18. Schedule of Mitigation

18.1. Introduction

18.1.1. As described throughout this Environmental Statement (ES), the design of the proposed development has been iteratively developed taking account of identified environmental constraints and considerations, enabling avoidance or reduction of potential environmental impacts, where practicable, such that measures to mitigate these impacts are embedded in the design.

18.1.2. It should be noted that this chapter does not summarise the embedded or good practice measures which are described elsewhere throughout the technical chapters of the ES, including the design interventions and controls. This chapter summarises the additional mitigation measures identified in the ES which are considered necessary to avoid; minimise; restore or offset potential impacts. This chapter also summarises measures to compensate for potential impacts. No additional mitigation measures were identified in Chapters: 5 (Transport and Access), 9 (Landscape and Visual Impact Assessment), 11 (Ground Conditions and Contaminated Land), 12 (Water Environment, Flood Risk and Drainage), 14 (Climate Change and Carbon) and 15 (Heat and Radiation).

18.1.3. The purpose of the Schedule of Mitigation is to collate the additional mitigation and compensation identified within each of the technical chapters of the ES for ease of reference. Table 18.1 to Table 18.5 set out a description, location, and purpose for each mitigation item. The tables also state whether consultation or approval with a consultee is required. Each mitigation/compensation item is assigned a reference code, which corresponds with the codes provided in the Framework CEMP (Appendix 3.1).

18.1.4. The timing of mitigation varies and may be a design requirement, or implemented prior to construction, during construction and/or during operation of the proposed development. Appropriately worded conditions to consent will secure the implementation of all mitigation measures outlined.

Table 18.1: Air Quality (Chapter 6) Additional Mitigation and Compensation

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
AQ1	Across site and within 100 m of application site boundary	Construction	Undertake daily on-site and off-site inspection. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of application site boundary, with cleaning to be provided if necessary.	PCC
AQ2	Across site	Construction	Carry out regular site inspections, record inspection results, and make an inspection log available to the local authority when asked.	PCC
AQ3	Across site	Construction	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	PCC
AQ4	Across site	Construction	Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations (if required) with the Local Authority.	PCC
AQ5	Across site	Construction	The suggested good practice mitigation measures, which should be adopted for the proposed development are presented in Appendix 3.1 (Framework CEMP) and Appendix 6.4 (Air Quality Technical Appendix – Air Quality Mitigation).	PCC

Table 18.2: Noise and Vibration (Chapter 7) Additional Mitigation and Compensation

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
NV5	Locations detailed in description column	Construction	Construction noise barriers should be installed in the following areas (as a minimum) for the periods of works where significant adverse effects are otherwise anticipated unless it can be otherwise demonstrated though on-site	PCC

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
			monitoring and investigations during construction works that in the absence of noise barriers impacts would not be significant: • Between Cawdor Barracks residential accommodation and any active works areas for Months 8 to 9 of the programme. Noise barriers are most effective when positioned close to the noise source or receptor locations. Therefore, temporary noise barriers should be installed around each works area or around receptor R23 (Cawdor Barracks) allowing for access requirements.	
NV6	Across site	Construction	The following site-specific mitigation should also be implemented where appropriate in accordance with BPM to minimise disturbance and adverse impacts: • No HGV movements should be permitted during night working. All vehicle movements will be controlled through the implementation of a Construction Traffic Management Plan / Construction Environmental Management Plan, which will be agreed with PCC prior to construction. • Piling works are not proposed at this time. However, should ground investigations determine that piling will be required, noise impacts can be minimised through the use of non-percussive methods, such as rotary bore, vibratory or press-in piling rigs. Where impact piling is necessary due to local ground conditions, mitigation methods such as proprietary acoustic shrouds and pile cushions/driving dollies should be used. • Ensure the proposed plant noise emissions are similar or below the preliminary construction plant noise levels used within this assessment; and that, where practicable, the plant is the quietest available for the proposed use. • Ensure that works areas (including lay-down and compounds) are as far from receptors as possible, and no closer than those indicated in the construction layout drawings provided by the project team.	PCC

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
			• Utilise as much of the existing hard standing as possible for works areas and compounds instead of forming new hard standings. • Where necessary, alternative reversing warning systems (such as white noise alarms) shall be employed in place of tonal 'squawkers'.	
NV7	Across site	Construction	Where possible, noisy works in close proximity to sensitive receptors should be programmed such that works do not take place for more than 10 days in any consecutive 15, or more than 40 days in any consecutive 6 months.	PCC
NV8	Across site	Construction	Letter drops explaining construction noise and vibration would typically aid communication with the local community. A dedicated site contact for the public and a complaints-handling procedure should also be put in place.	PCC
NV9	Antenna locations	Operation	The detailed design of noise mitigation is beyond the scope of this chapter and will be undertaken by the responsible Contractor (Northrop Gruman Corporation) post-consent and prior to operation. The following minimum noise reductions should be achieved; where practicable, guidance has been provided on possible engineering solutions that may be implemented. • Rx antenna should be designed and specified to not exceed a maximum operational Sound Power Level in 'normal' operational conditions of 75 dB LwA. This is equivalent to a 15 dB reduction to the equipment installed at DS1. Given the mechanical nature of the noise generated by this equipment, it is anticipated that any attenuation achieved for the 'Normal' condition will result in similar attenuation during all other operational conditions. • Tx antenna should be designed and specified to not exceed a maximum operational Sound Power Level in 'normal' operational conditions of 79 dB LwA. This is equivalent to a 11 dB reduction to the equipment installed at DS1. Given the mechanical nature of the noise generated by this equipment, it is anticipated that any attenuation achieved for the 'Normal'	PCC

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
			condition will result in similar attenuation during all other operational conditions. • All antenna pedestal condenser units (Tx and Rx) should be designed and specified to not exceed a maximum Sound Power Level of 68 dB LwA. This is equivalent to a 6 dB reduction to the equipment installed at DS1. This may be achieved through the selection of alternative equipment or the installation of localised acoustic enclosures. • All Tx fluid/coolant pumps should be designed and specified to not exceed 60 dB LpA at 1 m (free-field). This is equivalent to a 10 dB reduction to the equipment currently proposed. This may be achieved through the selection of alternative equipment or the installation of localised acoustic enclosures. • All Tx adiabatic chiller units should be designed and specified to not exceed 55 dB LpA at 1 m (free-field). This is equivalent to a 5 dB reduction to the equipment currently proposed. This may be achieved through the selection of alternative equipment or through the installation of localised acoustic screens. Acoustic screens, if implemented, shall be formed to a height sufficient to remove all direct line of sight between the equipment and nearby noise sensitive receptors; commonly, this requires the barrier to be formed to ≈ 0.5 – 1.0 m taller than the equipment being screened. Acoustic screens shall be either solid and imperforate from ground level with a minimum 15 kg/m2 superficial mass, or formed from proprietary acoustic louvre modules achieving a minimum 17 dB Rw.	
NV10	Generator locations	Operation	All proposed generators should be designed and specified to not exceed 75 dB LpA at 1 m (free-field), inclusive of the flue ductwork and termination. This is equivalent to a 5 dB reduction to the equipment currently specified. This may be achieved through the appropriate specification of equipment and is considered readily achievable for ‘packaged’ generators installed within acoustic enclosures.	PCC

Table 18.3: Biodiversity (Chapter 8) Additional Mitigation, Compensation and Enhancement

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
BD9	Across site	Construction	To reduce the impacts of noise and visual disturbance to ground-nesting birds during construction, suitable habitats present within the works area would be strimmed to ground-level to render them unsuitable for nesting, preferably in advance of the breeding bird season (i.e. before end-February, see BD7). Plant and site contractors would be constrained to working within prescribed working areas and access corridors. This would be implemented, where practicable, through the installation of temporary barriers to minimise damage to retained habitats and minimise the potential for disturbance to ground-nesting birds. Appropriate noise and visual disturbance screening barriers would be installed around works areas to ensure the surrounding environment remains undisturbed for ground-nesting birds, where necessary, to be confirmed by the ECoW.	PCC / NRW
BD10	North of the western arm of the air strip	Construction and operation	Management and enhancement of habitats within the application site for grassland fungi would comprise (see Figure 3.4 Landscape and Ecology Proposals Plan): • Area A – Area of unmanaged, rank grassland to the north of the north-western arm of the air strip to be managed for the benefit of grassland fungi. This would include the commencement of an annual mow-and-collect regime to improve the diversity of the grassland and prevent scrub encroachment. • Area B1 – Clearance of an area of transitional scrub and future management as per Area A. This would be the receptor site for grassland turves. • Area B2 – If Area B1 is already supports a good assemblage of grassland fungi Area B2 would undergo clearance of an area of transitional scrub with future	PCC / NRW

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
			management for the benefit of grassland fungi. If translocation is feasible this would be the backup receptor site. • Area E – The managed grassland areas surrounding the main barracks also contain assemblages of fungi, including waxcaps. These grassland areas would be appropriately managed to ensure the continued growth of waxcaps.	
BD11	North of the eastern arm of the air strip	Construction and operation	An area of dense scrub to the north of the eastern arm of the air strip would be enhanced through management to improve the structure of the existing scrub, and to create clearings, glades, rides, and sheltered edges for the benefit of wildlife, including reptiles (see Area C Figure 3.4: Landscape and Ecology Proposals Plan). Hibernaculum would also be created within this area using materials such as brash and excavated uncontaminated soil excavated during construction and habitat clearance works.	PCC / NRW
BD12	Far south of the application site	Construction and operation	The gappy hedgerow located to the far south of the application site, positioned along the western and southern boundary of the playing fields would be enhanced. The width of the hedgerow would not increase to ensure there is no further encroachment of vegetation into the playing fields. Enhancement would include the planting of new vegetation to fill the gaps and appropriate management to rejuvenate the existing plants. Where practicable vegetation planting would utilise native species of local origin.	PCC / NRW
BD13	Across site	Construction and operation	A Grassland Fungi Mitigation Plan would be developed to detail the actions required to protect, translocate and manage the fungi grassland throughout the construction and operation process within the application site. The methodology provided within this document would be based on previous experience by the ecological consultant and lessons learned from previous experience of fungi grassland habitat relocation undertaken in Suffolk. This document would also include results of the monitoring undertaken at this relocation project to justify	PCC / NRW

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
			and demonstrate the viability of the approach. Detail in this document would be developed in discussion with Professor Gareth Griffith, Chair in Mycology at the University of Aberystwyth prior to submission to the LPA. A summary of actions to form part of the plan are detailed in Chapter 8 (Biodiversity). A monitoring programme would be an essential component of the Plan to establish success.	

Table 18.4: Archaeology and Built Heritage (Chapter 10) Additional Mitigation and Compensation

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
AB1	Across the site	Pre-construction	Mitigation measures in relation to archaeology and built heritage stated within the Archaeological Management Strategy (AMS) and Written Scheme of Investigation (Appendix 10.5) must be implemented pre-construction.	PCC, CADW, Heneb DM – Dyfed region
AB2	Across the site	Pre-construction	Update the AMS pre-construction once detailed design is finalised.	PCC, CADW, Heneb DM – Dyfed region
AB3	Across the site	Construction	Where avoidance of potential significant effects on below ground archaeological remains is not possible, mitigation should be applied through preservation of records, that is, the implementation of archaeological excavation and recording.	PCC, CADW, Heneb DM – Dyfed region

Table 18.5: Lighting (Chapter 16) Additional Mitigation and Compensation

Mitigation/Compensation Item	Approximate Location	Timing of Measure	Description	Specific Consultation or Approval Required
LG6	Across the site	Construction	Ongoing monitoring during the construction phase is proposed to ensure that, if temporary lighting is required in proximity to a Potentially Sensitive Ecological Receptor (PSER), appropriate responsive mitigation can be implemented as necessary.	PCC