of options

405 The route of the NAR was determined in 2009. Given the revised development proposals at the site, the original route options study has been reviewed to confirm whether or not the NAR remains the preferred option. Reference should be made to AECOM's **Eglwys Brewis Road Options Report**, which accompanies this planning application.¹ The findings of that report are summarised below.

406 When proposals for the Defence Technical College and ABP 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 **Report on highway access options** of December 2009,² which identified the following options for providing access to the ABP and Defence Technical College:

- Access from the east (avoiding St. Athan village)
 - Eastern bypass to St Athan village
 - Inner bypass to St Athan village.

¹ **St Athan Northern Access Road: Eglwys Brewis Road Options Report**, AECOM, March 2017, ref: 60509148/CFRP0001/2.

² **St Athan Aerospace Business Park and Defence Technical College: Report on highway access options**, Department for the Economy and Transport, Welsh Assembly Government, ref: A024845rep091214v1.doc, December 2009.

- 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
 - NAR
 - Access through West Camp.

At the time of the original study, access from the west was considered to be the most viable option. The study concluded that the preferred option was to construct the NAR.

407 The reasons given in the original report for preferring access from the west are considered to remain valid despite the revised master plan. Of the three options presented for providing access from the west, only the construction of the NAR or the on-line improvement of Eglwys Brewis Road are considered viable. This is because access through West Camp is not considered to be an option owing to the security implications and the restrictions that this may place on the operation of the ABP. Furthermore, the current arrangement of accessing the ABP via the MoD Main Gate will not be possible from 2019 onwards.

408 In summary, the original list of options can be reduced to two potentially viable options:

- construct the NAR; or
- undertake on-line improvement of Eglwys Brewis Road.

The alignment of each option in relation to the ABP is shown in **Figure 05** below.

Below **Figure 05 Access options**
(not to scale)



409 The options appraisal considered each option against the following criteria:

- engineering feasibility;
- environmental impact;
- social impact;
- economic impact;
- cost; and
- time.

410 The review concluded that whilst both options have various advantages and disadvantages and both options have a number of constraints that would need to

be overcome, the NAR appears to have fewer, less costly and less time-impactful constraints to overcome. In particular, the main factors are:

- the ability to deliver the NAR to the required timescales which is vital given the pending restrictions that are to be imposed by the MoD from 2019;
- conversely the risks associated with upgrading Eglwys Brewis Road, particularly in respect of negotiations with Network Rail and the need for land acquisitions (potentially by compulsory purchase), are considered to be a significant disadvantage to the option of upgrading Eglwys Brewis Road;
- the opportunities for addressing flood risk by incorporating flood alleviation measures into the NAR;
- buildability constraints associated with upgrading Eglwys Brewis Road; and
- opportunities for Safe Routes to Schools³ improvements if the NAR is constructed.

411 In conclusion, the NAR is considered to remain the preferred option for providing access to the ABP.

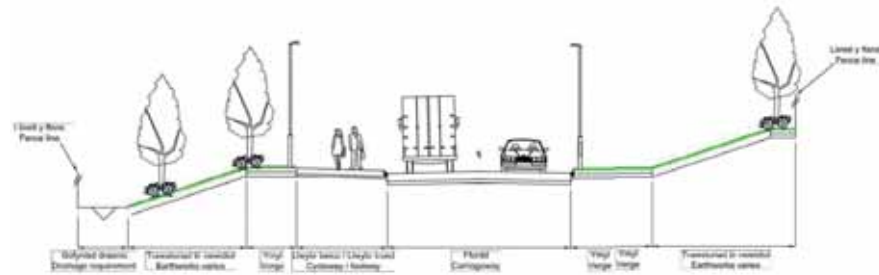
Access proposals

412 The proposed NAR comprises approximately 2 km of single carriageway, two-way road, 7.3 m wide with a footway/cycleway and verges. The road is generally constructed on a low embankment and follows the existing topography but drops into a cutting at its western end to tie-in with the existing B4265. A typical cross section is shown in **Figure 06**, overleaf.

413 A number of junctions would be provided along the route comprising T-junctions to serve potential residential developments identified in the Vale of

³ An initiative coordinated by Sustrans to create safe cycling and walking routes to schools across the UK, see: http://www.sustrans.org.uk/sites/default/files/documents/srs_safe_routes_fs01.pdf.

Below Figure 06 Typical cross section of the proposed NAR (not to scale)



Glamorgan Council's emerging LDP. At the western end of the site a new roundabout would be constructed on the B4265. At the eastern end of the site a new signalised crossroads junction would provide access into the ABP.

414 A number of measures are proposed to ensure that traffic uses the NAR, rather than existing routes through local villages. These include:

- directional signs will be erected at strategic locations on the B4265 to lead traffic to the new road;
- transport plans will be agreed with tenants of the ABP to make sure that workers and delivery drivers are instructed to use the new road;
- the signalised junction at the entrance to the ABP will be configured to discourage traffic leaving the ABP from turning right towards St Athan village; and, similarly
- traffic travelling west through St Athan will be discouraged from turning left into the ABP by:
 - the use of road markings;
 - carriageway surface treatments; and
 - reduced signal timings to limit the number of left/right turns permitted.

Highway design principles

Design standards

415 The NAR has been designed in accordance with **Design Manual for Roads and Bridges (DMRB)**.⁴ No departures from standard or relaxations are proposed. The road will be a single carriageway, two-way road, 7.3 m wide, i.e. road type S2 in accordance with **TD 9/93 (DMRB 6.1.1)**.⁵ The proposed speed limit is 40 mph, which the police and local highway authority have suggested would be appropriate for this section of road. Given this, a design speed of 70A kph has been adopted in accordance with Table 2 in **TD 9/93 (DMRB 6.1.1)**.

Highway cross-section

416 The highway cross-section has been designed in accordance with **TD 27/05 (DMRB 6.1.2)**⁶ and comprises a single carriageway with two 3.65 m lanes, giving a total carriageway width of 7.3 m. A shared footway/cycleway 3.5 m wide is provided on the southern side of the road with a 2.0 m wide grass verge beyond. A 4.0 m wide grass verge is proposed on the northern side to allow the possible construction of a 2.0 m wide footway in the future if demand requires.

Fencing

417 Boundary fencing will be provided along the entire length of the NAR. This will generally comprise timber post and four rail fencing in accordance with the

⁴ **Design Manual for Roads and Bridges**, Highways England, continually updated: <https://www.gov.uk/guidance/standards-for-highways-online-resources#the-design-manual-for-roads-and-bridges>.

⁵ **Design Manual for Roads and Bridges**, op cit: **Volume 6 Road Geometry, Section 1 Links, Part 1 TD 9/93 Highway Link Design**.

⁶ **Design Manual for Roads and Bridges**, op cit: **Volume 6 Road Geometry, Section 1 Links, Part 2 TD 27/05 Cross-sections and Headrooms**.

Below Figure 07 Visualisation looking south-west along the proposed NAR



Manual of Contract Documents for Highway Works,⁷ Volume 3 - Highway Construction Details, H Series. Mammal-proof meshes will be included on the fencing to guide animals to proposed mammal culverts, for example at Llanmaes Brook and Boverton Brook. Palisade security fencing will also be utilised where the road runs adjacent to the MoD site. Three sections of acoustic barriers are proposed. Refer to paragraph 444 et seq of this report for further details.

Road restraint systems

418 The proposals have been subject to a Road Restraints Risk Assessment Process (RRRAP) assessment in accordance with **TD 19/06** (DMRB 2.2.8).⁸ Vehicle restraint systems (safety barriers) are proposed where the road crosses Llanmaes Brook due to the presence of an agricultural underpass. Elsewhere, road restraint systems are not required. Lighting columns shall be passively safe.

Pavements

419 Pavement surfacing has been designed in accordance with **HD 26/06** (DMRB 7.2.3)⁹ and **HD 36/06** (DMRB 7.5.1)¹⁰ using the forecast traffic volumes provided in the TA.¹¹ It is proposed that the pavement surfacing will comprise a low noise, thin surface course system. The pavement foundation design has been completed

⁷ **The Manual of Contract Documents for Highway Works**, Highways England, continually updated: <https://www.gov.uk/guidance/standards-for-highways-online-resources#the-manual-of-contract-documents-for-highway-works>

⁸ **Design Manual for Roads and Bridges**, op cit: **Volume 2 Highway Structures: Design (Substructures and Special Structures) Materials, Section 2 Special Structures, Part 8 TD 19/06 Requirement for Road Restraint Systems**.

⁹ **Design Manual for Roads and Bridges**, op cit: **Volume 7 Pavement Design and Maintenance, Section 2 Pavement Design and Construction, Part 3 HD 26/06 Pavement Design**.

¹⁰ **Design Manual for Roads and Bridges**, op cit: **Volume 7 Pavement Design and Maintenance, Section 5 Pavement Materials, Part 1 HD 36/06 Surfacing Materials for New Maintenance and Construction**.

¹¹ **Northern Access Road, St Athan: Transport Assessment**, WYG, January 2017, ref: A097705, issue 2.

in accordance with **Interim Advice Note 73/06¹²** based on the results from the ground investigation using the Restricted Foundation Design method.

Kerbs, footways and paved areas

420 Footways and paved areas have been designed in accordance with **HD 39/16** (DMRB 7.2.5).¹³ Full height half-battered HB2 kerbs (typically 125mm upstand) will be used along the length of the scheme. Combined kerb/drain units are proposed in some locations.

421 Several sections of footway are proposed away from the NAR to provide links to local amenities via the existing highway network. For example a 3.5 m wide footway/cycleway will be provided along part of the B4265. It is also proposed that footway links will be provided for the village of Eglwys Brewis.

Signs and road markings

422 Traffic signs and road markings have been designed in accordance with the **Traffic Signs Manual**.¹⁴ The traffic signs will include directional signs at strategic locations on the approaches to the site to ensure that traffic is directed to use the proposed NAR.

Road lighting

423 The NAR will be lit by means of lighting columns situated within the highway verge at regular intervals. A short section of the NAR will be left unlit where it crosses Llanmaes Brook to minimise the impact on bats and other species using the brook as

¹² **Interim Advice Note 73/06: Design Guidance for Road Pavement Foundations (Draft HD25)**, Highways England, IAN 73/06 (W), revision 1.

¹³ **Design Manual for Roads and Bridges**, op cit: **Volume 7 Pavement Design and Maintenance, Section 2 Pavement Design and Construction, Part 5 HD 39/16 Footway and Cycleway Design**.

¹⁴ **Traffic Signs Manual**, London: The Department of Transport, 2006 and continually updated: <https://www.gov.uk/government/publications/traffic-signs-manual>.

an ecological corridor. A length of the B4265 will also be lit to provide illumination to the proposed footway/cycleway as well as the proposed roundabout.

Traffic signals

424 The proposals include a signalised junction at the eastern end of the site to provide access into the ABP. The junction will be designed as an all-movement crossroads. However, measures will be incorporated to discourage traffic from travelling through the village of St Athan. These will include road markings and carriageway surface treatments as well as reduced signal timings to discourage traffic leaving the ABP from turning right towards St Athan and, similarly, traffic travelling west through St Athan from turning left into the ABP.

Bus stops

425 The proposals include two bus stops on the NAR which will allow for future provision of bus services. The details of these stops match the bus laybys used elsewhere in the Vale of Glamorgan to ensure continuity across the network. It is anticipated that when the new road is opened bus services will remain on their existing routes until such time as demand dictates that either the existing routes are amended, or otherwise new services are deployed.

Maintenance laybys

426 Two maintenance laybys are proposed. The first is to the north of the proposed roundabout junction on the B4265 at the western end of the site to allow for maintenance vehicles to access the roundabout and proposed drainage attenuation features. The second is proposed at the eastern end of the site, adjacent to the signalised junction at the entrance to the ABP. The maintenance laybys have been designed in accordance with Figure 7/1 from **TD 69/07** (DMRB 6.3.3).¹⁵

¹⁵ Design Manual for Roads and Bridges, op cit: **Volume 6 Road Geometry, Section 3 Highway Features, Part 3 HD 69/07 The Location and Layout of Lay-bys and Rest Areas.**

Road safety audit

427 The proposals have been subject to a combined Stage 1 and 2 Road Safety Audit in accordance with **HD 19/15** (DMRB 5.2.2).¹⁶

Highway and junction proposals

Stopping sight distance, visibility splays and swept path analysis

428 Stopping sight distances, visibility splays and vehicle swept paths have been verified for the entire length of the NAR and all at junctions. Reference should be made to the details presented on AECOM drawings 60509148-SHT-30-0000-CT-0151 to 0157, which accompany the planning application. Proposed earthworks cuttings on the approaches to the roundabout junction on the B4265 at the western end of the site have been widened to ensure sufficient forward visibility to the junction.

Junction A – B4265 roundabout

429 A roundabout junction is proposed where the new road ties into the existing B4265. The roundabout has been designed in accordance with **TD 16/07** (DMRB 6.2.3).¹⁷ A roundabout is considered preferable in order to avoid proliferation of signal controlled junctions on this section of the B4265. The capacity of the junction has been verified using ARCADY analysis. The roundabout has been positioned to the east of the existing B4265 to allow the roundabout to be constructed off-line, thus minimising traffic disruption during construction.

¹⁶ Design Manual for Roads and Bridges, op cit: **Volume 5 Assessment and Preparation of Road Schemes, Section 2 Preparation and Implementation, Part 2 HD 19/15 Road Safety Audit.**

¹⁷ Design Manual for Roads and Bridges, op cit: **Volume 6 Road Geometry, Section 2 Junctions, Part 3 TD 16/07 Geometric Design of Roundabouts.**

Junction B – uncontrolled T-junction for future development at Tremains Farm

430 This junction will provide access to a proposed future residential development located to the south of the NAR at Tremains Farm. The junction has been designed as a ghost island T-junction in accordance with **TD 42/95** (DMRB 6.2.6).¹⁸ A pedestrian refuge island will be provided within the mouth of the junction to assist users of the shared footway/cycleway.

Junction C – uncontrolled T-junction to Llanmaes Lane

431 This junction will provide a link to the existing Llanmaes Lane. The junction has been designed as a ghost island T-junction in accordance with **TD 42/95** (DMRB 6.2.6).¹⁹ Vehicle swept path analysis has been undertaken to ensure that access to the Millands Caravan Park is retained for delivery wagons. Some localised widening of the existing lane to the north of Froglands will be necessary.

Junction D – uncontrolled T-junction for future development at Froglands Farm

432 This junction will provide access to a proposed future residential development located to the south of the NAR at Froglands Farm. The junction has been designed as a ghost island T-junction in accordance with **TD 42/95** (DMRB 6.2.6).²⁰ A pedestrian refuge island will be provided within the mouth of the junction to assist users of the shared footway/cycleway.

¹⁸ Design Manual for Roads and Bridges, op cit: Volume 6 Road Geometry, Section 2 Junctions, Part 6 TD 42/95 Geometric Design of Major/Minor Priority Junctions.

¹⁹ Ibid.

²⁰ Ibid.

Junction E – uncontrolled T-Junction to Eglwys Brewis Road

433 This junction will provide a link to the existing Eglwys Brewis Road. The junction has been designed as a ghost island T-junction in accordance with **TD 42/95** (DMRB 6.2.6).²¹ A pedestrian refuge island will be provided within the mouth of the junction to assist users of the shared footway/cycleway.

Junction F – signalised junction to the Aerospace Business Park

434 At the eastern end of the site a new signalised junction will be constructed to provide access into the ABP. The junction will be designed as an all-movement crossroads. However, measures will be incorporated to discourage traffic from travelling through the village of St Athan. These will include road markings and carriageway surface treatments as well as reduced signal timings to discourage traffic leaving the ABP from turning right towards St Athan and, similarly, traffic travelling west through St Athan from turning left into the ABP.

435 In order to ensure sufficient capacity during peak times, the signalised junction includes two lanes turning right from the NAR into the ABP and two lanes turning left from the ABP onto the NAR. The capacity of the junction has been verified through the use of LinSig modelling software. The junction includes toucan crossings on all arms for pedestrians and cyclists. Access ramps have been provided to enable cyclists to transition from the carriageway to/from the shared cycleway/footway facility.

436 The junction has been positioned to the north of the existing Eglwys Brewis Road in order to minimise disruption to the existing highway network during construction. Positioning the junction here also increases the distance to the proposed roundabout within the ABP. This four-arm roundabout will provide access into the various parts of the ABP. The north-eastern arm provides access to the eastern part

²¹ Ibid.

of the ABP. A hatched overrun area has been included to ensure HGVs are able to perform the turning manoeuvre without entering adjacent lanes. The south-eastern arm provides access to the existing car park which will be used by Aston Martin. A proposed layout has been shown indicatively and will be developed further with the future tenant. The south-western arm of the roundabout will provide access to the western part of the ABP.

Public rights of way

437 The proposed NAR crosses two existing public rights of way, as indicated on AECOM drawing: 60509148-SHT-30-0000-CT-2606/A, which accompanies the planning application. It is proposed that wherever possible the existing footpaths will be retained on their current alignment; however, some diversions will be necessary to ensure the footpaths cross the road in safe locations. Stiles and/or gates will be provided where the footpaths meet the proposed highway boundary.

438 It is intended that these diversions will be implemented under section 257 of the **Town and Country Planning Act 1990**. The orders will be made and published by the Vale of Glamorgan Council and submitted to the Welsh Government for confirmation (subject to any objections) via the Planning Inspectorate. No public footpaths will be extinguished as part of the development.

439 The NAR will intersect Llanmaes Lane near Rose Cottage, a property in the ownership of the Welsh Ministers, where the existing garage will be demolished and replaced by a hardstanding. A short section of the existing highway in this location will need to be closed to vehicular traffic and a turning head for vehicles will be provided on the southern side of the NAR. The Vale of Glamorgan Council will be asked to follow the appropriate statutory procedures to effect this.

Landscape and visual impact

440 Reference should be made to the **Landscape and Visual Impact Assessment (LVIA)**, which accompanies the planning application.²²

Landscape

441 The proposed scheme is typical of similar development close to the site and includes extensive landscape mitigation measures to integrate the proposed scheme into its landscape context.

442 The site contains no landscape features that are considered to be important at a local, district, county or national scale. The scheme will result in the loss of a relatively low number of trees and hedgerows, which are not considered to be important at a site level.

443 The effect on landscape character will be direct and largely relate to the visibility of the largest vehicles using the proposed scheme and the additional source of night-time lighting. At all levels of landscape character assessment, the effect of the proposed scheme is considered to be negligible and, therefore, not significant.

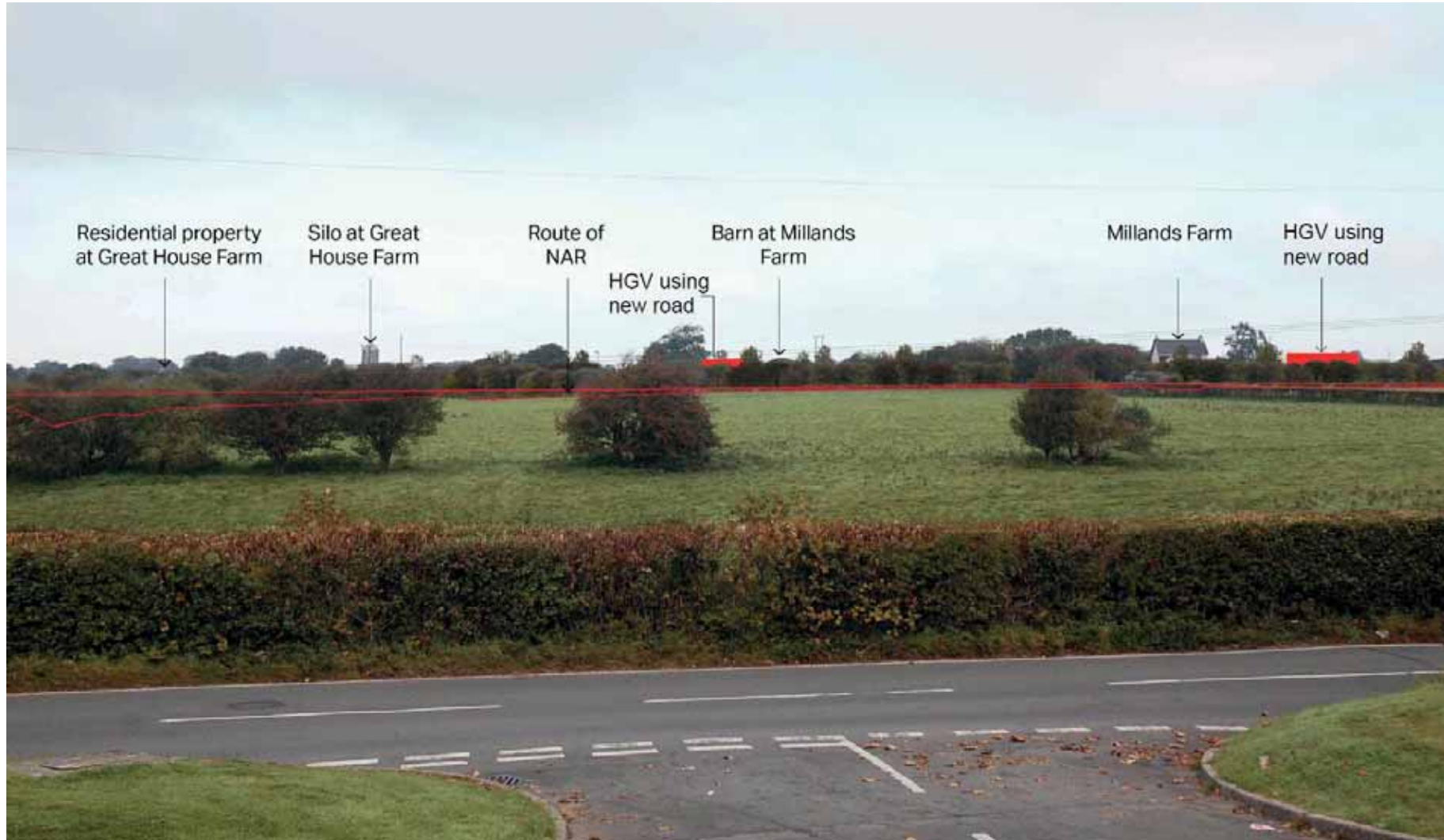
Visual amenity

444 The effect on visual amenity of the proposed NAR is considered in the context of the adjacent developments, which are recognisable features in the local landscape.

445 Local topography and surrounding retained vegetation, augmented by the extensive landscape mitigation to be implemented as part of the proposed scheme, will provide substantial screening of it. This results in the proposed scheme being

²² **St. Athan Northern Access Road: Landscape and Visual Impact Assessment**, AECOM, March 2017, ref: 60509148/LDRP/0004.

Below Figure 08 Visualisation of the proposed NAR from the south



completely screened or only partly visible from the majority of the views. As such it has been assessed that only a single visual receptor (views from the two residential properties of Froglands Farm and Rose Cottage) will experience a significantly adverse visual effect in the long term.

Landscape

Landscape objectives

446 The objectives of the landscape mitigation scheme are a response to the ecological and arboricultural surveys and the LVIA, balanced with the practicality of implementation, long term management and the safety requirements of the highway. Overall, the landscape scheme aims to:

- provide an attractive and functional landscape context to the highway;
- mitigate for the loss of existing habitats;
- provide screening of the most visually intrusive elements from sensitive receptors close by (predominantly residential properties);
- provide ecological enhancements; and
- integrate the scheme into the surrounding landscape.

Landscape strategy

447 The design strategy is directly linked to the existing landscape features and habits surrounding the site whilst aiming to provide a landscape scheme in accordance with the relevant DMRB highway standards, including the consideration of the viability of long term management operations.

448 The landscape strategy includes the following key features:

- minimise the removal of existing vegetation as far as practicable;
- include appropriate species identified as existing on and adjacent to the site;
- protect retained trees adjacent to the works areas to **BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations**;
- undertake linear tree and shrub planting to integrate the new junction at the B4265 to the existing semi-mature vegetation;
- introduce hedgerow planting adjacent to the highway to provide habitat linkage and visual amenity;
- introduce species-rich grassland to distinct areas where appropriate management can provide long term biodiversity and visual amenity enhancements;
- set back areas of large tree planting and individual trees to minimise the risk of collision;
- provide a native hedgerow mix with enhance visual amenity adjacent to the noise barriers to reduce their visual impact as far as practicable;
- provide tree and shrub planting to mitigate the visual impact and loss of existing vegetation adjacent to the B4265;
- provide an appropriate landscape management regime to ensure long term establishment of the proposed landscaping;
- provide appropriate low maintenance grass species along the highway verges to minimise maintenance requirements; and
- provide appropriate grass species within the tree and shrub planting areas to act as 'nurse species' for the development woodland.

Planting proposals

449 An appropriate mix of species has been chosen for the proposed landscape scheme, based on the existing vegetation on site, their potential to provide appropriate ecological and amenity benefits, and their long term maintenance

requirements. They are based on the guidance in **HA 87/01** (DMRB 10.0.2),²³ **HA 88/01** (DMRB 10.0.3)²⁴ and **HA 108/04** (DMRB 10.3.2).²⁵

450 All planting areas will be undertaken with a minimum of 100 mm top soil; tree and shrub planting will be undertaken in a minimum of 300 mm topsoil and an appropriate depth of sub-soil (dependent upon underlying geology). For planting schedules, see **Appendix 3**.

Environmental mitigation and enhancement

Ecology

451 The results of the surveys have informed the design of the development, which has focused on the retention, enhancement and protection of important habitats as far as is possible and the maintenance of habitat connectivity through and around the site (to allow species free movement and avoid fragmentation impacts). Ecological mitigation and enhancements included within the development are summarised below:

- Extensive planting of native shrub, trees, hedgerows, species-rich grassland and translocation of all hedgerows impacted by the scheme to maintain and enhance habitats for a range of protected species including bats, hazel dormice and breeding birds.
- Sensitive clearance methodologies to reduce potential for impacts on reptiles during construction.

²³ Design Manual for Roads and Bridges, op cit: Volume 10 Environmental Design and Management, Section 0 Environmental Objectives, Part 2 HA 87/01 Environmental Functions.

²⁴ Design Manual for Roads and Bridges, op cit: Volume 10 Environmental Design and Management, Section 0 Environmental Objectives, Part 3 HA 88/01 Landscape Elements.

²⁵ Design Manual for Roads and Bridges, op cit: Volume 10 Environmental Design and Management, Section 3 Landscape Management, Part 2 HA 108/04 Landscape Management Handbook.

- The development will require an application for a European Protected Species Licence for hazel dormice which will include sensitive timing of vegetation removal (including hedgerow translocation), maintenance of connectivity between the north and south of the site through the provision of a 'dead hedge' feature in the underpass which will connect to hedgerows in the wider area reducing fragmentation impacts and provision of large areas of additional habitat within the planting scheme. A draft application for a dormouse licence is included in the list of submitted documents.
- The development will require an application for a NRW licence to close an outlier badger sett which will be carried out in line with best practice guidance, likely to include the use of one-way badger gates. The main badger sett will be retained and appropriately fenced during construction with connectivity to the wider countryside maintained through the provision of an underpass beneath the development which will be delineated through the inclusion of badger and otter fencing to the highway boundary. This underpass will also maintain connectivity for otters potentially using Llanmaes Brook with additional features including the provision of an otter ledge within the culvert;
- Provision of features to maintain fish and eel movement along Llanmaes Brook.
- Sensitive lighting strategy for bats and provision of large areas of suitable foraging and commuting habitat within the planting scheme.

Noise

452 An assessment of predicted noise and vibration impacts associated with the construction and operation of the proposed NAR has been undertaken by AECOM. Reference should be made to AECOM's **Noise and Vibration** report,²⁶ which accompanies the planning application.

²⁶ St. Athan Northern Access Road: Noise and Vibration, AECOM, 16 March 2017, ref: 60509148/NORP0001/0.

453 The proposed NAR will potentially affect traffic noise and vibration levels experienced by sensitive receptors, such as occupiers of residential properties, both in the vicinity of the proposed scheme and along any other existing affected roads on the local road network. Accordingly, a traffic noise and vibration assessment has been undertaken following the methodology for a detailed assessment, as described in the current version of the DMRB, with due regard to PPW.

454 The assessment considers absolute traffic noise levels, changes in traffic noise levels and the effects on residential properties and other sensitive receptors. The assessment considers the following scenarios for which traffic data were generated:

- Base 2016, current baseline conditions;
- Do-minimum 2019 (DM 2019): the year of full opening 2019 without the proposed scheme. The traffic data include 200 existing business park jobs and the Aston Martin committed development, both accessed via the existing Eglwys Brewis Road;
- Do-minimum 2034 (DM 2034): future assessment year 15 years after full opening, without the proposed scheme. The traffic data include the Aston Martin committed development, housing developments in the local plan but not committed, and 3,000 business park (including 200 existing jobs). All developments accessed via the existing Eglwys Brewis Road;
- Do-something 2019 (DS 2019): year of full opening, with the proposed scheme. The traffic data include 200 existing business park jobs and the Aston Martin committed development, both accessed via the scheme; and
- Do-something 2034 (DS 2034): future assessment year 15 years after full opening, with the proposed scheme. The traffic data include the Aston Martin committed development, housing developments in the local plan but not committed, and 3,000 business park jobs (including 200 existing jobs). All developments accessed via the scheme.

455 The assessment scenarios have been discussed with Vale of Glamorgan Council's Shared Regulatory Services Department and are considered to represent a conservative, worst-case scenario.

456 The assessment indicated the need for mitigation, which shall be provided as follows:

- use of low-noise carriageway surfacing across the extent of the proposed scheme; and
- installation of noise barriers in three locations:
 - 2.5 m noise barrier located to the north of the scheme in the vicinity of Froglands Farm, Millands Farm and Millands Park;
 - 2.5 m noise barrier located to the south of the scheme in the vicinity of Rose Cottage and Old Froglands; and
 - 2.5 m noise barrier located to the west of the scheme at the top of the B4265 cutting to protect the closest properties in Llantwit Major.

457 Temporary noise and vibration impacts during construction have also been assessed. This assessment has been undertaken on a qualitative basis based on the nature and duration of the construction works, including potential volumes of construction traffic.

458 Consideration is being given to the use of blasting to create the required rock cutting at the western end of the scheme. Blasting would be used to fracture the rock, allowing it to be transferred into wagons and removed from the works area. It is intended that the site-won rock will be used elsewhere on site. If blasting is to be the preferred construction method then a detailed assessment of the proposed blasting methods would be undertaken once the contractor has been appointed. With appropriate design by suitably qualified blasting contractors, the guideline values for the resultant noise, vibration and air overpressure should be achievable.

459 It should be noted that the proposed noise barrier located to the west of the scheme at the top of the B4265 cutting (as detailed above) will be installed as part of a phase of advance works programmed for construction during the winter 2017/2018 prior to construction of the road starting in May 2018. This will help to mitigate the noise impact to nearby residents during construction.

460 Lastly, a construction environmental management plan (CEMP) will be prepared and implemented by the selected construction contractor. The CEMP would include a range of best practice measures associated with mitigating potential noise and vibration impacts.

Air quality

461 An air quality impact assessment has been undertaken, which has examined the potential for the proposed NAR to result in impacts on air quality during the construction and operational phases. Reference should be made to the **Air Quality Impact Assessment** report,²⁷ which accompanies the planning application. The assessment demonstrates that the proposed NAR will not result in significant adverse effects on air quality and is therefore considered to be consistent with relevant planning policy.

462 The air quality effects associated with the proposed NAR can be summarised as follows:

- The proposed NAR is not located within any of the Vale of Glamorgan Council's Air Quality Management Areas (AQMA), within which nitrogen dioxide (NO₂) annual mean concentrations have been identified to be above air quality objectives.

- The construction phase for the proposed NAR is expected to be carried out over a period of approximately 14 months. It is anticipated that emissions of airborne particulate matter generated by construction activities will be controlled using on site management practices to the extent that the proposed NAR should give rise to negligible short-term effects on dust deposition rates and concentrations of particulate matter at the nearest sensitive receptors.
- Predicted annual mean NO₂ and particulate matter (PM₁₀ and PM_{2.5}) concentrations are expected to be well below the annual mean objective at all receptors in the study area. Overall, receptors are predicted to experience a negligible effect in accordance with the Institute of Air Quality Management (IAQM)/Environmental Protection UK (EPUK) guidance of 2015, which is considered to be not significant, in both the opening year of 2019 and the future year of 2034.
- No additional mitigation measures are recommended for air quality as part of the operational phase of the proposed NAR.

Drainage strategy

463 A drainage strategy has been prepared which examines:

- the existing site drainage;
- estimates the greenfield runoff rate from the existing site;
- provides an assessment of proposed impermeable areas and associated discharge rates from the proposed catchments; and
- provides a detailed description of the proposals for managing surface water runoff throughout the site, including the use of sustainable drainage systems (SuDS) which have been specifically designed to minimise the risk of bird strikes to aeroplanes from the adjacent airfield.

²⁷ St Athan Northern Access Road: Air Quality Impact Assessment, AECOM, 14 March 2017, ref: 60509148/FINAL.

464 Reference should be made to AECOM's **Drainage Strategy** report.²⁸ The following section provides an overview.

465 Owing to the poor infiltration characteristics of the existing soils and underlying bedrock, infiltration has been discounted as an option to discharge surface water to ground. In addition the high groundwater table would limit the number of suitable locations. The majority of the catchments will therefore discharge to a fluvial surface water body, excluding Catchment A which discharges at an attenuated rate to the existing highway surface water sewer located in the verge along the B4265.

466 The existing site is predominantly greenfield and therefore the discharge rate from the drainage networks will be restricted to the site greenfield runoff rate. It should be noted that where the discharge is restricted to a very small value the risk of blockages increases, so NRW has recommended that the lower limit for the maximum discharge rate is 5 litres/second from a flow control device. A minimum 300 mm freeboard will be provided on all SuDS features to allow additional storage capacity in the event of blockage. It will also help to ensure flood volumes from the 1,000 year storm event will be contained within the development.

467 The design proposals will restrict the discharge rates to the watercourses to the greenfield value through the use of SuDS systems combined with vortex flow controls located upstream of the outfalls. The vortex flow control will be designed so that the catchments they serve discharge at the calculated rates of greenfield runoff for various return period storms, ensuring no detriment to the downstream watercourses.

468 The greenfield runoff rate for the site has been calculated to determine the level of acceptable rate of discharge to the receiving watercourse. The Institute of

Hydrology report **Flood estimation for small catchments**²⁹ has been used to determine the peak greenfield runoff rate for the site (**SUDS for Roads**³⁰). The calculations have been undertaken using the Microdrainage computer software package.

469 Independent highway and land drainage systems are proposed for the scheme in accordance with the guidance in **HD 49/16** (DMRB 4.2.1).³¹

470 Site specific **Flood Estimation Handbook**³² (FEH) rainfall data will be utilised for the hydraulic design of the drainage systems. Although normally used on larger catchments, this methodology has been chosen to ensure consistency with the FCA hydraulic modelling, following agreement with the Vale of Glamorgan Council.

471 **HD 33/16** (DMRB 4.2.3)³³ specifies the design criteria for the drainage networks, the drainage systems will ensure:

- no surcharging of the pipe networks in a 1 in 1 year return period storm event; and
- no flooding of the pipe networks in a 5 year + 20% (climate change) return period storm event.

²⁹ Marshall D C W and Bayliss, A C, **Report No. 124: Flood estimation for small catchments**, Institute of Hydrology, June 1994.

³⁰ Pittner, Chris and Allerton, Gordon, **SUDS for Roads**, WSP Development and Transportation for Society of Chief Officers of Transportation in Scotland and Sustainable Urban Drainage Scottish Working Party, 2009.

³¹ **Design Manual for Roads and Bridges**, op cit: **Volume 4 Geotechnics & Drainage, Section 2 Drainage, Part 1 HD 49/16 Highway Drainage Design Principal Requirements**.

³² **Flood Estimation Handbook**, Centre for Ecology & Hydrology, 1999.

³³ **Design Manual for Roads and Bridges**, op cit: **Volume 4 Geotechnics and Drainage, Section 2 Drainage, Part 3 HD 33/16 Design of Highway Drainage Systems**.

²⁸ **St. Athan Northern Access Road: Drainage Strategy**, AECOM, March 2017, ref: 60509148/CFRP007/0.

472 In addition the SuDS features will be designed in accordance with the criteria described in **HA 103/106** (DMRB 4.2.1).³⁴ The design will ensure no flooding in a 1 in 100 year + 30% return period storm event. In addition, the systems will be simulated for the 1 in 1,000 year return period event to ensure no detriment to the downstream watercourse's or property.

473 Surface water runoff from the highway will generally be intercepted by kerb drains or gullies and discharge into a combined filter/carrier pipe network located in the verge. The combined filter/carrier drains will also act as sub-surface drains to control groundwater ingress into the carriageway foundation.

474 Catchments B, C, D and E discharge via a two stage SuDS system that includes a sediment forebay and dry attenuation pond. The forebay (which will be planted with reeds) will consist of 300 mm of permanent water and be sized to hold the first flush water generated from the catchment. The maximum depth of storage in the forebay will be 300 mm.

475 The first flush volume contained within the forebay will drain through to the attenuation pond via a filter drain. The filter drain runs along the bund located between the forebay and the pond. The forebay will drain back to the permanent water level within 72 hours.

476 The dry pond will have a maximum storage depth of between 1.0 m to 1.5m and combined with the forebay, will retain the 1 in 100 year (+30% climate change) return period storm event. The waters retained within the attenuation pond and forebay above the weir level will be designed to ensure they fully discharge within 35 hours.

477 This SuDS solution has been used on the trunk road network elsewhere in the UK when the schemes have been in close proximity to Ministry of Defence airfields. With the scheme bounded by MoD St Athan there would be an increased risk of bird strikes to aeroplanes if wet ponds were used which could attract loafing birds. The removal/masking of the permanent water and fast drain down times minimise the risk, allowing the full benefits of a SuDS solution to be realised.

478 In addition to providing attenuation, the SuDS systems will treat the potentially contaminated highway runoff prior to discharge to the watercourses. Oil separators are not deemed necessary on this scheme with pollution control provided by the SuDS features and Penstocks. Penstocks will be fitted in the filter/carrier pipe system so that in the event of a pollution incident the hazardous materials can be retained within the highway. If lowered in time, before discharge of significant quantities, penstocks can potentially retain 100% of spilled material, which are then relatively easily removed by suction or other methods, depending on the material involved.

479 Measures are also included to intercept overland flows affected by the NAR. For example, a wide swale/linear basin attenuation system will be constructed to the north of the NAR and west of Froglands to attenuate these overland flows. The existing highway area will be landscaped to ensure the flows are diverted to the SuDS storage feature. A ditch will also traverse the north edge of the highway south of Froglands Farm to intercept overland flows in this locality and convey them to the storage area.

480 Provision will be also made for maintenance vehicles to be able to access each of the SuDS features.

³⁴ Design Manual for Roads and Bridges, op cit: Volume 4 Geotechnics and Drainage, Section 2 Drainage, Part 1 HA 103/06 Vegetated Drainage Systems for Highway Runoff.

Flood consequences assessment

481 A flood consequences assessment (FCA) has been prepared for the proposed development in accordance with **TAN 15**, and this accompanies the planning application.³⁵ The findings are summarised below.

482 Fluvial and pluvial flood modelling has been undertaken to inform the design and assess the flood risk associated with the watercourse crossings that are affected by the proposed road. A key aspect of the FCA has been to demonstrate that the proposed NAR has no detrimental effect on the flood risk to the villages of Llanmaes and Boverton.

483 To ensure compliance in demonstrating no detrimental impacts as a result of the construction of the new road, both the flood risk to and from the site from pluvial and fluvial sources has been considered. NRW provided AECOM with an ESTRY-TUFLOW hydraulic model of Boverton Brook, Llanmaes Brook and the River Hoddnant, which was developed in 2014. In agreement with NRW, this model was updated and extended to include the upstream extents of Boverton Brook to include the total area required for the proposed NAR and drainage design to assess the fluvial and pluvial flood risk.

484 By incorporating a number of mitigation measures, such as detention areas and flood relief culverts, it has been shown through hydraulic modelling that the proposed scheme reduces the fluvial flood risk to all areas downstream of the road. It has also been shown that the proposed scheme itself is not at risk of flooding up to the 1% annual exceedance probability (AEP) event plus 75% climate change. This is in excess of required 1% AEP plus 30% climate change event to which NRW requires the road to be designed.

³⁵ **St Athan Northern Access Road, Flood Consequence Assessment**, AECOM, March 2017, ref: 60509148/BRRP0001/1.

485 Surface water management by SuDS has been identified to maintain runoff from the highway to greenfield rates provided by NRW. A 30% increase in rainfall intensity owing to climate change has been incorporated into the design of the surface water drainage system. The highway has been tested for exceedance events of 1% +75% climate change AEP and 0.1% AEP to assure that flooding is kept to a minimum in extreme events. The SuDS features include dry swales and infiltration trenches with control features limiting the flow rate into Llanmaes Brook, Boverton Brook and Nant y Stepsau to the greenfield runoff rate.

Utilities

Diversions works

486 As noted above, a number of existing utilities cross the site. It is proposed that where necessary these will be diverted in liaison with the statutory undertakers in accordance with the **New Roads and Street Works Act 1991** and the **Diversions Works Code of Practice**.³⁶ This will involve a range of measures including lowering, slewing, re-aligning or removing existing buried services. Where overhead lines cross the site it may be necessary to raise the catenary level of the lines or otherwise divert the services beneath the proposed road.

Provision of new services

487 Any potential development served by the NAR will require new services including electricity, gas, telecommunications, potable water and sewerage. Given that the precise nature and scale of these developments have not been confirmed, it is not possible to include service provision within the construction of the NAR. Nor is it known where the services would be routed from.

³⁶ **Measures Necessary Where Apparatus is Affected By Major Works (Diversions Works): A Code of Practice**, HMSO, London, June 1992.

488 However, in order to ensure against new services being laid within the NAR after it has been constructed, the new road will include a service corridor comprising a 5.0 m wide grass strip to the south of the road within which new services can be laid as and when needs arise. In addition, service culverts will be provided at strategic locations along the NAR to ensure against the need for carriageway crossings.

Phasing and delivery

489 It is proposed that the NAR will be constructed in two phases. The first phase of advance works will be undertaken from October 2017 to May 2018 to address environmental and ecological constraints. The second phase, to construct the road, will then start in May 2018 and completion of the road is programmed for August 2019. These dates assume planning permission is granted in July 2017. It is intended that all works will be undertaken by a single contractor appointed by the Welsh Government.

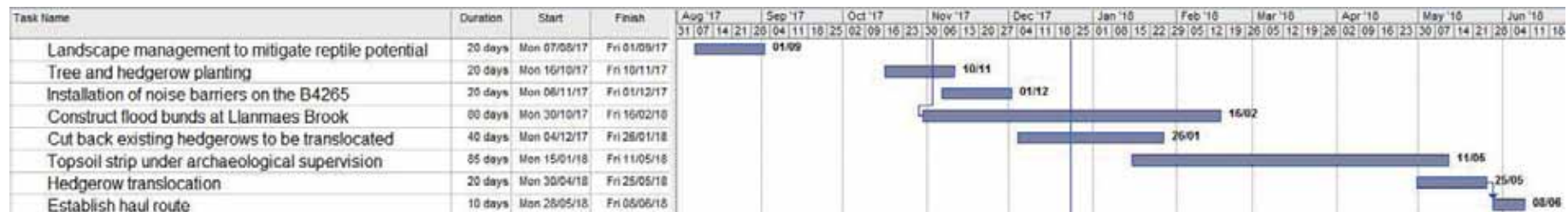
490 Phase 1 – advance works: the first phase of advance works that are programmed to be undertaken from October 2017 to May 2018 will comprise the following:

- Establishment of a site compound at the eastern end of the site near Picketston Gate to the north of Eglwys Brewis Road.
- Landscape management works to mitigate reptile potential near Llanmaes Brook. These works shall involve strimming back existing vegetation to discourage foraging and hibernation.
- Advance planting works: where possible, in locations away from the line of the proposed road, tree and shrub planting will be undertaken in advance of the construction of the road to allow new vegetation to establish before the road

opening. Such works are likely to be concentrated on the area around Llanmaes Brook.

- Construction of the flood bund and flood alleviation culverts at Llanmaes Brook. It is proposed that flood alleviation measures will be installed at Llanmaes Brook as part of the first phase of works. This will enable further flood alleviation measures within Llanmaes to be undertaken by the Vale of Glamorgan Council. It should be noted that the works in Llanmaes village do not form part of this application.
- Hedgerow translocation under a protected species licence for dormouse. These works will involve cutting down the existing hedgerows which cross the line of the proposed road to approximately 200 to 300 mm above ground level. The following spring the hedgerows, including the root balls and surrounding soils, will be translocated onto the boundary line of the new road, connecting up to the existing hedge network.
- Topsoil strip under archaeological supervision. Topsoil will be removed from the footprint of the road and stockpiled for future use. The works will be undertaken under archaeological supervision and will comprise a strip, map and record of the footprint of the road and any associated features. Undertaking the archaeological works early will ensure sufficient time for the appropriate level of excavation, recording and sampling of the archaeology before the construction works starting.
- Establishment of a haul route along the length of the site. Once the above works have been completed, the contractor will establish a haul route along the length of the site. Temporary fencing will be installed to maintain security for adjacent landowners.

Below Figure 09 Advance works programme



- Installation of acoustic barriers on the B4265. A section of noise barrier is proposed along the B4265 in the vicinity of the proposed roundabout. The works would involve reducing sections of the existing vegetation to low level to allow the noise barriers to be installed at the top of the cutting. Undertaking these works early will give time for the vegetation to re-establish before the new road is opened and will also help to mitigate the noise impact to local residents during construction.

491 A draft programme illustrating the timing of the above works is provided in Figure 09 above.

492 During the advance works, the site would be accessed mainly from Picketston Gate off Eglwys Brewis Road at the eastern end of the site. A secondary access will also be provided at the western end of the site off Eglwys Brewis Road via an existing agricultural access to Boverton Court Farm near the railway bridge. A further access will be established at the centre of the site from Llanmaes Lane opposite Rose Cottage via Froglands Farm. Site access arrangements will be confirmed with each of the tenant farmers once the Contractor has been appointed.

493 **Phase 2 – road construction:** it is anticipated that construction of the road will take approximately 14 months to complete, starting in May 2018 and completing

in August 2019. During this time the contractor’s compound will be positioned at the eastern end of the site near Picketston Gate to the north of Eglwys Brewis Road. When accessing the site, the contractor will only be permitted to use the access routes indicated on AECOM drawing 60509148-SHT-30-0000-CT-0160, which accompanies the planning application.

494 The construction programme will be developed by the contractor following appointment. A public liaison representative will be appointed who will communicate with affected parties to confirm construction arrangements.

495 Requirements for traffic management on the B4265 and at Eglwys Brewis Road when constructing the junctions at either end of the site will be confirmed with the Council and communicated to the public via site notices. Both junctions have been designed ‘off-line’ to so that they can be constructed alongside the existing road network, thus minimising traffic disruption during construction.

496 **Post-construction:** The road will be subject to a 12 months’ defects period whereby the contractor will be responsible for correcting defects that manifest during this period. On completion of the defects period the road will be adopted by the Vale of Glamorgan Council.

497 Landscape maintenance activities (such as grass cutting, weeding and mulching) will continue to be the contractor's responsibility for a further four years (five years from construction completion), to allow sufficient time for the vegetation to establish. The landscaping shall then become the responsibility of the Council to maintain.

5 Access statement

Development plan policies

501 The statutory requirements for design and access statements require that the statement explains the policy or approach adopted as to access and how policies relating to access in the development plan have been taken into account. The development plan (UDP) policies relevant to this access statement are:

- **Policy 2** – proposals which encourage sustainable practices will be favoured including proposals which are located to minimise the need to travel, especially by car and help reduce vehicle movements or which encourage cycling, walking and the use of public transport.
- **Policy 8** – developments will be favoured in locations which are highly accessible by means of travel other than the private car and minimise traffic levels and associated unacceptable environmental effects.
- **Policy TRAN 9** – provision for cycle routes.

502 The thrust of Policies 2 and 8 relates to the location of new development, whereas the current application seeks permission for a new highway to serve existing and future development. In the emerging development plan (LDP), the NAR is subject of a specific policy, Policy MG 16.

Vehicular and transport links

503 The primary function of the NAR is to provide a high-quality link to the ABP to enable, and to help attract, economic investment in the enterprise zone. Reference should be made to paragraphs 405 to 411 of this report for further details on why the proposed route has been selected.

504 The position of the main access into the ABP, at the eastern end of the NAR at Picketston Gate, has been selected for three reasons. First, to tie into the existing public highway in an appropriate location where there is space available to construct a suitable junction; second, to tie into the internal access roads within the ABP; and third, to provide access into the ABP without compromising the security of the MoD site.

505 The entrance to the site will include a new signal controlled junction on the existing Eglwys Brewis Road. This will be in keeping with the nature of the NAR and will respond appropriately to the existing highway network, tying into Eglwys Brewis Road to the east. Landscaping will be provided in the areas adjacent to the signalised junction to provide an attractive gateway entrance to the ABP. The proposed roundabout to the south of the signalised junction also offers the potential for further landscaping and gateway features.

506 As well as providing vehicular access for general traffic, the proposals also include the provision of bus stops to cater for bus services along the NAR. As discussed in paragraph 425 of this report it is anticipated that bus services will remain on their existing routes until such time as demand dictates that either the existing routes are amended to run along the NAR, or otherwise new services are deployed.

507 Emergency vehicles will be able to use the new route with no restrictions.

Inclusive access

508 In accordance with the provisions of the **Active Travel (Wales) Act 2013** the needs of pedestrians and cyclists have been considered at the design stage. The proposals include the provision of a 3.5 m wide shared footway/cycleway alongside the NAR for its entire length. This will extend along the B4265 to provide links towards

Llantwit Major, Boverton and Llanmaes. Further footway provision is also proposed at the eastern end of the NAR to provide a pedestrian link towards Eglwys Brewis.

509 Uncontrolled crossings will be provided at all junctions along the proposed route and signalised toucan crossings will be provided at the signalised junction at the entrance into the ABP. An uncontrolled crossing is proposed at Llanmaes Lane at the centre of the site to enable the existing route to continue to be used by pedestrians and cyclists.

510 The NAR also includes a widened northern verge to allow for the possible construction of an additional footway if future demand requires.

511 The proposals will provide improved safe routes to schools for the local community who will be able to use the proposed footway/cycleway alongside the NAR and along the B4265. Existing routes along Eglwys Brewis Road will benefit from reduced traffic volumes and additional sections of footway which are proposed to connect up and link with existing footways where present.

512 Where appropriate, tactile surfaces on footways will be used to assist blind and visually impaired people.

513 It is proposed that Sustrans will be consulted on the final proposals for inclusive access.

6 The case for granting planning permission

The need for the proposed NAR

601 The Welsh Government has designated eight enterprise zones in Wales: areas intended to create the best possible conditions in which businesses can thrive. One of these – the Cardiff Airport and St Athan Enterprise Zone – is located in the Vale of Glamorgan and focuses on the aerospace and defence sectors. It is centred on two strategic airfield assets owned by the Welsh Ministers: Cardiff Airport, which serves passenger, freight and wide-bodied maintenance, repair and overhaul clients; and St Athan, a base for aerospace activity for more than fifty years, which specialises in narrow-bodied and rotary-wing operations.

602 At St Athan the purpose of the NAR is to provide high-quality, direct access to existing and future employment development at the ABP (including the new Aston Martin car manufacturing facility) and to two new housing sites proposed by the Vale of Glamorgan Council.

603 Access to the ABP is currently achieved via the Main Gate (also known as West Gate) that serves the Ministry of Defence military camp. This is far from ideal because the necessary military security arrangements at the gate can result in delay and may be regarded as inimical to business enterprise. Moreover, the arrangement under which the ABP is accessed via Main Gate will end in 2019. It is essential, therefore, that the NAR should be in operation by then.

604 A new, high quality access road is required to ensure that future employment growth at the ABP is maximised. The successful future development of the ABP, as part of the Enterprise Zone, is a key objective not only of the Welsh Government but also of the Vale of Glamorgan Council. The Council's latest development plan strategy focuses employment growth on a limited number of key sites – of which the ABP is the largest – and regards the NAR as being of strategic importance.

The previous planning permissions

605 In 2009, the local planning authority granted two planning permissions for redevelopment of the military camp at St Athan:

- the first permission was for the Defence Technical College then proposed by the Ministry of Defence (application no. 2009/00500/OUT); and
- the second permission was for the ABP (application no. 2009/00501/OUT).

606 Common to both these applications was a northern access road, extending north-eastwards from the B4265 to Eglwys Brewis, which was intended to serve as the principal access to both the ABP and DTC as well as to the service families' housing associated with the college. Although those applications were made in outline, the NAR was fully designed and full planning permission was granted for it.

607 Unfortunately, in October 2010, the DTC project was terminated by the UK Government and these planning permissions could not be implemented. The Welsh Government has subsequently remained committed to the ABP as part of its wider strategy for the continued development of the aerospace sector in Wales.

608 To support this commitment, the Welsh Government intends to build the NAR, albeit not in the form for which planning permission was granted in 2009. The design of the road has been reconsidered in the light of current circumstances and requirements. It is now of reduced scale and the design has been amended to omit the previously-approved bridge across the Llanmaes Brook and to lower the carriageway.

Subsequent developments

609 Since the UK government's decision not to build the DTC at St Athan, there have been four important developments affecting the ABP.

610 First, although the DTC is not proceeding, the Welsh Government is proceeding in earnest with its plans for the ABP. Some 200 jobs are already located there and this will be boosted significantly when Aston Martin starts production in 2019. The company has commenced work on converting the Super Hangar and its plans include the creation of 750 jobs in the manufacturing sector, recruitment for which has commenced already.

611 Second, the Welsh Government has given a special designation to St Athan:

- It has designated St Athan as a "Strategic Opportunity Area" in **People, Places, Futures: The Wales Spatial Plan Update 2008**, which is a national statutory plan. Strategic opportunity areas are important focuses for economic development, capable of offering potential regional benefits from their sustainable development.
- It has designated Cardiff Airport and St Athan as an enterprise zone, one of only eight in Wales, which are designated with the aim of creating new jobs and sustainable economic growth.

These designations give St Athan a special place in the Welsh Government's plans to promote economic growth in Wales, which is already meeting with success.

612 Third, in 2014, the Welsh Government commissioned the preparation of a high-level strategic development framework for the Cardiff Airport and St Athan Enterprise Zone. The report of this study states that the enterprise zone "... represents an

unprecedented opportunity to deliver significant aviation and defence related economic growth...” and that:

“...the Aerospace Business Masterplan is well-defined and provides long term business assurance to organisations thinking of moving to St Athan. The Masterplan optimises the use of the existing Super Hangar and includes the provision of dual purpose narrow body/wide body hangars and other facilities which can be flexibly configured for civil or military base maintenance use. New development is to be developed in phases, according to the envisaged release of land currently occupied by MoD. This includes proposals for a new northern access and residential units.”¹

613 Fourth, the Vale of Glamorgan Council is well advanced in preparing its new development plan for the area: the **Vale of Glamorgan Local Development Plan 2011-2026**. The LDP sets out the Council’s aspirations for meeting the employment and housing needs of the area in the period up to 2026. As far as St Athan is concerned, the LDP proposals include for:

- 305 hectares of **employment** land at the ABP (Policies SP 2, SP 5, MG9(3) and MG 10);
- substantial areas of **new housing**, including two sites (estimated to accommodate 465 homes) that will be directly accessed from the NAR (Policies SP 3, MG2(6) and MG2(7)); and
- the **Northern Access Road** itself (Policies SP 7, MG 10 and MG 16(14)), in respect of which the **LDP** says:

¹ Cardiff Airport - St Athan Enterprise Zone: Strategic Development Framework, Welsh Government, 19 February 2015, pp29 and 30.

“... The NAR is considered essential to facilitate development at the Enterprise Zone and deliver the economic benefits to the Vale of Glamorgan and wider region.”²

It is anticipated that the LDP will be adopted in mid 2017.

The benefits of the proposed NAR

614 The NAR will provide direct access:

- to existing and future employment developments at the ABP; and
- to two of the LDP housing sites proposed by the Council, which are located between the proposed NAR and the existing Eglwys Brewis Road.

615 The NAR will facilitate the further development of the ABP, enabling St Athan to meet its potential as an economic growth area as envisaged in both national and local planning policy. This will help build on the Welsh Government’s existing success in attracting businesses to the ABP, most notably the new Aston Martin manufacturing facility located in the Super Hangar.

616 The NAR will facilitate the development of the two LDP residential sites and the design of the NAR includes the junctions that will serve them, which will be built at the same time as the road. These two sites have been assessed by the Council as having capacity for 465 new homes. The Council has calculated that there is a requirement in the Vale of Glamorgan for a total of 9,460 new homes to meet housing need in the period up to 2026. In providing appropriate direct access to the two LDP sites, the NAR will assist in meeting the Vale’s requirement for new housing, including affordable housing.

² Vale of Glamorgan Local Development Plan 2011-2026: Deposit Plan Written Statement, op cit, paragraph 6.109.

617 Consideration of providing an appropriate access to the ABP has been guided by four principles:

- **First**, the necessity to maintain military security for the MoD. At present, the ABP is accessed through Main Gate which, as explained above, is far from ideal and a temporary arrangement, terminating in 2019.
- **Second**, to deliver an appropriate high quality access to the ABP to accommodate existing and future development as an essential component of the Cardiff Airport and St Athan Enterprise Zone.
- **Third**, the necessity, as far as permissible, to limit extraneous traffic (particularly heavy goods vehicles and other commercial traffic) passing through St Athan village.
- **Fourth**, to provide airfield airside access, while safeguarding runway operation and runway safety.

618 In addition to the access benefits provided by the NAR, the proposal includes measures to help alleviate existing flood risk in the settlements of Llanmaes and Boverton. The proposal builds on work already undertaken by the Vale of Glamorgan Council and NRW and will provide greater security from flooding for local residents.

The impacts of the development

619 The planning application is accompanied by a full suite of reports, which assess the environmental and other effects of the development and, where necessary, propose mitigation measures (see **Appendix 2** for a list of these reports).

Agricultural land quality

620 National planning policy guidance seeks to conserve “best and most versatile agriculture land”, defined as land in grades 1, 2 and 3a on a scale that ranges from Grade 1 (excellent) to Grade 5 (very poor). An agricultural land classification report is submitted in support of the planning application. This shows that the majority of the land in the footprint of the NAR is classified as either Grade 3b (moderate) land or Grade 4 (poor) land, neither of which is categorized as “best and most versatile agriculture land” and neither of which, therefore, presents a constraint to development. A small area of land towards the western end of the NAR is classified as Grade 3a (good) land and is categorized “best and most versatile agriculture land.” This small area amounts to approximately 0.626 hectare only. Planning policy states that land in grades 1, 2 and 3a should be developed only if there is an overriding need for the development and either previously developed land or land in lower agricultural grades is unavailable or available lower grade land has an environmental value which outweighs the agricultural considerations.

Air quality

621 An air quality assessment has been undertaken, which considers the potential for the NAR to result in impacts on air quality during both construction and operational phases. The NAR is not located in any of the Vale of Glamorgan’s air quality management areas (AQMA), in which nitrogen dioxide annual mean concentrations have been identified to be above air quality objectives. The assessment demonstrates that the NAR will not result in significant adverse effects on air quality and is therefore considered to be consistent with relevant planning policy. As such, no additional mitigation measures (apart from good practice on-site management measures during construction) are proposed.

Archaeology and heritage

622 No previously recorded archaeological assets have been identified within the footprint of the NAR and, accordingly, no potential physical impacts have

been identified. There is the potential for previously unrecorded archaeology to be discovered during construction. In view of this, a detailed programme of archaeological intervention will be proposed in a method statement and agreed with the Glamorgan-Gwent Archaeological Trust in its role as archaeological adviser to the Vale of Glamorgan Council. The intervention will comprise a “strip, map and record” of the footprint of the road and any associated features and will be undertaken in advance of the main construction work. The intervention will be programmed to allow sufficient time for the appropriate level of excavation, recording and sampling of the archaeology.

623 There are no statutorily designated heritage assets within the footprint of the NAR. There are parts of two conservation areas, one scheduled monument (Bedford Castle) and seven listed buildings within the 500 m buffer. Three of the listed buildings are located in Boverton (south of the B4265), one in Llanmaes village, two to the east of the site (at Picketston and Eglwys Brewis), and one to the south. The last, Bethesda'r Fro Chapel, is the closest to the proposed road, at a distance of approximately 150 m. An assessment, supported by a site visit, has been made of the potential impact of the development on the setting of the listed buildings (as required by section 66 of the **Planning (Listed Buildings and Conservation Areas) Act 1990**) and on the setting of the other statutorily designated heritage assets. No potential adverse impacts on the setting of any listed building, scheduled monument or conservation area have been identified.

Ecology

624 The site does not contain any statutorily designated sites for nature conservation, the nearest being over 4 km from the site. Furthermore, no non-statutory sites are present within the site.

625 A full range of ecology surveys was carried out across the site during 2016, with some further surveys in 2017. The site contains a mosaic of habitats, being

largely dominated by grassland, subject to varying levels of agricultural improvement, and arable fields. Smaller areas of habitat present include dense scrub, semi-natural broadleaved woodland, hedgerows and amenity grassland.

626 Protected species surveys identified the presence of a number of species within the habitats on-site, including a hazel dormouse nest and single adult hazel dormouse recorded in the east of the site. Based on connectivity of suitable habitats, their presence has been assumed within hedgerows across the site. In addition, two badger setts were located on-site (a large main sett and an outlier sett) with slow worm found in low numbers associated with the Llanmaes Brook stream corridor. Surveys also recorded twelve notable invertebrate species, with a diverse breeding bird population recorded, largely comprising relatively common species associated with the hedgerow, scrub and woodland habitats. No evidence of water vole, otter or great crested newt was recorded during the surveys, but it has been assumed that otter may commute along Llanmaes Brook and Boverton Brook. No bat roosts were recorded within the site and bat activity surveys recorded relatively low levels of activity across the site, with six bat species recorded. Bat activity was largely associated with the field boundaries and streams.

627 The results of the surveys have informed the design of the development, which has focused on the retention, enhancement and protection of important habitats as far as is possible and the maintenance of habitat connectivity through and around the site (to allow species free movement and avoid fragmentation impacts). The development will require an application for a European protected species licence for hazel dormice and a NRW licence to close an outlier badger sett.

Flood risk

628 The application is supported by a FCA report, prepared in consultation with NRW and in conformance with **TAN 15**.

629 The NAR crosses two watercourses – Boverton Brook and Llanmaes Brook – lies close to a third (Nant y Stepsau), intersects overland flow routes and, although the majority of the site is located in flood zone A, passes adjacent to areas of flood zone C2. As such, flood modelling has been undertaken to inform the design of the watercourse crossings and to assess the flood risk from the NAR. To address the impact of the NAR on these flow routes, mitigation measures are proposed as part of the design, in the form of upstream storage areas with flood bunds containing overspill weirs, culverts and flood relief culverts. Results from the modelling demonstrate that even during 100% blockage scenarios, flood levels downstream of the scheme are decreased beyond the baseline results and upstream storage volumes remain less than 10,000 cubic metres. The proposed scheme provides betterment downstream of the NAR and reduces flood depths and peak flows at Boverton and Froglands Farm. The scheme provides overall benefit to flood risk in the area.

Geotechnical

630 The design of the NAR scheme has been informed by both desk-top and intrusive site investigations, the results from which are contained in the relevant supporting reports. Groundwater was encountered at relatively shallow depths and the ground conditions do not appear suitable for the use of pit soakaways for surface water drainage.

Landscape and visual amenity

631 The NAR is located in an area that is partly rural in nature, but heavily influenced in places by the large scale buildings and structures associated with the ABP and military camp. Views towards the site from the residential areas to the south tend to be more rural in nature, whereas the views southwards and eastwards tend to be degraded by the presence existing development within and adjacent to the ABP.

632 The NAR is located in a **landscape** that has no statutory designation, but may be valued locally for its rural appearance. However, the proposal is typical of similar

development close to the site and includes extensive landscape mitigation measures to integrate the proposed highway into its landscape context.

633 The site does not contain any landscape features that are considered to be important at a local, district/county or national level. The scheme will result in the loss of a relatively low number of trees and hedgerows which are not considered to be important at a site level.

634 The effect on landscape character will be direct and largely relate to the visibility of the largest vehicles using the NAR and the additional source of night-time lighting. At all levels of landscape character assessment, the effect of the proposed scheme is considered to be negligible and therefore not significant.

635 The effect of the NAR on **visual amenity** is considered in the context of the adjacent developments which are recognisable features in the local landscape. Local topography and surrounding retained vegetation, augmented by the extensive landscape mitigation to be implemented as part of the proposed scheme, will provide substantial screening of it. This results in the proposed scheme being completely screened or only partly visible from the majority of the views. As such it has been assessed that only a single visual receptor will experience a significantly adverse visual effect in the long term.

Noise and vibration

636 An assessment has been undertaken of the potential noise and vibration effects of the NAR during both construction and operation. Mitigation measures have been proposed and incorporated in the scheme, including acoustic barriers in the vicinity of the closest receptors and at the western end of the scheme where the B4265 is realigned. A low noise road surface is also proposed for the NAR, but has not been taken into account in the assessment.

637 At the **construction** phase, there is the potential for large, temporary, adverse effects at nearby receptors from construction noise, and moderate construction vibration annoyance effects at the very closest residential receptors, owing to the compaction of earthworks using vibrating rollers. The risk of construction vibration induced building damage due to such works is considered to be very low.

638 During **operation** of the NAR, in the short term, a slight adverse effect is predicted at the majority of the residential receptors in the study area, while at seven properties close to the scheme the adverse effect is assessed as moderate or large. A slight beneficial effect is predicted at certain properties along Eglwys Brewis Road as traffic transfers from that highway to the NAR. In the long term, a slight adverse effect is predicted at the majority of receptors in the study area; a moderate adverse effect at 173 properties (139 of which are predicted to experience a moderate adverse effect even if the NAR is not built); and a major adverse effect at four properties closest to the scheme.

Traffic

639 The planning application is accompanied by a TA, the scope of which was agreed beforehand with the local planning authority and highway authority. As a road does not of itself generate traffic, the principal purpose of the TA was to help inform the design of the NAR and its junctions. The TA allows, in particular, for the future development of the ABP (including Aston Martin) and of the LDP housing sites that would be served by it. It is considered that the NAR will provide a suitable access for all modes of travel from the B4265 to the ABP. The NAR and its junctions will have sufficient spare capacity to accommodate future growth and development served by the road.

Relevant planning policies

The adopted development plan

640 Section 38(6) of the **Planning and Compulsory Purchase Act 2004** requires that where the development plan is material to the planning application, the application shall be determined in accordance with the plan "...unless material considerations indicate otherwise."

641 The NAR is not shown on the **UDP Proposals Map**. However, it qualifies as an infrastructure development under criterion (i) of Policy ENV 1. It is necessarily located in the countryside and there is no other acceptable location for it. It is therefore compliant with this policy.

642 The NAR has been assessed in relation to all of the other adopted development plan policies considered relevant by the Council, as set out in its pre-application advice: see paragraph 305 above. It is considered that the proposal performs well in relation to all those policies and that any non-compliance is outweighed by the overriding need for the development.

The emerging development plan

643 The NAR is a central and important proposal of the emerging development plan. The LDP is at a very advanced stage of preparation, the independent examination having been completed, and is expected to be adopted shortly.

644 Advice on the weight to be attached to an emerging LDP is set out in PPW, which states:

"The weight to be attached to an emerging LDP (or revision) when determining planning applications **will in general depend on the stage it has reached**, but does not simply increase as the plan progresses to adoption. When conducting the

examination, the appointed inspector is required to consider the soundness of the whole plan in the context of national policy and all other matters which are material to it. Consequently, policies could ultimately be amended or deleted from the plan even though they may not have been the subject of a representation at deposit stage (or be retained despite generating substantial objection). Certainty regarding the content of the plan will only be achieved when the Inspector delivers the binding report. Thus in considering what weight to give to the specific policies in an emerging LDP that apply to a particular proposal, **local planning authorities will need to consider carefully the underlying evidence and background to the policies. National planning policy can also be a material consideration in these circumstances.**³

645 In applying this advice, having particular regard to those parts emboldened in the quotation above, the following factors are relevant:

- **Stage of LDP preparation:** The LDP is not at an early stage of preparation and is approaching adoption. Therefore, although certainty cannot be assured until the inspector has reported, the LDP should now be accorded some weight in the decision-making process.
- **Underlying evidence and background to the policies:** The underlying evidence is that an appropriate new access for the ABP is required. This is supported by the Welsh Ministers as the site owners and site promoters, and is reflected in the strategic development framework for the enterprise zone and the master plan for the ABP. The requirement is recognised also by the Council, not least in its designation of St Athan as a “key development opportunity” and by its identification of the NAR as being “essential” and of strategic importance.

³ **Planning Policy Wales**, op cit, paragraph 2.14.1, page 27 (emphasis added).

- **National planning policy:** As noted below, national planning policy supports the proposal.

National planning policy

646 The WSP designates St Athan as a “Strategic Opportunity Area”, intended to convey regional and not just local benefits. For St Athan to fulfil its regional economic potential, it is essential that the ABP should be served by adequate infrastructure including an appropriate new access.

647 National planning policy guidance, PPW, states that both the need for and the alignment of new local roads should be examined through development plan procedures. As noted above, the NAR is an integral part of the LDP and as such has been subject to extensive public consultation and examination by an independent inspector.

The Eglwys Brewis Road option

648 Public engagement in the run-up to submitting the planning application revealed that some local residents consider that there are better alternatives to the proposed NAR.

649 One of these is the concept of a southern access road, which would lead northwards from the B4265, crossing the railway line, and entering the ABP south of the runway. This is a proposal that is retained in the ABP master plan, but to serve proposed development south of the runway only. For operational, safety and security reasons, this proposal is not a viable solution to serve development north of the runway.

650 The other, more strongly-pressed option is an improvement of the existing Eglwys Brewis Road. This, together with a number of other options, was the subject of a comprehensive access study undertaken in 2009. In response to representations

made by Llanmaes Community Council and others, this option has been reviewed in detail, the results of which are reported in the separate **Eglwys Brewis Road Options Report**,⁴ which is submitted in support of the application.

651 The report concludes that although both options have various advantages and disadvantages and constraints that would need to be overcome, the NAR has fewer, less costly and less time-impactful constraints to overcome. The main factors are considered to be:

- The ability to deliver the NAR to the required timescale, which is vital given the pending restrictions imposed by the MoD from 2019 in respect of the existing entrance to the ABP via Main Gate.
- Conversely, the risks associated with upgrading Eglwys Brewis Road – particularly in respect of maintaining Network Rail service levels while achieving the required construction timescale imposed by the MoD requirements, as well as the need for land acquisitions (potentially by compulsory purchase) – are considered to be a significant disadvantage.
- The opportunities for addressing flood risk by incorporating flood alleviation measures into the NAR design.
- Buildability constraints associated with upgrading Eglwys Brewis Road.
- Opportunities for Safe Routes to Schools' improvements if the NAR is constructed.

652 In conclusion, having assessed both options in detail, the NAR remains the Welsh Government's preferred option for providing access to the ABP. The proposals for the redevelopment of the St Athan site will generate increased levels of traffic and it is considered essential that the ABP is accessed by roads of appropriate design, specification and construction, providing safe access, and that traffic congestion on the existing local road network and adverse environmental impacts to existing communities are minimised as far as possible and mitigated where necessary. Given the size and nature of the ABP proposals, the creation of a high-quality link to the existing highway network is considered essential in attracting new investment.

Conclusion

653 The NAR is properly regarded as a strategically important piece of infrastructure, essential to the future development of the ABP (the largest employment allocation in the Vale of Glamorgan), while also providing access to two major housing site allocations. It is recognised by the Welsh Government and by the Vale of Glamorgan Council as being crucial to the future economic success of the Cardiff Airport and St Athan Enterprise Zone.

654 Statutory planning policies support the proposed development of the NAR:

- At the national level, by the identification of St Athan as a "strategic opportunity area" in the WSP and by the area's designation as an enterprise zone.
- At the local level, the proposal complies with adopted development plan Policy ENV1 and performs well in relation to other UDP policies. In the emerging development plan, the NAR is regarded as being of strategic importance to a "key development opportunity" in the emerging development plan, is designated on the LDP Proposals Map and is compliant with LDP policies including, specifically, Policy MG 10 and Policy MG 16(14).

⁴ St Athan Northern Access Road: Eglwys Brewis Road Options Report, op cit.

655 The planning application for the NAR is supported by a full suite of reports which assess the effects of the proposed development, both beneficial – as, for example, in the case of improving security against flood risk – and potentially adverse. Where necessary, appropriate mitigation measures have been incorporated into the scheme design and will be implemented in compliance with the planning conditions that would be imposed on any grant of planning permission.

656 It is essential that the NAR is built by 2019, to correspond with the date when the existing temporary arrangement governing access to the ABP via the MoD's Main Gate ceases. When operational, the NAR will provide a new, permanent, high quality access, thereby helping to fulfil the aspirations for further economic growth of the ABP – building on the Welsh Government's success in attracting Aston Martin to the site – and for much-needed housing provision in the Vale of Glamorgan.

Appendices

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Appendix 2

List of supporting reports

- A097705rep170526v3.indd Design and access statement and planning statement (WYG)
- A097705 Pre-Application Consultation Report (WYG)
- 60509148/CFRP0002/1 Non-Statutory Public Consultation Report (AECOM)
- 60509148/BRRP0001/1 Flood Consequence Assessment (AECOM)
- 60509148/CFPR0007/0 Drainage Strategy (AECOM)
- 60509148/FINAL Air Quality Impact Assessment (AECOM)
- 60509148/NORP0001/0 Noise and Vibration (AECOM)
- A097705/2 Transport Assessment (WYG)
- 60509148/CFRP0001/2 Eglwys Brewis Road Options Report (AECOM)
- 60509148/PSSR/0 Preliminary Sources Study Report (AECOM)
- 60509148/GI/2 Factual Ground Investigation Report (AECOM)
- 60509148/GIR/0 Ground Investigation Report (AECOM)
- 60509148/CFRP0006/1 Phase 1 Geo-Environmental Assessment (AECOM)
- 60509148/LDRP0001/D Historic Environment Desk-Based Assessment (AECOM)
- A097705 Ecological Assessment (WYG)
- 60509148/LDRP/0002 Arboricultural Report (AECOM)
- 60509148/LDRP/0004 Landscape and Visual Impact Assessment (AECOM)
- 60509148/LDRP/0003/2 Landscape and Ecological Management and Maintenance Plan (AECOM)

- A097705 Template Method Statement to be used within a Dormouse Development Licence Application (WYG)
- KCC2370 Agricultural Land Classification (Kernon).

Appendix 3 Planting schedules

LE1.1: Amenity grass seed mix

Species	%
Agrostis capillaris	10
Festuca rubra ssp rubra	20
Festuca longifolia	30
Lolium perenne	25
Poa compressa	10
Trifolium repens	5

Planting notes

Top soil depth	100 mm
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Sowing rate	35 g/m ²
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LE1.3: Species-rich grassland

Species	%
Agrostis capillaris	10
Festuca rubra ssp rubra	20
Festuca longifolia	30
Lolium perenne	25
Poa compressa	10
Trifolium repens	5

Planting notes

Top soil depth	100 mm
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Sowing rate	5 g/m ²
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LE2.4: Linear trees and shrubs

Species	%
Alnus glutinosa	15
Betula pendula	7.5
Corylus avellana	7.5
Crataegus monogyna	2.5
Ilex aquifolium	5
Quercus robur	17.5
Prunus avium	2.5
Prunus spinosa	2.5
Salix cinera	5
Tilia cordata	2.5

Planting notes	
Top soil depth	300 mm
Density	2 m centres

LE2.4.1: Linear trees and shrubs – mix 2

Species	%
Alnus glutinosa	15
Acer campestre	10
Betula pendula	5
Corylus avellana	25
Crataegus monogyna	25
Malus sylvestris	5
Prunus avium	10
Quercus robur	5

Planting notes	
Top soil depth	300 mm
Density	2 m centres

LE2.5: Shrubs with intermittent trees

Species	%	Planting notes	
Acer campestre	15	Top soil depth	300 mm
Crataegus monogyna	15		
Corylus avellana	30	Density	Shrub planting at 2 m centres Tree planting at 15 m centres
Ilex aquifolium	5		
Prunus spinosa	10		
Malus sylvestris	5		
Rhamnus cathartica	5		
Salix caprea	5		
Sorbus aucuparia	5		
Viburnum lantana	5		
Individual trees			
Acer campestre	15		
Corylus avellana	20		
Quercus robur	65		

LE2.6: Shrubs

Species	%	Planting notes	
Crataegus monogyna	20	Top soil depth	300 mm
Corylus avellana	50		
Ilex aquifolium	5	Density	1.5 m centres
Prunus spinosa	15		
Rosa canina	10		

LE4.2: Native hedgerow

Species	%
Acer campestre	15
Corylus avellana	15
Crataegus monogyna	55
Prunus spinosa	5
Viburnum opulus	5
Viburnum lantana	2
Rhamnus cathartica	3

Planting notes	
Top soil depth	300 mm
Density	Double staggered row at 0.3 m centres and 0.3 m between rows

LE4.2.1: Native hedgerow – amenity mixture

Species	%
Acer campestre	10
Cornus sanguinea	20
Corylus avellana	15
Crataegus monogyna	35
Prunus spinosa	5
Viburnum opulus	5
Viburnum lantana	2
Rhamnus cathartica	3
Rosa canina	5

Planting notes	
Top soil depth	300 mm
Density	Double staggered row at 0.3 m centres and 0.3 m between rows

LE4.4: Native hedgerow with trees

Species	%	Planting notes	
Hedgerow species as LE4.2 plus individual trees as below		Top soil depth	300 mm
Alnus cordata	20	Density	Hedgerow as LE4.2; trees as indicated on landscape drawings
Quercus robur	70		
Tilia cordata	10		

LE5.1: Individual trees

Species	%	Planting notes	
Alnus cordata	20	Top soil depth	300 mm
Quercus robur	70		
Tilia cordata	10	Density	As indicated on landscape drawings

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