Defence Infrastructure Organisation

Salisbury Plain

Army Basing Programme

Outline Environmental Appraisal

Interim Environmental Report

Version 1

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DIO Ops Projects

Ramillies Bldg

Marlborough Lines

Monxton Rd

Andover

SP11 8HJ

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Contributors:	
DIO Programme Head	David Underhill
DIO Assistant Programme Manager:	David Snelgrove
Study Team:	DIO ABP Infrastructure Delivery Team & PSP URS
Author:	Colin Bush (URS)
Reviewers:	DIO ODC IPS Team

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1. INTRODUCTION

1.1 About this Interim Environmental Report

The Defence Infrastructure Organisation (DIO) proposes to seek planning permission for certain developments in and around Salisbury Plain as part of the Army Basing Programme (ABP), which provides accommodation for Army personnel returning from Germany or otherwise relocating during the period to 2020.

A Masterplan is being developed to facilitate consultation on the ABP proposals as they affect Salisbury Plain, including Salisbury Plain Training Area (SPTA). The Masterplan will be accompanied by an Outline Environmental Appraisal (OEA), which will describe baseline conditions, identify possible significant environmental effects, capture the cumulative effects of the proposals and recommend mitigation measures to offset any identified significant adverse environmental effects at an early stage.

This Interim Environmental Report (IER) summarises the work undertaken to date to inform the Masterplan and accompanies the Planning Context Report for public consultation. It includes a summary of the comments received from stakeholders to an earlier consultation on the Scope of the OEA which took place in December 2013. This can be found in Appendix A, which also includes the proposed actions arising from these comments.

1.2 Need for an Outline Environmental Appraisal

The OEA can be thought of as a first step in the environmental assessment process, an overarching appraisal that identifies the likelihood of significant effects based on the development proposals as they are currently understood. As the Salisbury Plain Masterplan describes a programme of development occurring over several years, it is likely that the OEA will need to be reviewed and possibly updated as proposals for specific sites are brought forward for planning consent. In some circumstances, these proposals may also be subject to statutory environmental assessment.

The Environmental Impact Assessment (EIA) Directive (2011/92/EU) sets out the circumstances in which statutory environmental assessment, or EIA, is required for certain projects. The Directive is transposed into English law through Statutory Instrument 2011 No. 1824 The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (The EIA Regulations).

The EIA Regulations divide development into two classes: Schedule 1 projects where EIA is always required and Schedule 2 projects requiring EIA only if the particular project in question is judged likely to give rise to significant environmental effects. It is likely that some of the Army Basing projects on Salisbury Plain will require EIA given their potential for significant environmental effects, although the Masterplan itself will not require planning permission and so it is not subject to the EIA Regulations.

Future applications for planning consent will be screened to see if EIA is needed. If it is determined that EIA is required, an Environmental Statement (ES) would accompany the planning application but it is intended that the OEA will form the basis for the cumulative environmental effects assessment for the statutory EIA. The OEA will also provide environmental information relevant to ABP planning applications which do not require EIA.

1.3 Relationship with the Masterplan and Planning Applications

The relationship between the OEA, Masterplan, other environmental, sustainable development and town planning aspects of the ABP are shown overleaf.

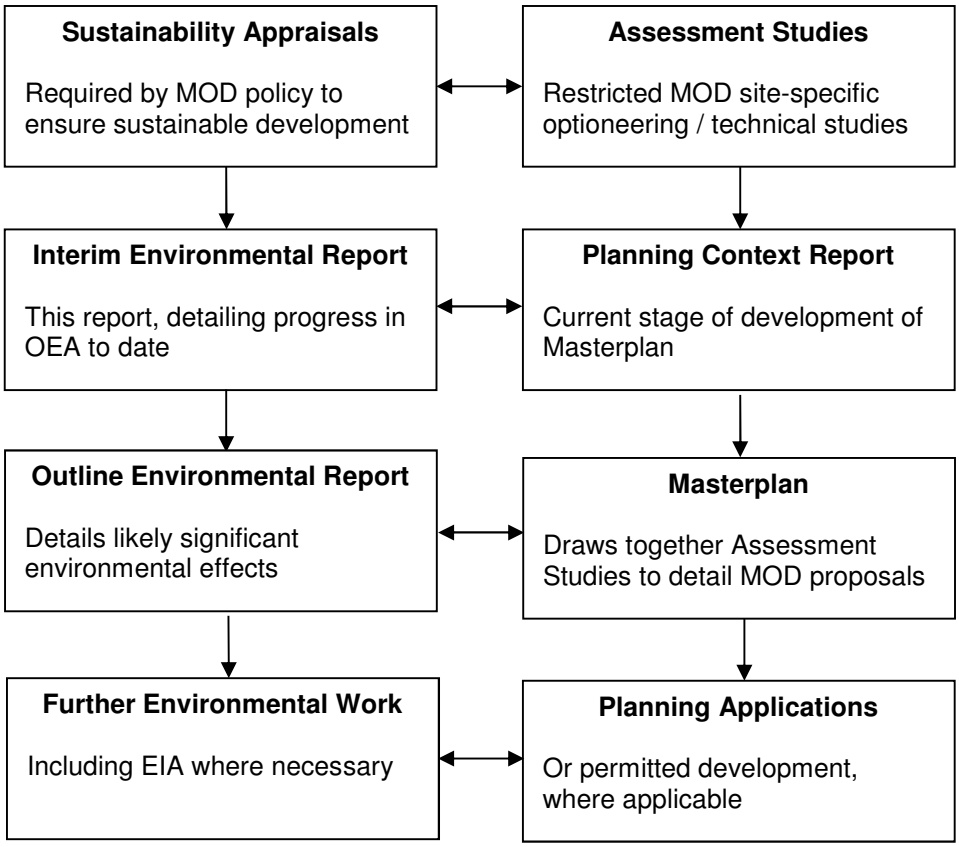


Figure 1.1: Relationship between OEA and Other Studies

There are a number of unit moves taking place early in the ABP programme. To support these moves, in order to provide accommodation, utilities and operational facilities at the earliest opportunity, there are a number of priority works being considered. Subject to further stakeholder discussions, these early works may be grouped as separate EIA screening requests and planning application packages in 2014/15.

1.4 Other forms of Assessment

The Secretary of State's Policy Statement on Safety, Health, Environmental Protection and Sustainable Development (MOD, 2013a) requires *inter alia* that the Ministry of Defence complies with all UK environmental legislation. Where derogations apply for reasons of national defence the Ministry *"will maintain departmental arrangements that produce outcomes that are, so far as reasonably practicable, at least as good as those required by UK legislation"*.

The Environmental Assessment of Plans and Programmes Regulations 2004, usually known as the Strategic Environmental Assessment (SEA) Regulations, do not apply to plans and programmes whose sole purpose is to serve national defence. Sustainability Appraisals are

therefore being carried out for all elements of the ABP to fulfil the Secretary of State's policy commitment and ensure that the strategic decision-making is informed by environmental and sustainable development considerations.

The Conservation of Habitats and Species Regulations (2010), however, do apply to plans and programmes for national defence and a Habitats Regulations Assessment (HRA) will be undertaken for the ABP. A separate HRA will also be carried out for the Salisbury Plain Masterplan. The OEA will include a chapter which will signpost and summarise relevant information from the previous chapters, in accordance with EC, Defra and MOD Guidance. It is proposed that the MOD will act as lead Competent Authority for ABP HRAs and will "guide, review and approve" this OEA HRA chapter.

1.5 Structure of the Interim Environmental Report

Chapter 2 of the Interim Environmental Report describes the context of the report, whilst Chapter 3 provides an overview of the unit moves in and out of Salisbury Plain. Chapter 4 describes the military training activities currently taking place on SPTA and how the environmental impacts arising from these activities are managed at present. It also describes the future training infrastructure requirement and sets out a framework for assessing the change in future military training.

The remaining chapters set out the content of the Outline Environmental Report, including the issues to be considered and the methods used to assess the likely significant environmental effects. The Interim Environmental Report concludes with a section describing the work undertaken to date, explains how this has influenced the preparation of the Planning Context Report and provides a gap analysis of environmental information that will not be available for the OEA but may be required to accompany planning applications and statutory EIAs.

1.6 To Comment on the Interim Environmental Report

The IER and the Planning Context Report are available for public comment during February and March 2014. To comment on the IER please write to Giles Rowe at Building 21, Westdown Camp, Tilshead, Salisbury, SP3 4RS or e-mail giles.rowe887@mod.uk.

2. SALISBURY PLAIN MASTERPLAN

2.1 Introduction

This chapter explains the reasons for developing the Salisbury Plain Masterplan within the context of the ABP.

2.2 Army Basing Programme

The ABP is the latest in a series of major announcements by the Government towards a major reconfiguration of the British Army. Announced on 5th March 2013 (MOD, 2013b), it is predicated upon the new Army 2020 plan outlined in July 2012 for the restructuring of the British Army. Two key principles guided the review: that the armoured infantry brigades should be centred round a single location, and the Army should retain a UK-wide presence. The ABP envisages an Army increasingly consolidated around seven centres in the UK with the closure of a number of bases, a faster withdrawal from Germany and an end to the culture of routine rotation in the UK. The Government has committed £1.8 billion to the new basing plan, of which £1 billion will be spent on new / refurbished housing and technical accommodation.

The ministerial announcement on 5th March confirmed Salisbury Plain as a major focus of the Reaction Force element of Army 2020, with three armoured infantry brigades based around Salisbury Plain. SPTA is the only place in the UK where the Army can carry out certain complex and demanding training exercises and the concentration of synergistic units around SPTA is intended to facilitate these exercises. In total around 4,300 extra personnel will be posted to or living in Salisbury Plain subject to gaining the necessary planning, environmental and other regulatory approvals.

2.3 Salisbury Plain Training Area

SPTA is the largest military training area in the United Kingdom and consists of around 390 km^2 of land owned by the Ministry of Defence. It is the largest surviving area of unimproved chalk downland in north-western Europe and is a protected habitat of international value. It is renowned as an historic landscape with many designated heritage assets but is also valued as agricultural land, with significant portions being grazed or under cultivation. Although public access is restricted at certain times or in certain areas for reasons of safety, there are several main roads and public rights of way where access is not restricted. Salisbury Plain (which includes, but is not limited to SPTA) also hosts a number of barracks, mainly located on the periphery of the training area. These include Warminster, Bulford, Tidworth, Perham Down, Upavon and Larkhill Garrisons.

2.4 Salisbury Plain Masterplan

The Masterplan is being prepared to illustrate the totality of the development proposals for Salisbury Plain including SPTA, and to facilitate consultation with stakeholders and the public. It includes all key elements of development that will be needed to accommodate the incoming Army units.

The Masterplan envisages new build Single Living Accommodation (SLA), conversion of existing SLA blocks and additional messing facilities. It also proposes extensive new build and some conversion of existing technical accommodation, including workshops, garaging,

armouries, stores and offices. In addition it provides for up to 1,400[1] new houses for service families (known as Service Family Accommodation, or SFA).

The sites affected are primarily the garrisons at Upavon, Larkhill, Tidworth, Bulford and Perham Down, although SFA is proposed off site in the wider community. Details of the proposed unit moves at each site are given in Chapter 3: Proposed Development. A drawing showing the location of sites primarily affected is presented within the draft Planning Context Report.

The preparation of the Masterplan is the responsibility of consultants WYG. It incorporates the following remaining stages:

- Stakeholder and public consultation (19th February to 1st April 2014)
- Review of responses from stakeholders and public consultation (2nd April 2014 to 29th April 2014)
- Issue to Wiltshire Council (WC) of Context Report & Statement of Community Involvement for review (14th April 2014 to 29th April 2014)
- Publication of Masterplan and OEA (20th May 2014)
- Public consultation (21st May to 17th June 2014)

[1] Note that the Scoping Report for the OEA quoted an older, incorrect figure of 1,600 SFA dwellings.

3. PROPOSED DEVELOPMENT

3.1 The Proposals

The unit moves for the whole ABP are listed in the Regular Army Basing Plan (MOD, 2013) and, as they affect Salisbury Plain, are shown in the following tables. Note that these unit moves will not occur all at once but rather are scheduled to take place over several years and to be complete by 2020.

Bulford: Unit Moves

Out
1st Battalion The Royal Anglian Regiment - to Woolwich
4th Battalion The Rifles – to Aldershot
Land Intelligence Fusion Centre - to Hermitage
In
Headquarters 20th Armoured Infantry Brigade – from Sennelager, Germany
1st Battalion The Princess of Wales' Royal Regiment – from Paderborn, Germany
1st Battalion The Mercian Regiment – from Catterick
5th Battalion The Rifles – from Paderborn, Germany
No Change
Headquarters 3rd (United Kingdom) Division
Headquarters 12th Armoured Infantry Brigade
3rd Signal Regiment
3rd Regiment Royal Military Police
Special Investigation Branch Regiment Royal Military Police
4 Military Intelligence Battalion

Larkhill: Unit Moves

Out
Military Stabilisation Support Group – to Hermitage
In
1st Regiment Royal Horse Artillery – from Tidworth 19th Regiment Royal Artillery – from Tidworth 26th Regiment Royal Artillery – from Gütersloh, Germany 47th Regiment Royal Artillery – from Thorney Island
No Change
32nd Regiment Royal Artillery

Perham Down: Unit Moves

Out
None
In
35 Engineer Regiment – from Paderborn, Germany
No Change
22 Engineer Regiment 26 Engineer Regiment

Tidworth: Unit Moves

Out
1st Regiment Royal Horse Artillery – to Larkhill
19th Regiment Royal Artillery – to Larkhill
5 FS Battalion Royal Electrical and Mechanical Engineers – to Cottesmore
In
Headquarters 1st Artillery Brigade and Headquarters South West - from Upavon
The Queen's Royal Hussars (Queen's Own and Royal Irish) – from Sennelager, Germany
Royal Tank Regiment – from Honington
1 Armoured Medical Regiment – from Sennelager, Germany
5 Armoured Medical Regiment – from Catterick
3 Armoured Close Support Battalion, REME – from Paderborn, Germany
No Change
Headquarters 1st Armoured Infantry Brigade
The King's Royal Hussars
1st Battalion The Royal Regiment of Fusiliers
1st Battalion The Royal Welsh
4 Armoured Close Support Battalion, REME
6 Armoured Close Support Battalion, REME

Upavon: Unit Moves

Out
Headquarters 8 Engineer Brigade - to Minley Headquarters 1st Artillery Brigade and Headquarters South West – to Tidworth
In
None, although a small uplift to headcount in existing units
No Change
Headquarters 1 Intelligence & Surveillance Brigade 2 Military Intelligence Battalion

Warminster: Unit Moves

Out
None
In
None
No Change
1st Battalion The Yorkshire Regiment

It can be seen from the above tables that the site experiencing the greatest net change is Larkhill, with four artillery regiments moving to the base. Bulford and Tidworth also experience substantial change but unit moves into these bases are offset in part by units moving out. Perham Down will see an additional engineering regiment move to the base. The net increase across Salisbury Plain is one armoured infantry brigade and supporting units.

In total, there will be approximately 7,700 people moving to the Salisbury Plain area, comprising 4,300 additional service personnel plus their families. In terms of service personnel, the future Army 2020 figures at each location are expected to be as follows:

- Bulford: 3,453 personnel (an increase of 735)
- Tidworth and Perham Down: 5,397 personnel (an increase of 1,236)
- Larkhill: 3,955 personnel (an increase of 2,053)
- Upavon: 531 personnel (an increase of 254)
- Warminster: no change

4. MILITARY TRAINING

4.1 Overview of Training on SPTA

Whilst not part of the Salisbury Plain Masterplan itself, details of the likely future training requirement are also provided since these are effects that must be taken into account in the OEA. At present there are typically 10-20 units using SPTA at any one time, although at times this can rise to as many as 40 units. SPTA is divided into areas to facilitate the most efficient allocation of military training taking into account the areas varying characteristics and military capability.

Broadly speaking, dry training, which is all training and movement that does not involve live firing, can be conducted in all areas within the SPTA boundary. However dry training is not normally conducted within the central impact area owing to the threat of unexploded ordnance.

Within the training area boundary there are four specific danger areas that are used for live firing:

- Bulford Danger Area (BDA) is a small arms complex comprising eight rifle ranges located in the east of the training area.
- The central impact area (comprising Areas 15 and 16) is located in the centre of SPTA and is used for the majority of direct and indirect weapons including air gunnery.
- Areas 1-4 are located in the west and are used primarily for armoured manoeuvre; in addition the areas are used for live firing as required for major exercises.
- Warminster Danger Area (WDA) is a small arms complex located in the west of SPTA comprising eight rifle ranges and a grenade range.

Safe access and egress on to the training area is controlled by a system of red flags, warning signs and barriers. Live firing takes place on most weekdays with night firing normally on Tuesdays and Thursdays. Additionally up to 12 weekends per year are authorised for live firing.

Training includes elements of some or all of the following:

- Access and manoeuvre by all types of vehicle from light wheeled to heavy wheeled and tracked armoured vehicles;
- Convoy and tactical logistic patrol movement;
- Access and manoeuvre on foot;
- Digging of trenches and mine-ploughing;
- Bivouacking and cooking;
- Urban operations;
- Firing of blank rounds, in conjunction with safety regulations;
- Use of pyrotechnics, in conjunction with safety regulations;
- Live firing of all types of weapons within safety parameters;

- Weapons trials;
- Use by foreign armed forces;
- Installation of temporary structures (Hesco bastions, cover from view fencing, portable buildings, ISO containers); and
- Helicopter, Unmanned Aerial Systems and fixed wing aircraft support, including parachute drops.

Conduct of all training is directed by Range Standing Orders (RSO).

Several specialist-training areas have been developed over time to support specific military requirements. These include:

- Imber village complex terrain;
- Berril Valley Obstacle Belt (BVOB) designed to practice Engineer bridging;
- The purpose built Fighting in Built-up Areas (FIBUA) village at Copehill Down, between Chitterne and Tilshead;
- A dedicated Cross-Country Driving Area (CCDA) outside Tidworth; and
- The Royal Engineer Training Area (RETA) at Perham Down.

4.2 Potential Environmental Impacts of Military Training Activities

The main potential environmental impact from military training on SPTA itself comes from wheeled and tracked vehicles, conducting manoeuvres and training activities such as mine ploughing. SPTA is the only area in the UK where meaningful armoured manoeuvre can take place and as such the majority of the land is available for this type of training. This can cause the topsoil to be worn away exposing the chalk and regeneration of these exposed areas can take several years.

However, some 75% of vehicle movements are administrative or logistical in nature and a network of mainly stone tracks[2] has been developed with fixed crossing points where military roads cross public highways. These routes link the garrisons to the training areas and mean that often military vehicles do not impact the chalk downland environment at all. That said, where the stone tracks have deteriorated, drivers may be forced to take their vehicles off-road to avoid potholes and this can cause a rapid deterioration of the terrain in the immediate vicinity through the creation of ruts and compaction of soil. There is a residual risk, after procedures for pollution prevention have been followed, from vehicle fuel and oil spillages. Remote re-fuelling and bulk fuel / pack fuel transportation also present a risk of accidental pollution.

However, there are ecological benefits to the 'right' amount of disturbance to the chalk grassland and natural tracks. Infrequent disturbance, even if it leads to exposure of the bare chalk in some places, is acceptable and perhaps even desirable, provided that the exposed chalk is then allowed to recover.

[2] Apart from the concrete range road on SPTA West

Perhaps surprisingly, live firing has less impact on the natural environment and is restricted to designated ranges. Whilst the use of heavy weapons does leave explosion craters this only affects the two impact areas in the centre of SPTA and even within these areas cratering is not widespread. Indeed, in response to the Scoping Report (DIO, 2013), Natural England has advised that cratering at about the current rate leads to a valuable succession of bare chalk through to botanically diverse short turf, populated by rare species such as the marsh fritillary butterfly. Explosive residues and metal contamination from the use of munitions are also potential environmental impacts.

4.3 Environmental Management Arrangements on SPTA

A sustainable training regime was developed following the Strategic Defence Review (SDR) in 2000. An environmental appraisal of the SDR proposals (as they affected SPTA) was carried out and identified a need to manage training activities in order to preserve its unique features. This management regime is articulated in the SPTA Integrated Rural Management Plan (IRMP) although it has evolved and adapted to changing military requirements. Nevertheless it is still regarded as a robust and effective management system.

Military units, civil police, emergency services and some authorised civilian organisations wishing to train submit bids for time on SPTA. Their bid is reviewed and each bid is given a priority ranging from 1 to 12. Priority 1 exercises, which are usually Mission Specific Training (MST) exercises conducted prior to deployment, must go ahead and are generally not subject to restrictions. Other exercises may be restricted or even cancelled if serious environmental damage is assessed as likely to occur.

Each use is given a ‘weighting’ which is related to its likely environmental impact, which in turn depends on the unit size, proposed activity and equipment. Thus a section of eight infantrymen is given a lower rating than, say, a single Challenger II tank. Larger formations are given higher weightings, although these weightings do not necessarily increase in proportion to the unit size, because the potential environmental impact of larger formations is often less than the sum of its parts because of the type of training activities that are carried out at different unit scales.

Units are assigned to training zones each month depending on operational priorities and the available capacity. Each zone in SPTA is given a nominal capacity of 100 and this represents the capacity of the zone in both environmental and safety terms. This capacity of 100 is not an absolute limit and can sometimes be exceeded by a small amount but in general this does not happen. This restriction implies that, for example, a single tank regiment is the largest unit that could train in a given zone at any time, although in practice the largest formations are normally battlegroups composed of sub-units of different regiments operating together.

In the last couple of years, a refinement of the GP22 booking system has drawn a distinction between the weightings given to units on static training and those on manoeuvre training. Static training does not mean that the units are actually stationary but instead means that vehicles remain on the hardened tracks that run across SPTA. Manoeuvre training, on the other hand, involves vehicles going off-road. Units on manoeuvre training are given a higher weighting than equivalent units on static training, to reflect their greater environmental impact.

Damage to the chalk grassland is more likely during wet weather and during the winter months. The DIO Archaeology and Ecology Teams attend weekly meetings to review which zones are most at risk from training activity. Where it is felt that there is a high risk of damage to a particular zone, it may be agreed to direct training to a different location. Monthly meetings are also held to review training activity with a view to managing the environmental impacts. Minutes of these meetings are circulated to Natural England, English Heritage and

Wiltshire Council. Where damage has been caused, arrangements are in place to make repairs.

Digging and mine clearing require specific clearance procedures detailed in RSO because of the risks from unexploded ordnance (UXO) and potential environmental impact. These clearance procedures involve input from the DIO Archaeology and Ecology advisors. Signs instructing no-digging and no vehicles, as appropriate, are provided on all scheduled monuments and the more vulnerable non-scheduled sites, whilst penning, or palisading is also undertaken, as protection against vehicle / plough damage, for the most vulnerable sites.

Noise from live firing, especially of heavy weapons, is actively managed via a noise management system which governs when and where such firing takes place. This is discussed in more detail in the chapter on noise below. There is also an active programme of monitoring the effects of munitions on land quality on MOD ranges, including SPTA.

Management of training on SPTA has its basis in the IRMP and the procedures described above have evolved from this document and MOD Joint Services Publication (JSP) policy and doctrines. The aim is to ensure the safe use of SPTA both by the Army and other users, whilst at the same time ensuring that the sensitive environment is properly protected, managed and where appropriate, enhanced.

4.4 Future Training Requirement

The requirement for future training on SPTA is not fully defined at the time of writing. However it is known that the MOD's use of SPTA will change as a result of the withdrawal from Afghanistan and a consequent reversion to training for a variety of combat scenarios, rather than being focused on the mission-specific training needs of the Afghanistan operation. This is known as 'Return to Contingency'.

Although Salisbury Plain will host more troops in future, it is envisaged that the intensity of training activity on SPTA will remain within historical limits and well within the parameters agreed in the Environmental Appraisal of post Strategic Defence Review Training on the Army Training Estate Salisbury Plain (HLC, 2002). The Ministry of Defence has a legal duty to ensure that the environmental sustainability of sensitive habitats and heritage assets will not be compromised.

Certain enhancements of training features are being proposed although the details of these features are not known at present. Where required these would be subject to statutory planning consent and where appropriate to EIA. They include:

- An additional Electronic Target Range (ETR), within the Bulford Danger Area, proposed for the area adjacent to the Nine Mile River;
- A new Individual Battle Skills Range (IBSR), thought likely to be located on the edge of the central Impact Area;
- An engineering skills practice ground, which is assumed to be within the boundary of the existing RETA; and
- A new entrance to SPTA from Bulford Camp, crossing the Nine Mile River and avoiding the use of public roads by military vehicles.

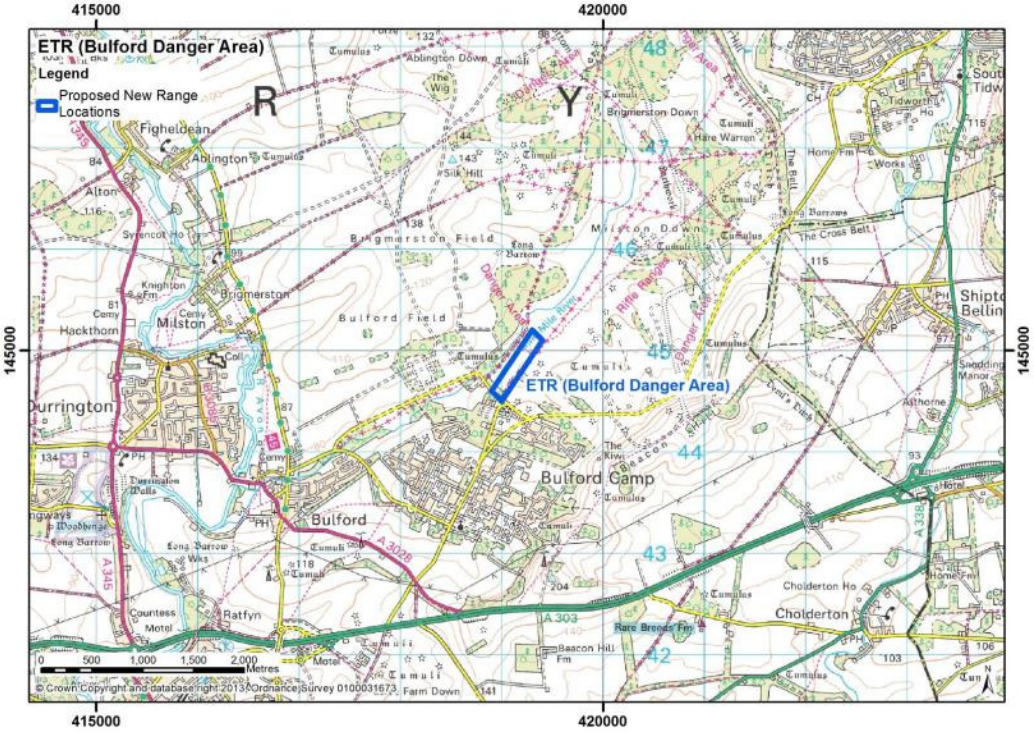


Figure 4.1: Proposed Location of Electronic Target Range

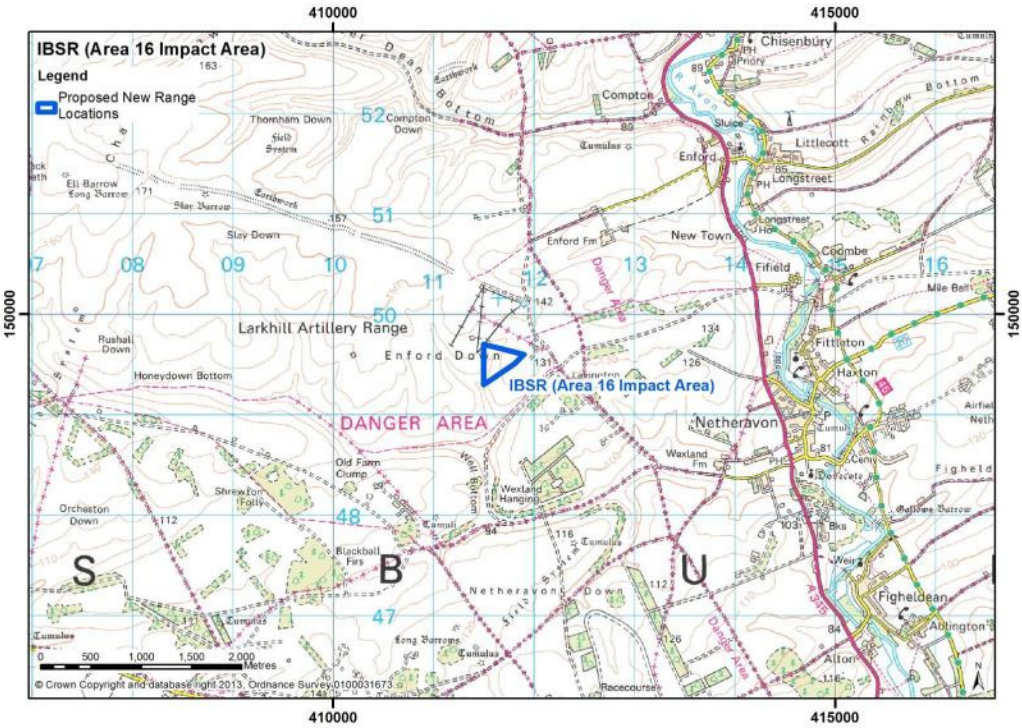


Figure 4.2: Proposed Location of Individual Battle Skills Range

In addition, a number of Return to Contingency training features are planned. Although these are unconnected to Army Basing, they will be assessed in the OEA:

- The extension of Imber village, understood to include several additional permanent buildings and changes to FIBUA village at Copehill Down; and
- The creation of the Complex Manoeuvre Environment along the Berril Valley track, south east of Imber village, comprising a number of movable wooden structures that would simulate buildings.

4.5 Methodology for Assessing Future Training Requirement

In order to assess the current and predict the future training requirement the approach set out below has been developed from the methodologies employed in the Higher Level Environmental Assessment of the Strategic Defence Review (RPS, 2000) and later in the post Strategic Defence Review Environmental Appraisal (HLC, 2002).

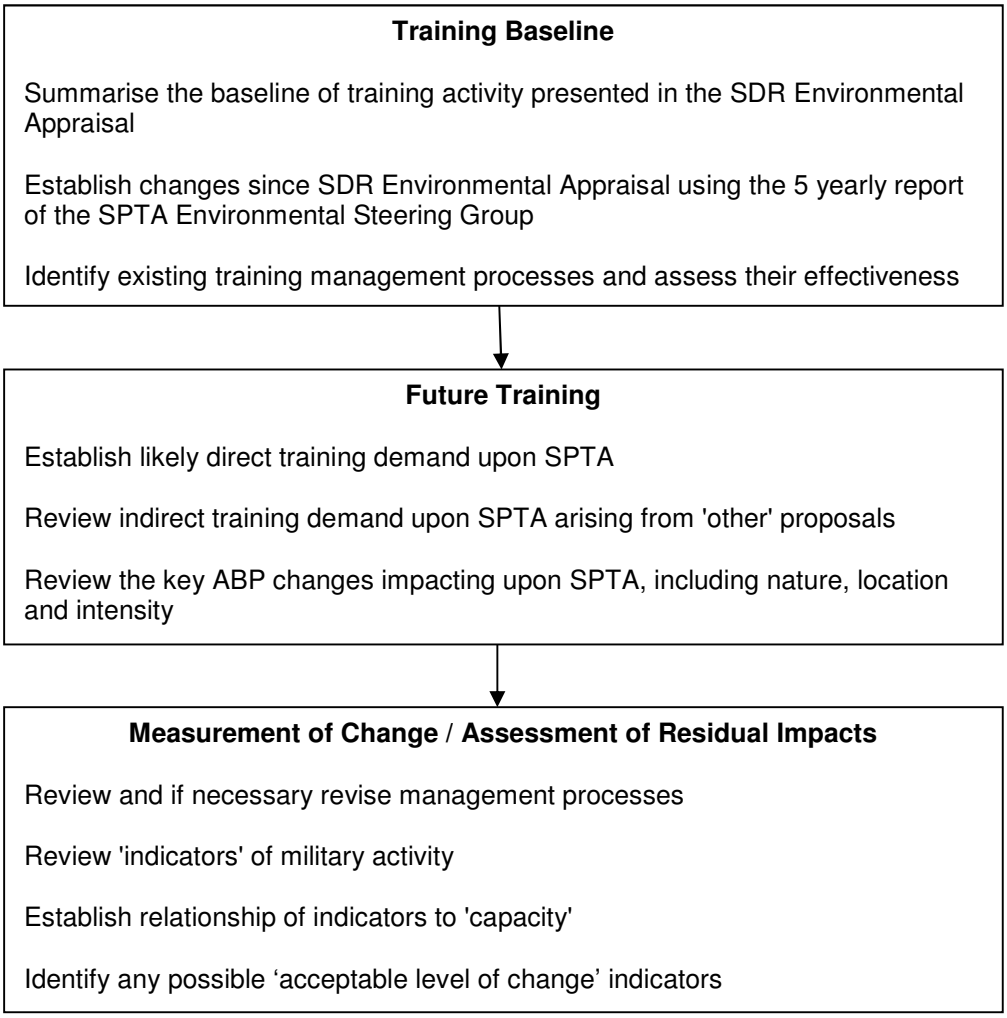


Figure 4.3: Methodology for Assessing Future Training Requirement

5. APPROACH TO THE APPRAISAL

5.1 Introduction

This chapter describes the general approach to the OEA and explains how the assessment of significant environmental effects is carried out. The intention is to treat the appraisal as if it were being carried out as a formal EIA and the methodologies to be adopted for the various technical studies will be conducted to this standard. The process is illustrated in the diagram below.

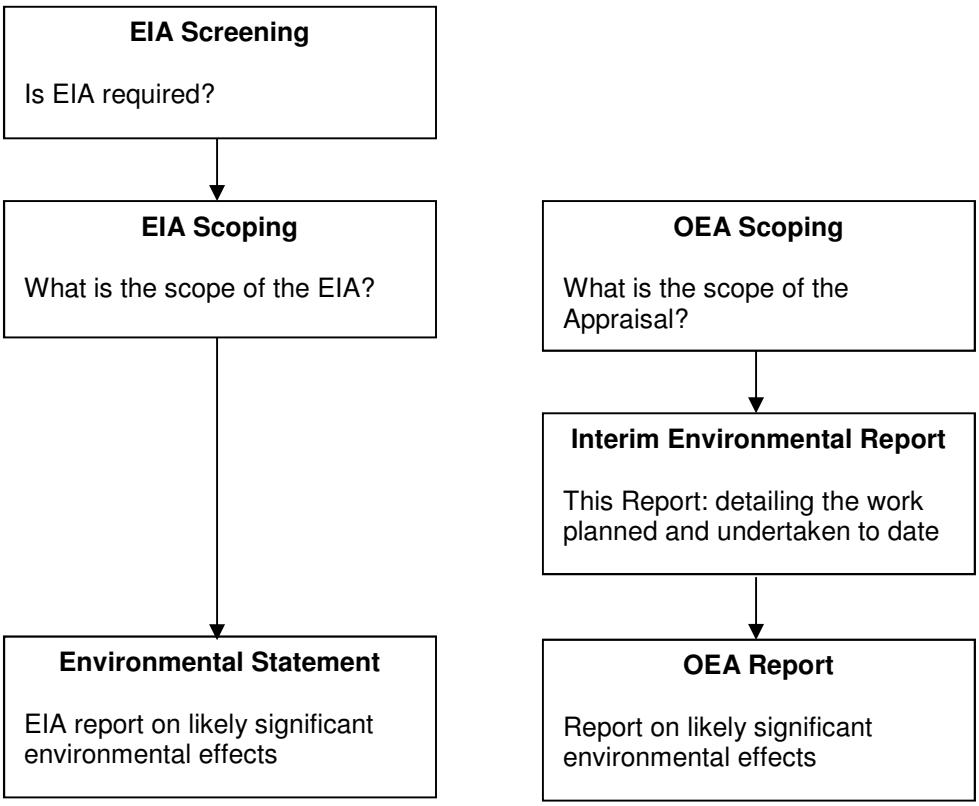


Figure 5.1: Statutory EIA and Outline Environmental Appraisal Reporting Processes

As a decision to carry out an OEA has already been taken there is no equivalent to the EIA Screening stage. A Scoping Report was prepared in November 2013 and circulated for comment amongst the statutory consultees (Environment Agency, English Heritage, Natural England and Highways Agency) as well as Wiltshire Council, Test Valley Borough Council and Hampshire County Council.

The wording of the EIA Regulations is that an ES should consider environmental effects *"including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors"*, although this list should not be regarded as definitive. As a result of the Scoping exercise the majority of these issues have been scoped into the OEA, however it was concluded that certain topics would not need to be considered. These include:

- Climate Change: significant effects on climate change emissions would not arise from the proposed developments on Salisbury Plain, although measures to minimise emissions and promote climate change resilience will be incorporated into the design of new and refurbished buildings in accordance with MOD policy and these will be described.

- Waste generation: although the potential for waste to be generated is real, volumes of waste arisings are not known at this stage and therefore an impact assessment cannot be undertaken. This will be dealt with during the detailed planning for individual developments.

The following chapters set out the methodology that was proposed for the Outline Environmental Report, as amended by the comments received from these bodies.

5.2 Outline Environmental Report

The output of the OEA will be an Outline Environmental Report which will include the content that would be expected in an ES, the formal written output of the EIA process. The EIA Regulations stipulate that an ES should, where possible, identify, describe and assess the likely significant effects of a proposed development on the environment, including the consideration of:

- Beneficial and adverse effects;

- Short, medium and long term effects;

- Direct and indirect effects;

- Permanent and temporary effects; and

- Cumulative effects and interactions.

The ES should identify and assess the likely significant effects of the proposed development in relation to both the construction works and the completed, operational development. Significant effects that arise during particular phases of development should also be identified. This content will also be included in the Outline Environmental Report where relevant.

5.3 Defining Significance

Guidance on the significance of environmental effects has been mainly of a generic nature (e.g. DETR Circular 02/99), and practitioners have been obliged to develop definitions for specific topics and projects. It is broadly accepted, however, that significance reflects the relationship between two factors:

- The magnitude or severity of an impact (i.e. the actual change taking place to the environment); and

- The sensitivity, importance or value of the affected resource or receptor.

Environmental impacts will be predicted with reference to definitive standards and legislation where available. Where it is not possible to quantify effects, qualitative assessments will be carried out, based on the best available knowledge and professional judgement. Where uncertainty exists, this will be noted.

The magnitude of predicted impact will be categorised on a scale, for example: Very Low, Low, Medium, High or Very High and will determined by reference to commonly accepted criteria. Specific criteria for the magnitude of impact will be developed for each topic, giving due regard to the following:

- Extent of the impact;
- Duration of impact (whether short, medium or long term);
- Nature of impact (whether direct or indirect, reversible or irreversible);
- Performance against environmental quality standards or other relevant pollution control thresholds; and
- Compatibility with environmental policies.

The sensitivity, importance or value of the resource or receptor will be categorised on a scale, again, for example: Very Low, Low, Medium, High or Very High and is normally derived from:

- Designated status within the land use planning system or other statutory framework;
- Reference to standards in environmental assessment guidance;
- The number of individual receptors, such as residents;
- An empirical assessment on the basis of characteristics such as rarity or condition; and
- Its ability to absorb change.

The sensitivity of certain receptors to particular impacts will also be taken into account.

Significant effects occur where valuable or sensitive resources, or numerous receptors, are subject to impacts of considerable magnitude. Effects are unlikely to be significant where low value or non-sensitive resources, or a small number of receptors, are subject to minor impacts.

Within the OEA, a generic matrix similar to the one presented in Table 5.1 will be used to classify environmental effects. Analogous matrices for the various specialist topics are used, and where these use different assessment criteria will be clearly stated within the relevant chapter.

In Table 5.1, effects having a Major or Moderate magnitude are considered to be significant. Those that are Minor or Negligible are not considered significant. The categorisation of effects in intermediate situations (e.g. Moderate / Minor) is a matter for professional judgement in each topic area.

Table 5.1: Classification of Effects

Importance of Receptor	Magnitude of Impact				
	Very High	High	Medium	Low	Very Low
Very High	Major	Major / Moderate	Moderate	Moderate / Minor	Minor
High	Major / Moderate	Moderate	Moderate / Minor	Minor	Minor / Negligible
Medium	Moderate	Moderate / Minor	Minor	Minor / Negligible	Negligible
Low	Moderate / Minor	Minor	Minor / Negligible	Negligible	Negligible
Very Low	Minor	Minor / Negligible	Negligible	Negligible	Negligible

Effects are also described as:

- Adverse – detrimental or negative consequences for an environmental resource or receptor; or
- Beneficial – advantageous or positive consequences for an environmental resource or receptor.

5.4 Mitigating Adverse Effects

Where adverse effects are predicted and particularly where these effects are considered significant, it may be possible to reduce the effect through the application of compensatory measures, known as mitigation. In these circumstances the residual effect remaining after mitigation would be re-categorised accordingly and may result in the effect no longer being considered significant.

The MOD Sustainability and Environmental Appraisal Tools Handbook states that "*the earlier mitigation measures are identified, the greater the likelihood is they can be integrated, thus avoiding 'bolt-on' solutions which are often more costly and less effective*" (MOD, 2009). The OEA presents an early opportunity to identify such mitigation measures that can be incorporated into the design of individual schemes as they are developed in the coming months, as well as the Masterplan as a whole.

Table 5.2: Mitigation Hierarchy (Source: MOD, 2009)

Avoid	Design and operate to avoid impacts, e.g. fence off sensitive areas.
Minimise at source	Put measures in place to ensure impacts are minimal, e.g. time noisy activities to avoid certain times of day.
Abate on site	Reduce impacts where they occur, e.g. provide interceptors for hard water run-off.
Abate at receptor	Put measures in place to reduce the impact where it is felt, e.g. install double glazing.
Repair	Remedy any remaining damage that cannot be avoided, e.g. restore original surface condition damaged by construction traffic.
Compensate	Provide compensation in kind, or other means, for damage that cannot be abated or repaired. For example if a hectare of important habitat has to be destroyed, a hectare of habitat could be created in a suitable area so that the overall habitat loss is nil.

5.5 Assessment Scenarios

The principal scenario to be assessed will be the situation in 2020, when all unit moves are complete. Operational effects will therefore be predicted and assessed against a future baseline of 2020, and will include the effects of provision of new SFA and changes in training regime on SPTA. The baseline will be taken to be the conditions prevailing in 2014, projected forwards as far as reasonably practicable to reflect conditions as they are assumed to be in 2020 in the absence of the proposed developments.

5.6 Spatial Scope

The spatial scope of the assessment will in general be limited to Salisbury Plain and the immediately surrounding areas. It is accepted that several units will be moving away from Salisbury Plain as a result of the ABP and it is recognised that these unit moves could in theory have significant environmental effects at their destination. Therefore it is proposed that effects at locations elsewhere in the UK should be addressed as part of the environmental / sustainability work at those locations and are not considered in the OEA.

5.7 Trans-boundary Effects

There is potential for trans-boundary effects in Germany as a result of the withdrawal of British forces from the bases at Gütersloh, Paderborn and Sennelager. However the extent of such effects would be offset to a large extent by the planned occupation of vacated British facilities by units of the Bundeswehr. Thus it is unlikely that significant trans-boundary effects would occur and therefore it is not proposed that these effects are assessed and reported in the

Outline Environmental Report. The applicability of the Espoo Convention to the ABP is currently being investigated. This may change the scope of the trans-boundary assessment of effects.

5.8 Development Programme and Construction

An outline of the construction programme will be provided and full assessment of construction effects for development 'behind the wire' and of construction effects for SPTA and SFA will be undertaken insofar as available information allows.

6. ECOLOGY AND NATURE CONSERVATION

6.1 Baseline Environmental Conditions

SPTA is designated as a Special Area of Conservation (SAC), Special Protection Area (SPA) and several Sites of Special Scientific Interest (SSSIs). It is the largest surviving expanse of unimproved chalk grassland in north-western Europe and is therefore the most important site for this habitat in the UK, with some of the best remaining examples in the UK of lowland juniper scrub on chalk. 12,933 hectares of chalk downland remain which support 13 species of nationally rare and scarce plants, 67 species of rare and scarce invertebrates and is a site of international importance for birds with records of more than a dozen Red List species.

European Sites

Salisbury Plain SAC

The SAC is designated for *Juniperus communis* formations on heaths or calcareous grasslands and for semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*). The SAC supports the largest UK population of the nationally scarce burnt orchid (*Orchis ustulata)*, together with significant populations of green-winged orchid (*Orchis morio)* and frog orchid (*Coeloglossum viride)*, both uncommon orchids associated with calcareous grassland.

It also designated for a single species: the marsh fritillary butterfly (*Euphydryas aurinia)* which exists in a cluster of large sub-populations where the species breeds on calcareous grassland.

Salisbury Plain SPA

The SPA is designated for three breeding bird species: the stone curlew (*Burhinus oedicnemu),* the quail (*Coturnix coturnix)* and the hobby (*Falco subbuteo).* It is also designated for the wintering bird species the hen harrier (*Circus cyaneus).*

River Avon SAC

The nearby river Avon, another SAC, is designated for water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation.

The site also designated for desmoulin's whorl snail (*Vertigo moulinsiana)*; sea lamprey (*Petromyzon marinus)*; brook lamprey (*Lampetra planeri)*; atlantic salmon (*Salmo salar)*; bullhead (*Cottus gobio).*

The rivers Bourne, Till and Wylye are tributaries associated with the SAC.

Other Designated Sites

In addition to the SAC / SPA designations, SSSIs on or close to the Plain are as follows:

- Salisbury Plain Site of Special Scientific Interest (SSSI) – designated for its calcareous grassland, nationally rare and scarce plants, species of rare and scarce invertebrates and its nationally and internationally important bird populations. In addition to chalk downland, this site supports scrub habitats, temporary and permanent pools and the Nine Mile River winterbourne. Species of note include great crested newt and all four species of common reptile.

- Great Cheverall Hill SSSI – designated for its chalk grassland, rare plant and invertebrate species, including three butterfly species.
- Scratchbury and Cotley Hills SSSI – designated for its chalk grassland and invertebrate species.
- Bratton Downs SSSI (only partly within SPTA) – designated for its chalk grassland, neutral grassland, broadleaved woodland, invertebrate species and geomorphological formations.
- Upton Cow Down SSSI (only partly within SPTA) – designated for its chalk grassland and invertebrate species.
- Parsonage Down SSSI (mostly outside SPTA) – designated for its chalk grassland, rare plant and invertebrate species and bird interest.
- River Avon System SSSI – designated for its chalk stream, marsh and wet woodland, meadows and the associated invertebrate communities.
- River Till SSSI – designated for similar interest to the River Avon System SSSI.

Other designated sites include the Parsonage Down and Wylye Down National Nature Reserves (NNR). Sites designated at the local level (e.g. County Wildlife Sites) have not been included in this IER for reasons of space. They will however be included in the baseline of the OEA and any significant effects upon them identified in the assessment.

Internationally Protected Species

Internationally protected species include great crested newts (*Triturus cristatus)* at various locations near Urchfont, Bulford, Figheldean and Ludgershall and along the Nine Mile River. Aspire Defence has advised that a 2013 survey identified one population of great crested newts within a pond in the north west corner of the Perham Down site. In addition there are records for dormice (*Muscardinus avellanarius),* otters (*Lutra lutra)* and several bat species.

Nationally Protected Species

Nationally protected species include barn owl (*Tyto alba)*, slow worm (*Anguis fragilis)*, grass snake (*Natrix natrix)*, water vole (*Arvicola amphibious)*, and badger (*Meles meles)* have been recorded.

Red List Bird Species

Many red list bird species have been identified on the Plain, including grey partridge (*Perdix perdix*), northern lapwing (*Vanellus vanellus*), skylark (*Alauda arvensis*), cuckoo (*Cuculus canorus*), lesser-spotted woodpecker (*Dendrocopos minor*); tree pipit (*Anthus trivialis*), yellow wagtail (*Motacilla flava*), fieldfare (*Turdus pilaris*), Songthrush (*Turdus philomelos*), redwing (*Turdus iliacus*), wood warbler (*Phylloscopus sibilatrix*), linnet (*Carduelis cannabina*), yellowhammer (*Emberiza citrinella*) and corn bunting (*Emberiza calandra*). The Plain also supports populations of numerous amber list bird species.

Other notable species

The Plain supports populations of numerous other notable species, including red hemp nettle (*Galeopsis angustifolia*), dark-green fritillary (*Argynnis aglaja*) and brown hare (*Lepus europaeus*).

6.2 Possible Ecology and Nature Conservation Effects

The following potentially significant effects were identified in the Scoping Report.

Construction

Construction effects relate primarily to the potential for loss of habitat and disturbance to species, owing to the construction of the proposed crossing of the Nine Mile River, new small-arms ranges and enhancements to the Complex Manoeuvre Environment.

- Works in proximity to watercourses: bank instability / compaction leading to disturbance of aquatic communities
- Works in proximity to watercourses: Increased sediment loading
- Loss of conservation value
- Risk of damage from spills or leaks of fuel, oil or chemicals
- Direct land take leading to loss of riparian and aquatic habitat
- Felling of trees and trimming or lopping of tree branches
- Changes in terrestrial community
- Changes in species composition and displacement of sensitive species from general site preparation and construction activity
- Habitat removal, fragmentation or severance
- Disturbance to or loss of species (including rare and sensitive species)
- Direct land take resulting in disturbance or destruction of terrestrial habitat and loss or disturbance of soil systems

In addition to these possible construction effects, changes in surface water flow regime during construction of the crossing at Nine Mile River may also be an issue. Terrestrial habitat effects should consider qualitative habitat change or degradation. Effects on species should take account of the abundance as well as the composition of sensitive species.

Operation

Operational effects were also identified and these are a combination of potential effects from changes in military training or increased recreational pressure. These included:

- Direct and indirect effects from oil, fuel, heavy metals or other substances entering the aquatic environment
- Washing of track aggregate into watercourse may cause increased sediment loads which may cause damage to aquatic life
- Risk of damage from spills or leaks of fuel, oil and chemicals.
- Off Road Vehicle (ORV) water splashes or stream passes may result in water contamination and direct disturbance to aquatic life

- Possible changes to aquatic habitats
- Loss of sensitive species
- Alteration, loss or fragmentation of terrestrial habitats and corridors
- Disturbance to, or loss of, species (including rare and sensitive species)
- Loss of vegetation cover from soil compaction and direct destruction or disturbance
- Loss of feeding and breeding habitats
- Change in terrestrial community
- Loss of conservation value

Other potential operational effects identified in the Scoping Report were possible as a result of the increased demand for water by additional military personnel and their dependents. The possible effects included ecological impacts resulting from:

- Lowering of the water table
- Reduction in baseflow
- Changes in water quality

In addition to these potential operational effects, the possible loss of habitat should include consideration of extent and composition of habitat change which may arise from training.

Services provided by ecosystems (such as pollination of crops by insects) are not considered likely to be significantly affected by the proposed ABP developments or training activities, so it is not proposed to provide an assessment of these impacts. However this will be kept under review.

In response to the consultation on the Scoping Report, Natural England highlighted a number of specific potential impacts that need to be considered. These are not reproduced here, as it is considered that they are covered by the more generic bullet points above. However they are set out in Appendix A (Ref 53) and it is agreed that they will be addressed in the OEA.

6.3 Assessment Methodology

An ecological resource or receptor is defined as a site / area / species of nature conservation value. Each may have more than one feature of value that it supports (for example different habitats or populations and/or assemblages of species). Individual ecological resources or receptors and the features that comprise them will be evaluated according to generally accepted criteria, including their designation (if any) with reference to the Institute of Ecology and Environmental Management guidelines (IEEM, 2006) to define their value, importance or sensitivity.

Table 6.1: Proposed Resource / Receptor Evaluation Criteria

Importance of Receptor	Example Criteria
Very High (International)	An internationally designated site (SPA, SAC and / or Ramsar site) or proposed / candidate site (pSPA or cSAC). A large area of a habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of the larger whole. Large population of an internationally important species or site supporting such a species (or supplying a critical element of their habitat requirement) i.e.: - UK Red data book species that is listed as occurring in 15 or fewer 10 km squares in the UK, that is of unfavourable conservation concern in Europe or of uncertain conservation status or global conservation concern in the UK Biodiversity Action Plan (BAP); or - Species listed in Annex IV of the Habitats Directive
High (National)	A nationally designated site (SSSI, NNR) or a discrete area which meets the selection criteria for national designation (e.g. SSSI selection criteria). An area formally selected by Defra as a Nature Improvement Area (NIA). An area of a priority habitat identified in the Natural Environment and Rural Communities (NERC) Act habitat and species lists which constitutes a significant proportion of the UK resource of that habitat. Populations of a nationally important species or site supporting such a species (or supplying a critical element of their habitat requirement) which constitutes more than 1% of the national population of that species i.e.: - Species listed on Schedules 5 and 8 of the Wildlife & Countryside Act (1981); - Other UK Red Data Book species; - Other species listed as occurring in 15 or fewer 10 km squares in the UK.
Medium (County)	Some designated sites (Local Nature Reserves, County Wildlife Sites). An area of habitat identified in the County BAP which constitutes a significant proportion of the County's resource of that habitat. Large populations of the following species: - Species listed in a County "red data book" or BAP on account of its rarity/localisation in a County context; or, - Sites supporting 1% or more of a County population.

Importance of Receptor	Example Criteria
Low (District / Borough)	Viable areas of habitat identified in a County BAP or the UK BAP but which are not large enough to meet the criteria for county value. Sites/features which appreciably enrich the local habitat resource. Small but sustainable populations of a legally protected species or one that is notable for some other reason e.g. that it is featured in a county BAP or the NERC species lists.
Very Low	Very low or negligible ecological value

Once impacts have been determined, the magnitude of each impact must be assessed. The proposed criteria to determine the magnitude of impact are identified below. These criteria are informed by IEEM guidelines and have been developed by experienced URS Ecologists and EIA staff.

Table 6.2: Proposed Impact Evaluation Criteria

Magnitude of Impact	Example Criteria
Very High	Landtake of a habitat or feature, if it occurs, is greater than 10 hectares. Where impacts are indirect, severe disruption of ecosystem functioning occurs, with substantial loss of species and loss of diversity. Changes may be long-lasting or permanent, particularly if loss or major alteration of wildlife habitat occurs. Recovery, if possible, is likely to take more than five years.
High	Landtake of a habitat or feature, if it occurs, may be greater than 1 hectare. Where impacts are indirect, severe disruption of ecosystem functioning occurs, with substantial loss of species and loss of diversity. Changes may be long-lasting or permanent, particularly if loss or major alteration of wildlife habitat occurs. Recovery, if possible, is likely to take more than three years.
Medium	Landtake of a habitat or feature, if it occurs is less than 0.1 hectares. Where impacts are indirect, moderate qualitative change occurs. The abundance of many of the more sensitive species may be somewhat reduced. Changes in habitat may be longer lasting. Impact is reversible, or nearly so, although recovery of impacts other than landtake may take up to three years following cessation of impact.
Low	Landtake of a habitat or feature, if it occurs, is less than 0.01 hectares. Where indirect impacts occur, some qualitative changes in species abundance may occur, including some reduction in abundance of the more sensitive species, but the impact is reversible. Full recovery is likely in the short term, probably within a year, following the cessation of impact.

Magnitude of Impact	Example Criteria
Very Low	With ecological resources / receptors it is often not possible to state categorically that there will be no impact, but this category is used when the chance of any impact is very low and if it occurs it is well below the level of detection.

Taking the importance and magnitude into account, these criteria can be combined to produce an overall evaluation of whether an effect is significant. Where significant effects are identified, mitigation will be necessary.

Mitigation involves first seeking to avoid the impact and, if this is not possible, providing mitigation (which could include improving the quality of other habitat areas within the SAC / SPA) to reduce the magnitude of the impact to levels that are not significant. If mitigation is not possible then compensation options will be explored. For European sites, compensation (i.e. providing totally new habitat outside the SAC / SPA boundary to compensate for habitat losses within the European site) is only legally permissible under the Habitats Directive if it can first be confirmed that there are a) no alternatives and b) imperative reasons of over-riding public interest as to why the development should nonetheless proceed.

Baseline Studies

It is thought that the following information will be required to facilitate the assessment:

- Botanical survey for the relevant management units/compartments of Salisbury Plain and any watercourses to be affected to National Vegetation Classification survey level, to include an assessment of disturbance and the distribution of particularly rare botanical species such as tuberous thistle.
- Distribution of dormice, reptiles and breeding birds within the relevant management units/compartments and for surrounding management units/compartments.
- Presence / absence of great crested newt in ponds within 500m of areas to be affected by construction works.
- Presence of key uncommon invertebrates within the relevant management units/compartments, particularly rarities like fairy shrimp and marsh fritillary.
- Bat activity data (and roost potential data where any trees or buildings are to be affected).
- Water vole and otter data for any watercourses to be crossed.
- Badger sett locations within the relevant management units/compartments.

Much of this information will already be available from DIO or Natural England but it is proposed to supplement the data with surveys as necessary to meet best practice where data gaps exist.

Preliminary ecological surveys, (extended Phase 1 ecological surveys covering the entire site) have been completed at Upavon, Tidworth, Bulford, Perham Down and Larkhill garrisons.

Preliminary surveys have also been completed at Copehill Down, Imber and along the Berril Valley, at the sites of the proposed Nine Mile River crossing, the proposed IBSR and the proposed ETR. Preliminary surveys are now underway at all preferred SFA sites and those potential SFA sites that are not obviously less desirable on environmental grounds.

The results of these surveys will be fed into the Masterplan consultation. Further ecological surveys may be recommended as a result of these preliminary surveys, once the data have been analysed.

7. ARCHAEOLOGY AND CULTURAL HERITAGE

7.1 Baseline Environmental Conditions

Overview

Salisbury Plain has a long history of human settlement and consequently has a rich archaeology. Much of this has been preserved because the Plain has not undergone the urbanisation or agricultural intensification that has taken place elsewhere in the English countryside. Much of the Plain contains designated heritage assets in recognition of its rich archaeological landscape and there are now 306 scheduled monuments on SPTA.

As discussed below, some nineteen Neolithic long barrows are known to exist within SPTA and extensive Bronze Age barrow cemeteries are to be found on the slopes of the downs alongside 'Celtic' fields. Linear boundaries from a later period divide up the landscape and eleven Romano-British villages have been recorded in detail (Fulford *et al*, 2006). The importance of these sites is enhanced because it is possible to trace the relatively undisturbed ancient landscape between the villages (McOmish *et al*, 2002).

In commenting on the Scoping Report, Wiltshire Council has rightly highlighted the exceptional quality of the built heritage in and around Salisbury Plain. This has often resulted directly from the military use of SPTA and includes, for example, several airfields dating to the earliest phase of aviation in the early Twentieth Century. This modern heritage, the upper-most component of the cultural heritage palimpsest, is also of importance and is worthy of note.

Neolithic (4000-2,200 BC)

Around 50 Neolithic sites are known to exist on the Plain, many within SPTA itself and others associated with the Stonehenge portion of the Stonehenge & Avebury World Heritage Site (WHS). The sites include barrows / mortuary enclosures, henges, a causewayed enclosure at Robin Hood's Ball, the Greater Cursus at Stonehenge and two sets of pit alignments at Normanton Down.

Bronze Age (2,200 BC – 700 BC)

Nearly 700 barrows and ring ditches, forming the largest group of Bronze Age monuments, have been recorded on Salisbury Plain (McOmish *et al,* 33). These are primarily around the WHS and eastern part of SPTA with fewer in the central and western portions. Of the remaining sites, five are enclosures (with a handful of additional possible enclosures) and twenty-five are linear ditches, considered to mark boundaries. The boundary features are distributed fairly evenly across SPTA and WHS. Bronze Age dwellings have been identified at Dunch Hill (McOmish, *ibid*, 2002). So-called 'celtic fields' are also still visible on the Plain – spanning the Bronze and Iron Ages and reflecting the agricultural regimes of the later prehistoric period of the area.

Iron Age (700 BC – 43AD)

Perhaps the most prominent monuments of the Iron Age are hillforts. Eight substantial hillforts / large enclosures still survive on the Plain with many other smaller enclosures, usually sited on higher ground and on occasion associated with extensive settlement (Ellis and Powell, 2008). Other features, such as hut circles and fields, may date to the Iron Age. Chisenbury Midden, a midden site with chalk floors indicating a settlement, dates to the Iron Age as does a circular enclosure found recently during works at Upavon. Fulford *et al* (2006) is the main secondary source for this period.

Romano-British (43 AD – 410 AD)

Some of the most intact Romano-British rural settlements in southern Britain are present on SPTA. Settlements survive as earthworks at Knook Down West, Knook Down East, Cheverell Down, Orcheston Down, Upavon Down, Compton Down, Coombe Down, Wadman's Coppice, Chisenbury Warren, Church Pits, Charlton Down, Chapperton Down and are all important designated sites (McOmish *op cit*, 88-89). Within these settlements, hut platforms, possible 'allotments', dams, field terraces, corn-drying ovens, and roads are all found. A couple of villas are also present: at Enford and at Beaches Barn – the latter examined in part by Time Team.

Upavon Roman Village, discovered about five years ago during works on a proposed runway, is a nationally important site. There is a Roman Temple at Casterley. Roman fields and their boundaries (lynchets) are very well preserved on SPTA (Fulford *et al*, 2006).

The majority of Roman sites on SPTA are 3rd-4th Century AD in date, although some such as Chisenbury Warren span the entire Romano-British period and beyond.

Anglo-Saxon (410 AD – 1066 AD)

Little by way of settlement evidence from the Anglo-Saxon period has been located on the SPTA although one sunken-feature building was excavated on Coombe Down (McOmish *et al, op cit*, 209) and various sites have yielded pottery from this period. Twelve inhumation burials dating to Anglo-Saxon period with a variety of grave goods, some indicating high social status, were found in an Anglo-Saxon cemetery at Barrow Clump in 2003-4. Following excavation work in 2012 and 2013 this figure has now risen to 60 inhumations, with grave goods suggesting a 6th Century date.

Medieval (1066 AD – 1540 AD)

With one exception, all medieval sites are dated to the late medieval. Of these 113 sites in Crutchley (2000), thirteen are considered to be deserted villages, such as Knighton Down and fourteen shrunken villages at places such as Orcheston and Middleton. Eight moated late medieval sites are all located in the Vale of Pewsey. Some thirty sites are assumed to have an agricultural function. A further 337 sites are of 'unknown medieval provenance' but could in fact as easily be ascribed to other historic periods (Crutchley, 2000). Ludgershall Castle and Imber Village also have important medieval components. Traces of ridge and furrow ploughing are present at Knook Down and Thornham Down (McOmish e*t al*, 114).

Modern (post 1540 AD)

The modern period saw a reduction in use of SPTA until the late 19th century. Agriculture continued on the lower slopes of the Plain, controlled by the settlements located in the river valleys, however settlement activity on the Plain itself was much reduced. A major shift in land use occurred in the late 19th century when in 1897, large tracts of land were purchased by the War Office for military training purposes.

Whilst this acquisition has led to the extraordinary preservation of heritage assets that is now seen on the Plain, the arrival and occupation for more than a century of the military has also left a unique legacy of military heritage. This heritage comprises not only the upstanding remains of early barrack blocks such as the 1905 Jellalabad Barracks at Tidworth and the hangars at Larkhill, but also the remains of practice trenches for example to the north of Perham Down, at the Bustard, and along Beacon Hill where a number of these remain as earthworks, former camps and airfields which are no longer extant.

The significance of some of these assets, in particular the remaining standing buildings from the WWI, WWII and Cold War era is only beginning to be realised and in this centenary year of the start of the 1914-18 conflict, the public and historic interest in these features will increase. English Heritage has undertaken a thematic aviation study which has led to listing of buildings at Larkhill, Netheravon and Upavon. It is very likely that the commemoration in 2014 of the outbreak of the First World War may lead to further listings.

The 443 modern sites referred to by Crutchley (2000) are primarily of military origin. These include trench systems and gun pits, camps, airfields and radar installations. These sites are concentrated almost entirely within SPTA itself. In addition it is possible that there are sites covered by the Preservation of Military Remains Act (PMRA) 1986. James (1987) is the key secondary source for the military archaeology of Salisbury Plain.

Stonehenge & Avebury World Heritage Site

The monuments at Stonehenge and Avebury, along with many associated monuments, were designated a WHS in 1986. The WHS currently covers around 2,600 hectares of chalk downland and mixed arable fields, extending from Larkhill to Lake in the Woodford Valley and from Amesbury to Longbarrow Crossroads. Its inscription results from its Outstanding Universal Value as:

- The monuments demonstrate outstanding creative and technological achievements in prehistoric times;
- They illustrate the evolution of monument construction and the shaping of the landscape over more than 2000 years, from the early Neolithic to the Bronze Age; and
- They provide an insight into the funerary and ceremonial practices in Britain in the Neolithic and Bronze Age.

In total there are 415 Scheduled Monuments within the WHS as a whole. Those within the Stonehenge portion of the WHS include:

- The Greater Cursus;
- The Lesser Cursus;
- The Avenue;
- Woodhenge;
- Durrington Walls;
- Coneybury Henge;
- Vespasian's Camp;
- North Kite Enclosure; and
- Various barrow sites.

English Heritage currently propose to extend the boundary of the WHS north of the Packway to incorporate Robin Hood's Ball and other monuments on Alton Down, and west along Winterbourne Stoke Down and Fore Down. Most of these sites are already designated and

within SSSI and alterations could be indirectly affected by changes to their setting and hence their significance.

Listed and Non-Designated Buildings

Salisbury Plain benefits from an exceptional built heritage which space does not permit to be fully enumerated here. Several of the garrisons host listed buildings, including (but not limited to) the various blocks of the Jellalabad Barracks at Tidworth and the Hangars at Larkhill. On SPTA itself, Robbers Stone records the death of Benjamin Colclough, a highwayman, during his attempted escape from the scene of a crime at Imber. The church at Imber is a Grade 1 listed building and there are several listed farmsteads within SPTA.

The garrisons also contain buildings that although are not statutorily listed, are still of heritage significance and contribute to the understanding of the development of the Army and military technology on Salisbury Plain. These buildings will be identified and effects upon them considered as part of these assessments.

7.2 Possible Archaeology and Cultural Heritage Effects

Effects on the setting of heritage assets are considered to be the main potential adverse effect that could result from the ABP proposals. Although the detailed designs have not been issued, the setting of significant heritage assets will be identified at this stage in order to provide input into detailed design work. Sites inappropriate for certain types of development, for example tall structures, or structures which could interrupt views between heritage assets will be identified.

The presence of unknown cultural heritage assets (i.e. undiscovered buried archaeology) is a key concern. Previous projects have revealed important remains during the assessment process and the risk of encountering such remains during construction work is relatively high.

The following potentially significant effects were identified in the Scoping Report.

Construction

- Borehole drilling damage to buried structures
- Damage to known or unknown features of archaeological or cultural importance
- Topsoil stripping damage to buried structures
- Excavation damage to buried structures

Operation

- Blasting damage to architectural features (note that this is taken from the construction impacts table in the Appendix but internal consultation has identified it as a possible operational impact as a result of training activities)

7.3 Assessment Methodology

Paragraph 132 of the National Planning Policy Framework (NPPF) (Department for Communities and Local Government, 2012) recognises that heritage assets with the highest level of 'significance' (or importance) comprise Scheduled Monuments, registered battlefields, Grade I and II* listed buildings and registered parks and gardens and World Heritage Sites.

At paragraph 139 the NPPF also recognises that non-designated heritage assets may be of equivalent 'significance' to designated assets, and in such cases are to be considered subject to the policies for designated assets. The proposed criteria for assigning importance are set out below.

The significance of an asset is expressed through of a series of values which are defined in NPPF Annex 2: Glossary, as Architectural, Artistic, Archaeological and Historic. The values of the heritage assets are described in the report. Using professional judgement, the heritage assets will be ascribed an importance rating commensurate with their heritage significance.

Table 7.1: Proposed Resource / Receptor Evaluation Criteria

Importance (or 'Significance') of Receptor	Example Criteria
Very High	Remains of inscribed international importance, such as World Heritage Sites. Grade I and Grade II* Listed Buildings. Grade I and Grade II* Registered Parks and Gardens. Scheduled Monuments. Registered battlefields.
High	Non-designated archaeological assets of schedulable quality and importance. Non-designated buildings, monuments, sites or landscapes that can be shown to have particularly important qualities in their fabric or historical association. Grade II listed Buildings. Conservation Areas. Grade II Registered Parks.
Medium	Assets of high archaeological resource importance and designated as being of archaeological sensitivity as identified through consultation. Non-designated buildings, monuments, sites or landscapes that can be shown to have important qualities in their fabric or historical association. Historic townscapes or groups of buildings with historic integrity in that the assets that constitute their make-up are clearly legible.
Low	Non-designated buildings, monuments, sites or landscapes of local importance and of modest quality. Locally important historic or archaeological assets, assets with a local importance for education or cultural appreciation and of medium

Importance (or 'Significance') of Receptor	Example Criteria
	archaeological resource rating. Assets that are so badly damaged that too little remains to justify inclusion into a higher grade. Parks and gardens of local interest.
Very Low	Assets identified as being of no historic, evidential, aesthetic or communal interest. Assets whose values are compromised by poor preservation or survival or of contextual associations to justify inclusion into a higher grade.

The table below sets out the proposed general framework for identifying the degree of impact that might occur as a result of the Masterplan proposals. These criteria would be used to define the magnitude of impact and, taken together with the importance ('significance') of the asset, would be used to determine whether significant effects are likely.

Table 7.2: Proposed Impact Evaluation Criteria

Magnitude of Impact	Example Criteria
Very High	Change such that the importance ('significance') of the asset is severely altered or vitiated. Comprehensive change to setting affecting importance ('significance'), resulting in severe changes in our ability to understand and appreciate the resource and its historical context and setting.
High	Change such that the importance ('significance') of the asset is affected. Changes such that the setting of the asset is noticeably different, affecting significance resulting in moderate changes in our ability to understand and appreciate the resource and its historical context and setting.
Medium	Change such that the importance ('significance') of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the resource and its historical context and setting.
Low	Changes to the asset that hardly affect importance ('significance'). Changes to the setting of an asset that have little effect on significance and no real change in our ability to understand and appreciate the resource and

Magnitude of Impact	Example Criteria
	its historical context and setting.
Very Low	The Proposed Development does not affect the importance ('significance') of the asset. Changes to the setting do not affect the significance of the asset or our appreciation of it.

It is considered that setting impacts are more likely than direct impacts upon heritage receptors. The proposed methodology would be consistent with the English Heritage Guidance on the Setting of Heritage Assets (EH, 2012), which sets out a five step process:

- Step 1: identify which known heritage assets and their settings are affected;
- Step 2: assess whether, how and to what degree these settings make a contribution to the 'significance' of the heritage asset(s);
- Step 3: assess the effects of the proposed development, whether beneficial or harmful, on that 'significance';
- Step 4: explore the way maximising enhancement and avoiding or minimising harm;
- Step 5: make and document the decision and monitor outcomes.

Baseline Studies

Heritage desk studies have already been undertaken for Tidworth, Bulford, Perham Down and Larkhill. A similar baseline study is currently being undertaken for Upavon. The desk studies identify the heritage resource in and around these locations for the purposes of developing proposals 'within the wire'. Further heritage desk studies, supplemented by site visits, are also currently being prepared for outside the wire locations at the garrison sites where SFA is proposed and at locations within SPTA where new training infrastructure is likely to be located.

The heritage desk studies define the heritage resource. They identify the designated and non-designated assets which have the potential to be impacted by the proposed developments. In addition, the reports identify heritage assets not previously identified, such as military structures and archaeological features. A search area of 1km from the boundary of the site is used for designated assets, with a wider search area of 5km used for the assets of highest significance to identify any major constraints. A smaller search area of 200m is used for the non-designated assets.

The baseline reports describe the setting of the identified heritage assets and the contribution the setting makes to the significance of the asset. The significance of the assets is reported to allow a judgement to be made on how the proposed development may impact upon it.

In addition, as far as the development information provided allows, the impact of the proposed developments upon the identified heritage assets will be reported. Major constraints to development will be identified, along with recommendations, where appropriate for the proposed developments. The baseline information will then be used to inform the OEA.

8. WATER RESOURCES

8.1 Baseline Environmental Conditions

Salisbury Plain forms the upper reaches of the River Avon catchment and lies within the Hampshire Avon Water Framework Directive (WFD) Management Area. The Avon drains from the chalk downland of Salisbury Plain; to the north and west the catchment is delimited by a ridge of high ground (EA, 2012). The River Avon is fed by the River Bourne to the east of the Plain and the River Wylye to the south.

Salisbury Plain is set within the upper catchment of the River Avon where surface water bodies (and the aquatic ecology they support) are more vulnerable to the impacts of groundwater abstraction. Therefore the surface water bodies are key receptors, along with designated ecological sites and protected rights (other licensed abstractors).

Geologically, the Chalk provides spring and base flows to maintain a relatively stable discharge regime throughout the year. The Upper Greensand is also important, forming the lower relief headwater vales of the Upper Avon, Wylye and Bourne (EA, 2012). During the DIO Environmental Science Group's visit to complete a baseline study for the impact of munitions a number of deep open historic water well features were recorded.

At a regional level the Environment Agency identifies the Chalk as a principal aquifer and therefore it is a sensitive resource of high value, supporting river base flows and public water supply abstractions. The Upper Hampshire Avon groundwater body (GB40801G806900) has a poor WFD quantitative status owing to the impact of abstraction on the hydrological regime of WFD surface water bodies such as the Upper River Avon, Wylye and Bourne. It follows that the Environment Agency's licensing strategy for the Hampshire Avon Management Area (December 2012) is to restrict the licensing of increased groundwater abstraction.

In the Salisbury Plain area abstraction is primarily from the Chalk for the public water supply (EA, 2012), including a number of existing MOD groundwater abstractions from the Chalk aquifer. These abstractions are currently exempt from the Environment Agency's abstraction licencing system.

The water resource in the catchment is under some pressure and additional abstraction above the current licenced volume would be possible less than 30% of the time in the Warminster area. Elsewhere on the Plain the situation is not quite so critical: additional abstractions would be possible around the River Bourne at least 30% of the time and around 50% of the time elsewhere on the Plain (EA, 2012).

8.2 Possible Water Resources Effects

The following potentially significant effects were identified in the Scoping Report.

Construction

Some potential construction effects identified were thought to arise from construction of the proposed Nine Mile River crossing. These might include:

- Increased sedimentation in watercourses
- Use of vehicles and machinery
- Pollution from suspended material

Other effects were thought possible owing to construction works interrupting the flow of groundwater either temporarily or permanently. Related potential effects included measures taken to protect groundwater during construction. Among these possible effects were:

- Reduction or cessation of baseflow to streams
- Lowering of the water table causing water to flow from surface water to groundwater
- Discharge of test water
- Changes in the groundwater flow regime
- Changes in dilution of surface water from reductions in baseflow
- Disturbance of sediments

Operation

Potential operational effects identified in the Scoping Report were primarily a possible result of the increased demand for water by additional military personnel and their dependents. The possible effects included:

- Reduction or cessation of baseflow to streams
- Lowering of the water table causing water to flow from surface water to groundwater
- Changes in the groundwater flow regime
- Altered flow characteristics
- Reduction in the water table
- Derogation of other abstractors
- Alteration of groundwater flow regimes
- Oxidation of minerals within the aquifer

Further possible effects from changes in military training were identified. These included:

- Increase in surface runoff from soil compaction
- Increased erosion may lead to increased sedimentation in local watercourses
- Washing of track aggregate into watercourse may cause increased sediment loads and changes in the flow regime
- Increased flood risk
- Increased sediment loading of watercourses
- Increased risk of contamination from effluent
- ORV water splashes of stream passes may result in water contamination though fuel and oil seepages

- Pollution from spills or leaks of fuel and oil
- High suspended solids
- Polycyclic Aromatic Hydrocarbons (PAHs) and oils
- Scour around bridge structure increasing sediment load

8.3 Assessment Methodology

Baseline Condition Assessment

As part of the baseline condition assessment, the OEA will:

- Characterise and summarise the current WFD status of surface water bodies that derive base flows from the Chalk aquifer in the Salisbury Plain area.
- Identify the designated ecological sites that may be impacted by MOD groundwater abstraction (either directly through reduced groundwater levels or in-directly through reduced surface water flows). These include the Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSI) within the upper Hampshire Avon catchment.
- Identify protected and non-protected rights (licensed and non-licensed abstractions) within a set radius from the existing MOD abstraction points.
- Review and summarise data / reports on the existing MOD abstractions, including borehole logs; pumping test data and reports; long term abstraction time series data; long term groundwater level time series data; water features survey and environmental monitoring reports.
- Identify the impact of existing MOD abstractions on receptors through the use of modelling techniques. There is a regional groundwater model for the upper catchment of the River Avon, the development of which was co-funded by the Environment Agency and Wessex Water. The use of this model is being explored, although more straightforward techniques could involve the use of the Theis equation and the Environment Agency's Impact of Groundwater Abstraction on River Flows (IGARF) model. The aim would be to identify (i) the impacts of existing MOD abstractions relative to other non MOD groundwater and surface water abstractions and (ii) the degree to which they influence the overall water balance within the catchment.

Assessing the Impact of Increased Abstraction

It is anticipated that MOD demand for groundwater abstraction will increase in future. An outline methodology is required to understand the potential environmental impacts of increased groundwater abstraction. This methodology and the model to implement it are currently the subjects of discussions between DIO, the Environment Agency, Natural England and others. The methodology will include consideration of groundwater quality and nutrient loadings, as well as quantity.

The impact assessment will build on the assessment of baseline conditions. In particular the same modelling tools will be utilised, but with the levels of groundwater abstraction increased. The impacts as defined by the modelling results can then be compared against the baseline scenario.

Where the impact of the proposed increase in abstraction is deemed to be significant, mitigation measures would be identified. For example, mitigation could involve the measures to control water usage and leakage, the installation of sustainable drainage systems, or the development of increased storage to cope with peaks in demand.

Key issues to be considered will include the effects on the flow of the River Avon and the effects on ponds that form part of the SAC and SSSI. The in-combination effect with other developments will be essential to support the HRA.

9. LANDSCAPE, TOWNSCAPE AND VISUAL

9.1 Baseline Environmental Conditions

SPTA sits within the Salisbury Plain and West Wiltshire Downs National Character Area (NCA) as identified in the National Character Area map produced by Natural England. Wilshire County Council (2005) commissioned the Wiltshire Landscape Character Assessment which defines the County's landscape character in greater detail. This describes SPTA as consisting primarily of High Chalk Downland, with key characteristics as follows:

- Very large scale and open, exposed landscape.
- Rolling plateau land form with panoramic views over the surrounding lowlands creating a sense of elevation.
- Large regular arable fields are bounded mainly by ditches or fences with occasional hedgerows.
- Steep and incised slopes down to the surrounding river valleys.
- Extensive areas of chalk grassland and scrub occur on the northern and central parts of the area under military ownership with arable farmland around the periphery.
- Copses and woodland belts, at various stages of growth occur throughout the area with sinuous older plantations contrasting with more recent tree planting in geometrical blocks.
- Proliferation of military signage and posts along the numerous tracks that cross the area.
- Rich ecology particularly the numerous extensive and intact areas of chalk grassland.
- Archaeological remains and sites of historic importance, particularly the Neolithic monuments of Stonehenge and Old Sarum.
- Settlement limited to a scattering of small villages and military installations including camps and abandoned or specially constructed villages used by the Army for training operations.

The Lower Avon is described as a Chalk River Valley dividing the High Chalk Downland into east and west character areas. To the south, another Chalk River Valley (the Wylye) forms a boundary feature. Their key characteristics are:

- Strongly enclosed valleys with an intimate scale contrasting with the surrounding open upland landscape.
- Level, often narrow valley floors with relatively steep sides.
- Pastoral land use along the valley floor with small scale fields contrasting with arable farmland on the valley sides with medium to large geometric fields.
- Hedgerows and hedgerow trees add to the lush and enclosed feel of the valleys.
- Riparian woodlands, lines of poplar along ditches and willow pollards.

- Diverse mosaic of land cover and habitats includes meadows, fen and wet woodland on valley floor.
- Clear fast flowing chalk rivers and streams a key habitat.
- Valleys contain a concentration of settlement in contrast to the adjacent unsettled downs.
- Many long established villages, sited along the spring line and built of a rich variety of vernacular materials.
- Isolated Neolithic long barrow burial monuments, Bronze Age round barrows and water meadow channels on the valley floor contribute to the visible archaeology.
- Valley used as transport corridors with major roads and railway lines along valley sides.
- Rural landscape sometimes interrupted by the large volume of traffic.

In general, the County-wide Landscape Character Assessment concludes that the condition of the landscape is good, the character is strong and the proposed strategy is to conserve the landscape of SPTA (Wiltshire County Council, 2005).

9.2 Possible Landscape, Townscape and Visual Effects

It is important to understand that precise levels of visual impact cannot be assigned at the Masterplan level of detail. However, visual amenity will be assessed based on the information available at this stage, in order to inform the evolution of the Masterplan and to enable an iterative design process. Where such information is not available, assumptions will be made to facilitate the appraisal. These will be stated in the OEA Report.

Recommendations for further work will be made where it is considered that formal landscape and visual impact assessment should form a part of subsequent planning applications. The following potentially significant effects were identified in the Scoping Report.

Construction

The identified potential construction effects relate primarily to temporary landscape effects. These included:

- Temporary reduction in landscape quality
- Change in landscape character

In addition, Aspire Defence noted that decommission and demolition activities were incorrectly scoped out of the appraisal and are anticipated in some locations. Potential visual effects from these activities will be considered.

Operation

During operation, certain potential effects arising during construction would remain thereafter. These include new buildings or tracks, for example, so the identified effects included:

- Change in character of landscape

- Change in character of landscape through linear feature
- Visual impact of structures

9.3 Assessment Methodology

The methodology proposed for the appraisal draws upon the following established best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (LI & IEMA, 2013);
- Landscape Character Assessment: Guidance for England and Scotland (CA & SNH, 2002); and
- Landscape Institute Advice Note 01/11: Photography and photomontage in landscape and visual impact assessment (LI, 2011).

The assessment will be conducted in the context of the 'military' landscape which has existed since the 1890s and is now part of the vernacular.

Landscape Assessment Methodology

The assessment of landscape impacts will be structured around the identification of Landscape Character Areas (LCAs). Within the study area there will be areas where development would take place resulting in direct effects on a given LCA or where there is a degree of intervisibility between development and the surrounding landscape causing indirect effects. As SPTA is very extensive, there will be many areas where no change will be perceptible.

Each LCA will be assigned an importance or sensitivity based on the importance attached to the existing landscape and its susceptibility to the type of change or development proposed. Sensitivity to change is classified as either:

- Very High: highly valued landscape, designated and recognised as important by the local community comprised of distinct components and characteristics, sensitive to very small changes;
- High: valued landscape whether through landscape designations or by the local community of a landscape of relatively distinctive components and characteristics, sensitive to small changes;
- Medium: landscape of some value of relatively common components and characteristics, reasonably tolerant of changes;
- Low: landscape of relatively inconsequential components and characteristics, the nature of which is potentially tolerant of substantial change; or
- Very Low: landscape of inconsequential components and characteristics, the nature of which is tolerant of substantial change.

Magnitude of impact will be determined through a combination of the size / scale of the proposed development, the geographical extent of the area influenced, type of development and the level of integration of new features with existing elements. Magnitude of impact will be classified as follows:

- Very High: large change over an extensive area influencing several LCAs including those LCAs remote from the LCA within which the proposed development lies;
- High: ranging from a limited change in landscape characteristics over an extensive area influencing several LCAs immediately adjacent to the LCA within which the proposed development lies, to an intensive change over a more limited area;
- Medium: ranging from a limited change in landscape characteristics at the scale of the LCA within which the proposed development lies, to a moderate change in a localised area;
- Low: a limited change in landscape characteristics at the level of the immediate setting of the application site; and
- Very Low: virtually imperceptible change in any component outside the application site itself, at the site level.

Visual Assessment Methodology

A Zone of Theoretical Visibility (ZTV) will be developed to identify areas where there would theoretically be views of any proposed development. Using the criteria below, a selection of representative will be identified within the Zone of Visual Influence (ZVI) which would form the basis of the visual assessment:

- Receptor function / activity;
- Distance from the application site;
- Topography and elevation;
- Degree of openness and period of exposure;
- Designation of the viewing place; and
- Distribution of receptors.

Representative viewpoints will cover a range of receptor groups and locations from close, middle and long distance.

Visual receptors will be assigned a category of sensitivity based on a combination of their susceptibility to change in views and also the value attached to particular views. Susceptibility is mainly a function of the occupation or activity of people experiencing the views and the extent to which their attention or interest is focused on the views. The sensitivity of receptors will be classified as follows:

- Very High: activity that is focused on appreciation of the view (e.g. recognised viewpoint);
- High: activity resulting a high interest or appreciation of the view (e.g. residents and people engaged in outdoor recreation whose attention is focussed on the landscape) and/or a high value of existing area (e.g. an Area of Outstanding Natural Beauty, unspoiled countryside or Conservation Area);
- Medium: activity resulting in a medium interest or appreciation of the view (e.g. people engaged in outdoor recreation that does not involve appreciation of the landscape)

and/or a medium value of existing view (e.g. suburban residential areas or intensively farmed countryside);

- Low: activity resulting in a low interest or appreciation of the view (e.g. people at work or motorists travelling through the area) and/or low value of existing view (e.g. industrial areas or derelict land); and
- Very Low: activity resulting in no interest or appreciation of the view.

Magnitude of visual impact is based on a combination of degree of change to the view, including the extent of the area over which the changes would be visible, the period of exposure to the view and reversibility. Magnitude of impact will be classified as follows:

- Very High: very high degree of change to existing view (e.g. major loss of characteristic features) and/or very high degree of exposure to view (e.g. no alternative views)
- High: high degree of change to existing view (e.g. loss of characteristic features) and/or high degree of exposure to view (e.g. close or open views);
- Medium: medium degree of change to existing view (e.g. partial loss of characteristic features) and/or medium degree of exposure to view (e.g. middle-distance or partial views);
- Low: low degree of change to existing view (e.g. limited loss of characteristic features) and/or low degree of exposure to view (e.g. long-distance or glimpsed views); and
- Very Low: barely perceptible change to existing view and/or very brief exposure to view.

Baseline Studies

Desk studies are currently being undertaken to identify landscape character based on published studies at national, county, district and local (SPTA) levels. This material will form the basis of the character assessments of the garrison, SFA, training infrastructure sites. Topographical data is also being obtained in order to produce ZTVs of these sites using GIS, within a 5km zone around their boundaries. This local topography will also be described in the context of the topography of the wider SPTA and surrounding areas.

For the garrison sites, ZTVs will be produced of the existing buildings, based on either accurate LiDAR data or an assumed overall height (depending on availability of data); these will subsequently enable studies of proposed development within individual plots to be undertaken to determine whether or not it would extend the actual ZVI of the developed area.

For the SFA sites, ZTVs will be produced based on an assumed average proposed building height of 9m, to represent 2 or 2½ storey houses. Methodologies for producing ZTVs of the training infrastructure sites will be formulated as appropriate to the existing characteristics of each site and what is proposed.

Preliminary field assessments of character and views ‘within the wire’ have been undertaken for the Tidworth, Bulford, Perham Down, Larkhill and Upavon garrisons, concentrating on the plots identified in the Assessment Studies for each garrison, but also to take an overview of the character of the garrison as a whole. Field work is currently underway to establish the character and views of the SFA sites, including both close and distant views (up to 5km), and

this will subsequently be verified and refined with reference to the ZTVs, at which stage it will be possible to select a series of representative viewpoints for agreement with the Council.

Specially arranged site visits to the training infrastructure sites on SPTA have been undertaken. The combined assessment of landscape character and visual amenity resulting from the desk studies and field work will form the baseline against which development proposals can subsequently be assessed

10. SOILS

10.1 Baseline Environmental Conditions

A soil survey was undertaken as part of the SDR Environmental Appraisal (HLC, 2002). This study reported that:

"The eastern [pilot] area is typified by a dendritic pattern of soils "draining" the plateaux from north to south. The plateaux are dominated by thin silty soils overlying chalk at less than 40cm depth. Their topsoils are typically very dark (organic-rich) and can be moderately stony with small to large sized flints. Other parts are associated with similar shallow brown and grey soils where there has not been as much organic matter accumulation. In the valleys, the typical soils are moderately deep to deep medium silty soils, again containing flints. It is deepest below moderate to strongly sloping valley sides where it probably results from pre-historic soil erosion following woodland clearance. The valley sides are associated with moderately deep soils over chalk. The majority of the soils are calcareous to depth.

In the western pilot area the patterns are more linear, running from east to west and less related to dry valleys. Here shallow brown soils are found on the plateaux with deeper soils on the slopes. Stoniness is a feature of the soils with medium to large sized stones. The dry valleys are much narrower than in the east. There are a number of areas where there is a layer of stony clay overlying the chalk and this will slow down movement of water through the soil into the rock. However there is no evidence of soils with naturally impeded drainage."

At certain locations 'within the wire' there are known to be contamination issues and Phase 1 Land Quality Assessments already exist for much of the estate. Further Phase 1 land quality studies are being undertaken to highlight constraints at locations where development may take place.

10.2 Possible Soils Effects

The following potentially significant effects were identified in the Scoping Report.

Construction

- None identified

Although there is a potential risk from contaminated soils, it is assumed for the purposes of the OEA that where necessary ground investigations in support of planning applications and the use of best construction site practice will offset the risk.

Operation

The following potentially significant effects could arise from changes to military training activities being undertaken on SPTA:

- Soil compaction may result from the use of ORVs
- Compaction may influence the infiltration capacity of the soil
- Loss of vegetation cover may lead to increased surface erosion
- Development of rills and gulleys may channel runoff and increase erosion
- Development of tyre ruts

- Runoff containing contaminants that may be deposited on soils

10.3 Assessment Methodology

Contaminated Land

The methodology will examine the potential for land contamination (if any) and possible mitigation measures with reference to the Contaminated Land Exposure Assessment (CLEA) model which is intended to be used as the common basis for contamination assessments in the UK. The assessment will be in accordance with the MOD Policy on land contamination which is set out in JSP418, Volume 2 (MOD, 2010) and Practitioner Guide 07/12 'Land Contamination Management – Land Quality Assessment (LQA)' (MOD, 2012).

Soil Compaction, Erosion and Drainage

The approach to the assessment of soil compaction and erosion will be to undertake a desk study assessment using available data on soil structure on Salisbury Plain. This will consider the likely effect of changes in future military training upon soils and make any necessary recommendations for mitigation or further study. Effects on drainage will also be examined in conjunction with the assessment to be undertaken for water impacts.

Baseline Studies

As noted above, LQAs are already in existence for the majority of the DIO estate. It has been confirmed that Phase 1 LQAs exist for all sites affected by the Masterplan proposals, both within the wire and at the SFA sites. In most cases Phase 2 LQAs are also available and these reports have been obtained and are currently being reviewed.

New phase 1 LQAs 'within the wire' have been undertaken for Tidworth, Bulford, Perham Down and Larkhill. These identify the potential contamination risks at these locations and highlight where additional work may be required.

Walkover surveys will be undertaken for all garrison and SFA sites. Further surveys may be recommended where a requirement is identified. A Conceptual Site Model (CSM) will be prepared for each site, followed by risk assessments based on the findings of the CSMs. These will be reported as part of the OEA and the early findings will be made available to the Masterplan team to inform the selection of sites.

11. NOISE AND VIBRATION

11.1 Baseline Environmental Conditions

Crown defence activities are exempt from UK Statutory nuisance laws but these exemptions are used solely for activities directly related to national defence, such as operation of military equipment and training; MOD considers itself bound by noise legislation for day-to-day activities in offices and Garrisons.

Notwithstanding this, it is MOD policy is to avoid or minimise environmental noise on training areas, and has a policy to limit noise impacts to 130 dB at SPTA boundaries. Normally noise levels will be much lower than this and extremes of noise impact are only reached when the largest artillery pieces, AS90 155mm self-propelled guns, are in use.

The Army has the capability to predict, plan and monitor noise generated by its training activities in real time. A system known as the Gunfire Noise Analysis Tool, or GNAT (pronounced 'gee-nat'), utilises two remote noise monitors to keep a record of noise generated by live firing. Peak noise contours can be derived from this data and these can be used to examine the noise impact across Salisbury Plain at any given time.

More importantly, the same noise model can be used in conjunction with daily weather forecasts from the Met Office to predict where the greatest noise impacts from given firing positions are likely to arise. The location of these impacts varies primarily as a result of the prevailing wind direction. Using this information it is possible to position gunnery exercises where they will have the lowest impact on any particular day.

In addition, the Army informs residents of forthcoming exercises and other planned military activities. Noise levels are constantly monitored and exercises are planned to take account of the effects of training on the local population.

11.2 Possible Noise and Vibration Effects

Noise is currently being managed as described above. However, noise and vibration effects from construction and operation should be considered in the appraisal. These effects will vary from location to location but are likely to include:

- Demolition and decommissioning works;
- Construction noise;
- Construction traffic;
- Intensification of current training;
- Increase in road traffic on surrounding roads; and
- Increase in flights – helicopter and fixed wing.

11.3 Assessment Methodology

The proposed methodology will be agreed in consultation with the Environmental Health Officer of Wiltshire Council and will include identification of the nearest noise and vibration sensitive receptors.

Baseline noise levels in key locations will be established through a review of any existing records and survey. Vibration monitoring may be required if explosions give rise to vibration and air overpressure.

Prediction of noise levels at the nearest noise sensitive receptors will include:

- A construction noise and vibration assessment (including construction traffic on public roads);
- An operational noise assessment (including any changes to site traffic on public roads); and
- Assessment of predicted noise and vibration levels with regard to agreed criteria levels, including tonal / dominant frequencies, particularly in the lower frequency bands.

Mitigation measures will be recommended if required and where appropriate.

The suitability of sites for residential (SFA) use will also be assessed.

Baseline Studies

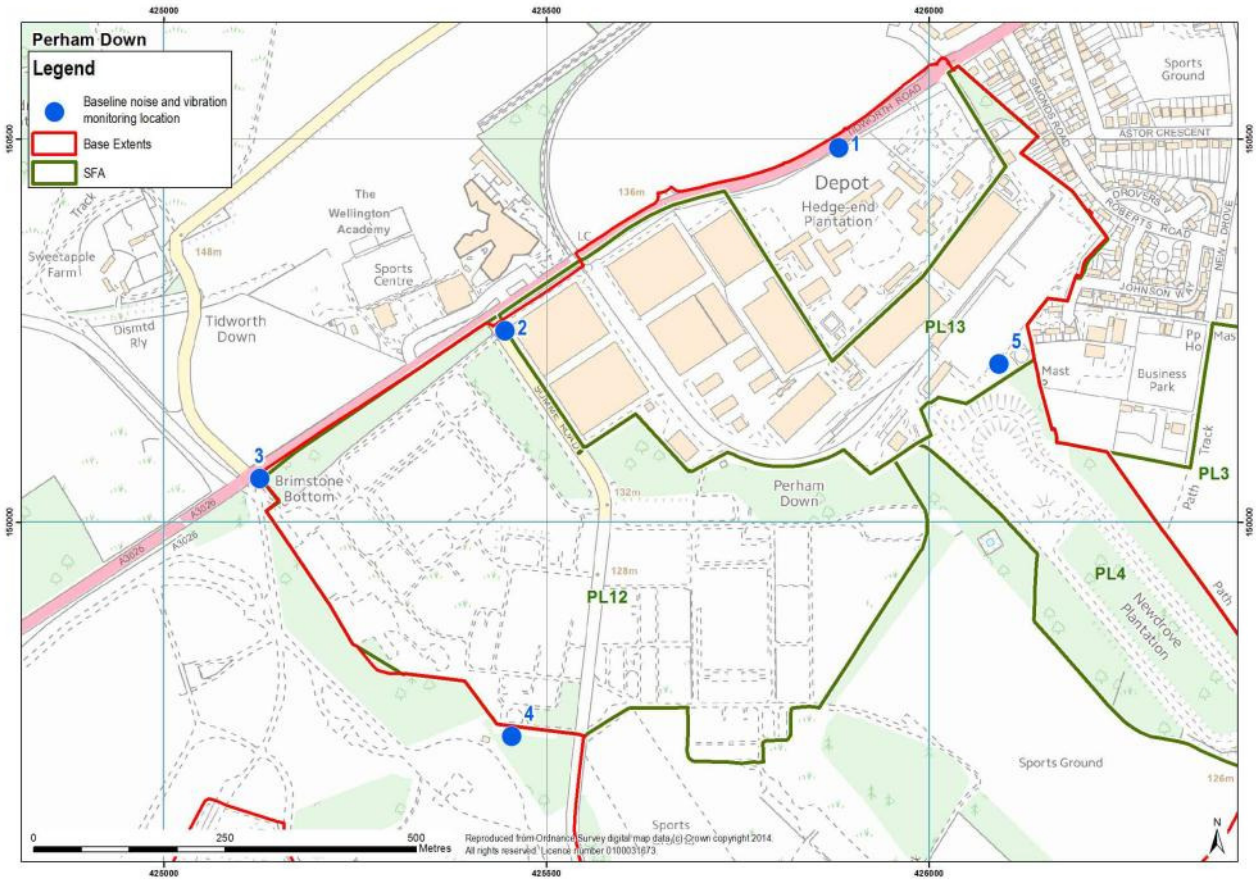
Baseline environmental noise monitoring to BS 7445: 2003 standards 'within the wire' is currently being undertaken for Tidworth, Bulford, Perham Down and Larkhill. Similar baseline studies at locations where SFA is proposed and on public roads potentially affected by construction traffic will also be required.

In total, 22 noise monitoring locations have been identified. Where suitable locations have been identified, noise monitoring will be carried out continuously over a period of 5 days minimum to obtain a representative sample of noise data for each site.

Where secure locations for carrying out long-term unattended noise monitoring are not available or site access has been refused, attended short-term noise monitoring will be carried out in accordance with the shortened measurement procedure detailed within the Calculation of Road Traffic Noise.

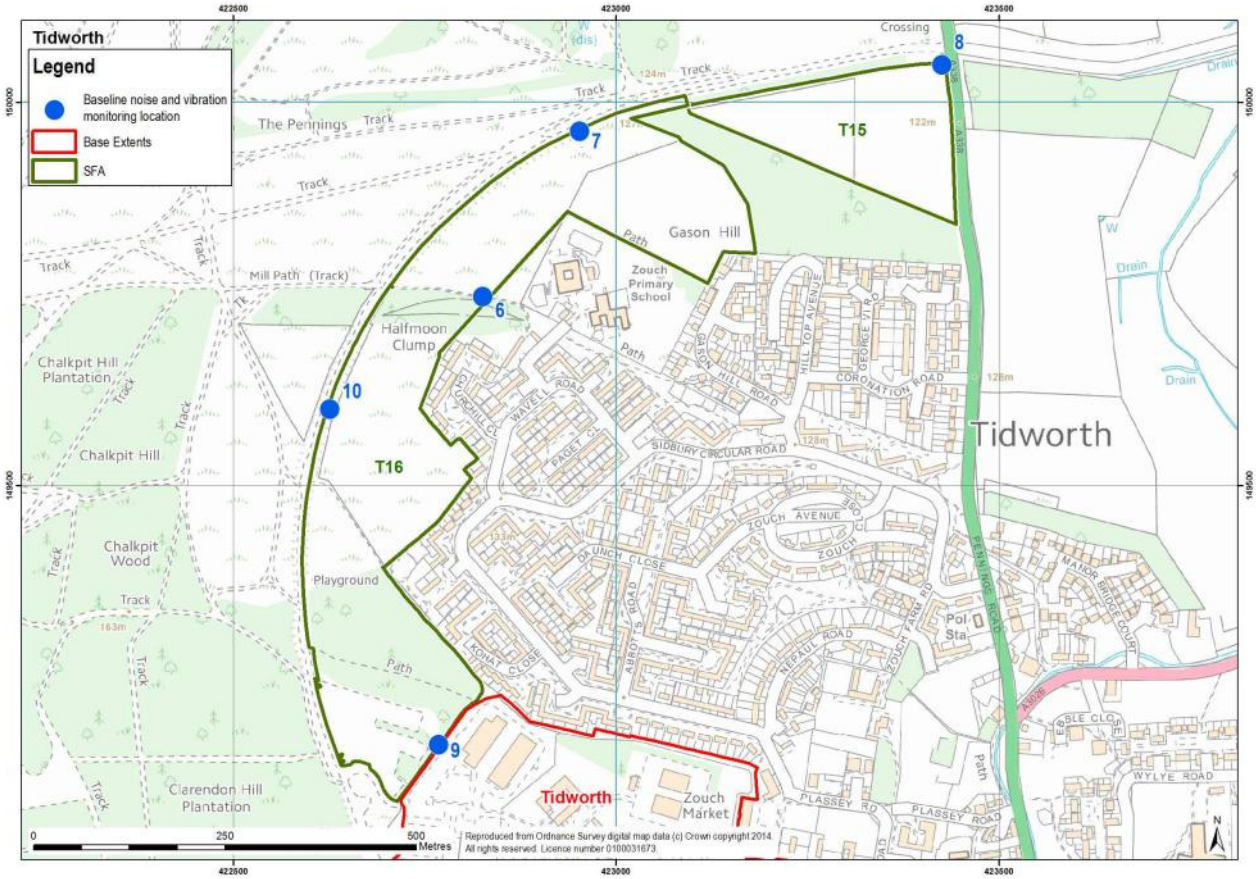
The following maps show the selected noise monitoring locations which are to be confirmed with DIO and Wiltshire Council.

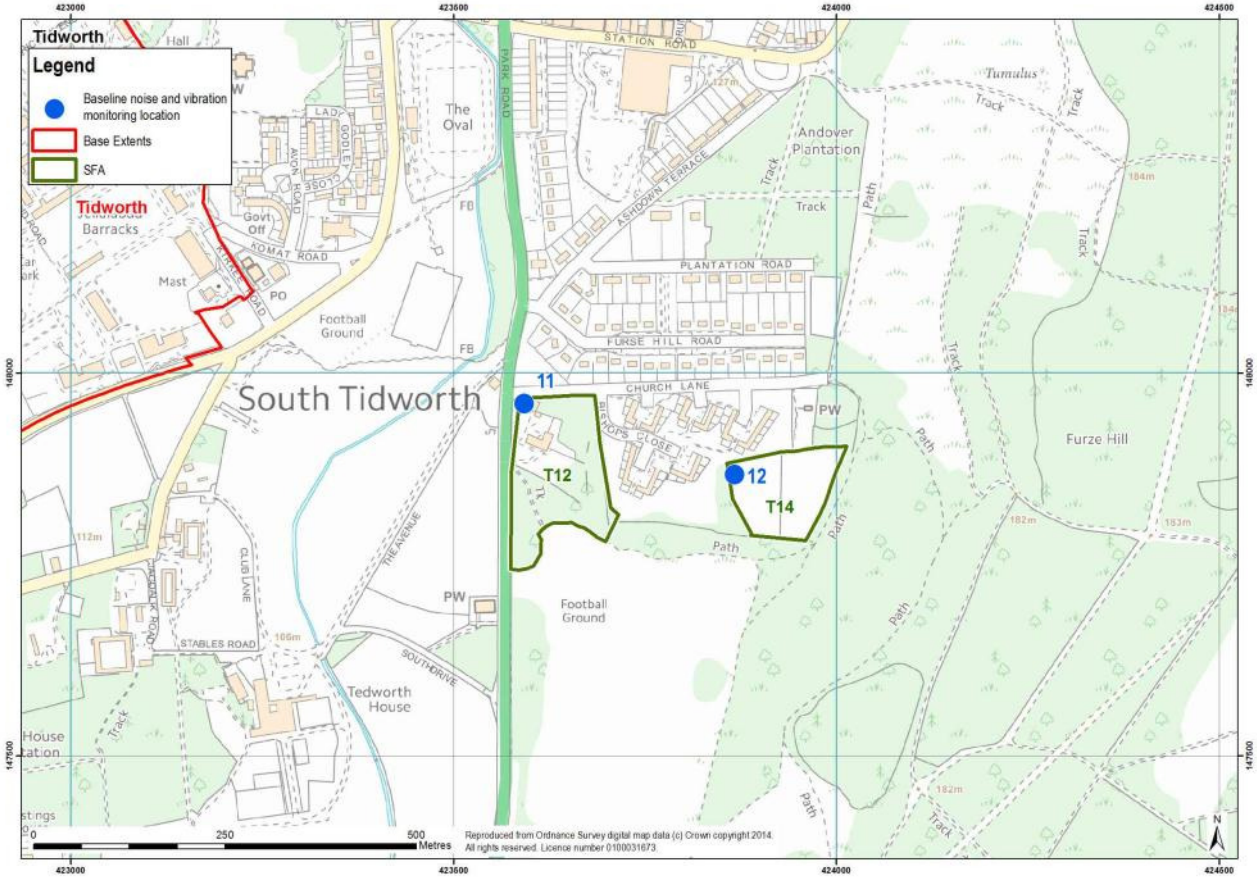
Perham Down



Monitoring Location	Sites	Proposed Noise Monitoring	Comments
1	PL13	Long-term, unattended	Access not confirmed
2	PL12	Long-term, unattended	Access not confirmed
3	PL12	Long-term, unattended	Access not confirmed
4	PL12	Long-term, unattended	Access not confirmed
5	PL13	Long-term, unattended	Access not confirmed

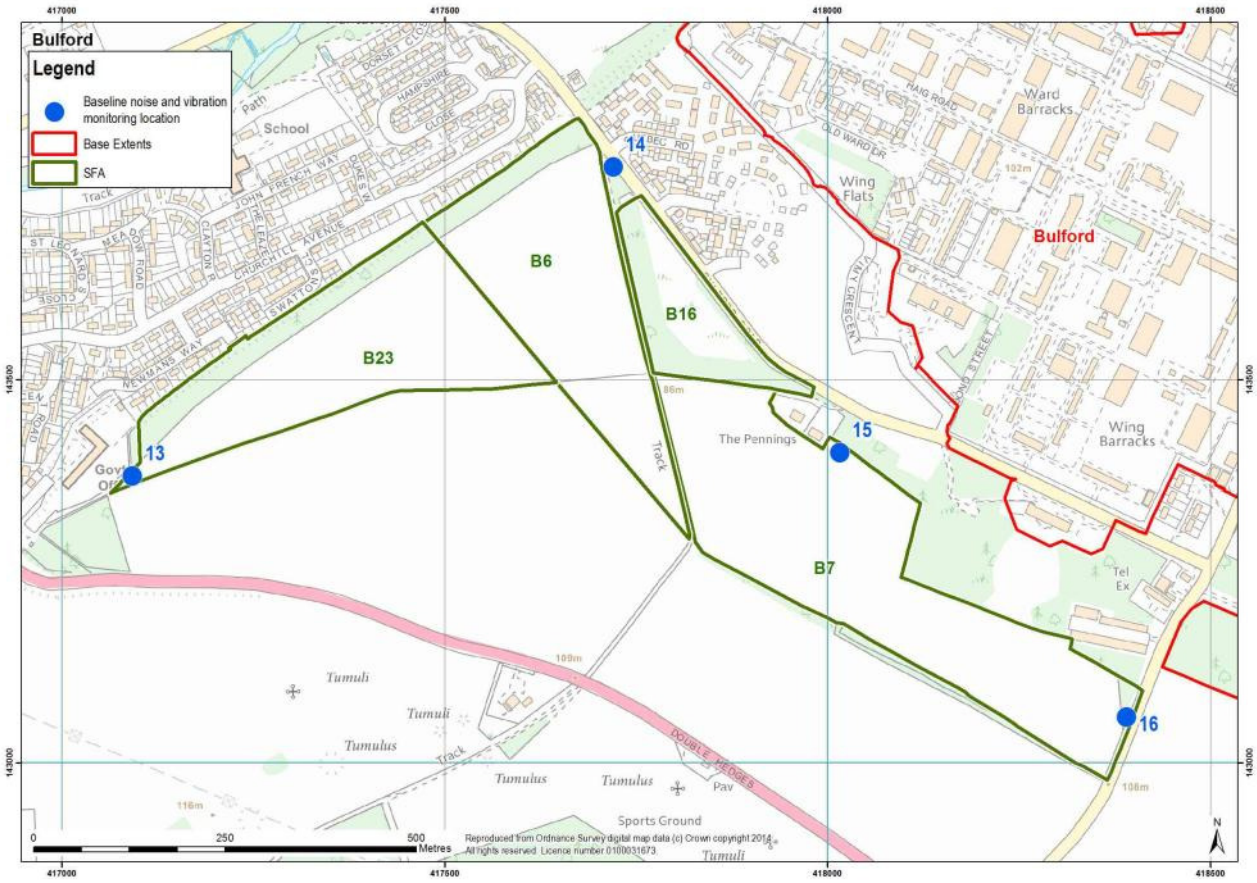
Tidworth


Tidworth
Legend
Baseline noise and vibration monitoring location
Base Extents
SFA
T15
T16
Tidworth
Gason Hill
Halfmoon Clump
Chalkpit Hill Plantation
Chalkpit Hill
Chalkpit Wood
Clarendon Hill Plantation
Playground
Zouch Primary School
Zouch Market
Pol Sta
Mill Path (Track)
The Pennings
Crossing
0
250
500
Metres
Reproduced from Ordnance Survey digital map data (c) Crown copyright 2014. All rights reserved. Licence number 0100031673



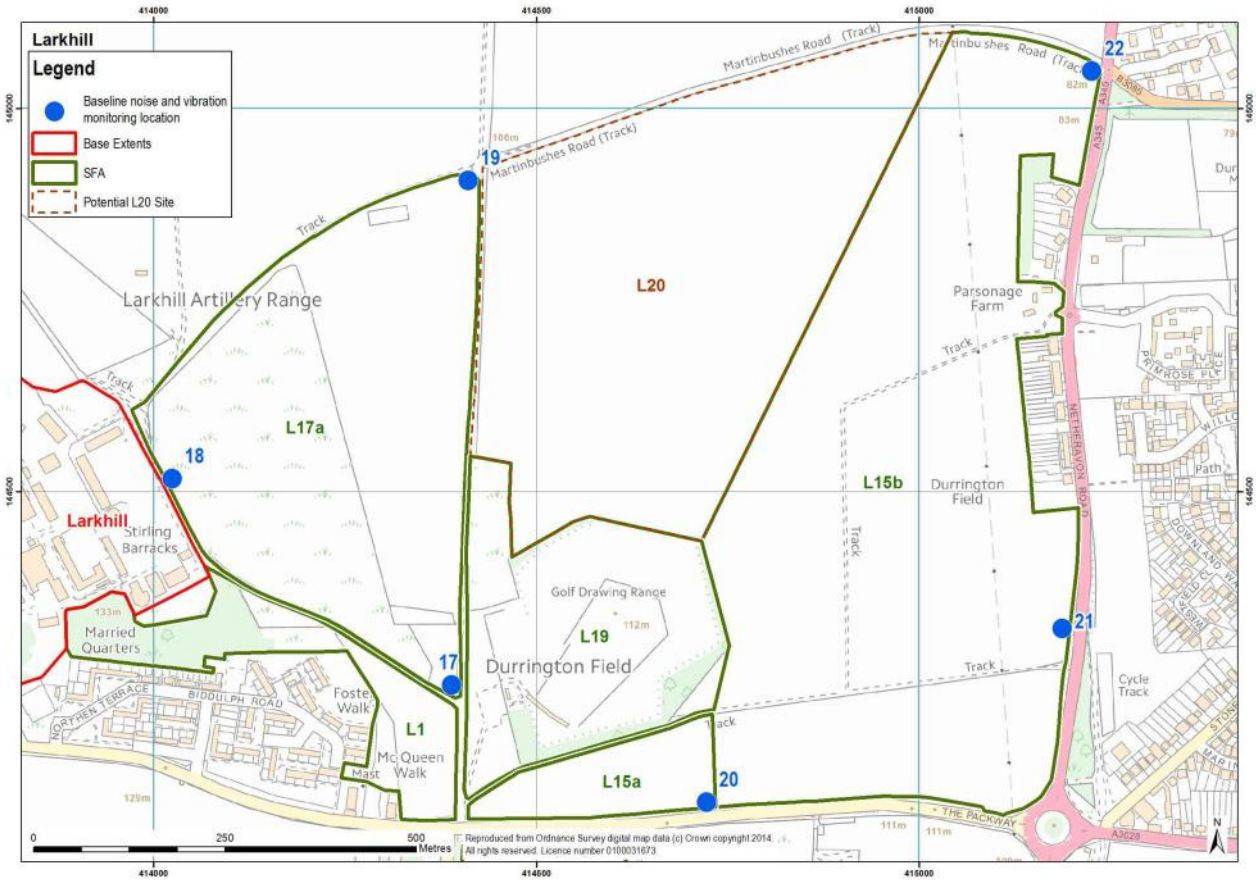
Monitoring Location	Sites	Proposed Noise Monitoring	Comments
6	T16	Long-term, unattended	Access not confirmed
7	T16	Long-term, unattended	Access not confirmed
8	T15	Long-term, unattended	Access not confirmed
9	T16	Long-term, unattended	Access not confirmed
10	T16	Long-term, unattended	Access not confirmed
11	T12	Long-term, unattended	Access available
12	T14	Long-term, unattended	Access available

Bulford



Monitoring Location	Site	Proposed Noise Monitoring	Comments
13	B23	Long-term, unattended	Access available
14	B6/B16	Long-term, unattended	Access available
15	B7	Long-term, unattended	Access available
16	B7	Short-term, unattended	No suitable unattended monitoring location identified

Larkhill



Monitoring Location	Sites	Proposed Noise Monitoring	Comments
17	L17a	Long-term, unattended	Access available
18	L17a	Long-term, unattended	Access available
19	L17a	Long-term, unattended	Access available
20	L15a	Short-term, attended	Access not confirmed
21	L15b	Short-term, attended	Access not confirmed
22	L15b	Short-term, attended	Access not confirmed

12. AIR QUALITY

12.1 Baseline Environmental Conditions

Wiltshire Council covers a large geographical area and is predominantly rural in character, with Salisbury Plain dominating the southern portion of the County. There are Air Quality Management Areas (AQMAs) in Salisbury, Devizes Shanes Castle, Bradford on Avon and Marlborough. The closest AQMA to Salisbury Plain is in Salisbury, approximately 11km from the study area.

The nearest location where air pollutant concentrations are measured is in Warminster. The annual mean nitrogen dioxide concentration was reported by Wiltshire Council to be 28 µg/m^3 in 2011 (Wiltshire Council, 2012). This measurement indicates that air quality is of a good standard and there is no evidence in the published assessments to indicate any concerns on the part of the local authority relating to air quality within the study area being less than good.

12.2 Possible Air Quality Effects

Possible air quality effects will vary from location to location but could include an increase in emissions from road traffic on surrounding roads. In addition, there is the potential for exposure of future occupants of new SFA if developed in areas of existing poor air quality, although the indications are that air quality is generally good across Salisbury Plain.

The following potentially significant effects were identified in the Scoping Report:

Construction

- None identified

Whilst air quality effects from construction were scoped out in the Scoping Report, it has since been agreed that this was based on incorrect assumptions and these effects (e.g. dust) are now scoped in.

Operation

Although thought unlikely, operational air quality effects would be possible from increases in traffic, either military or civilian. Identified effects included:

- Creation of dust
- Increased emissions
- Degradation of air quality from airborne pollutants

12.3 Assessment Methodology

Potential impacts from increased road traffic will be screened against the Design Manual for Roads and Bridges (DMRB) local air quality road traffic criteria (Highways Agency, 2007) and Environmental Protection UK document Development Control: Planning for Air Quality (2010 update) (EPUK, 2010). Both sets of criteria identify levels of traffic change, above which, further air quality assessment is required and below which no significant air quality effects would be anticipated. It is expected that changes in traffic will fall below the screening criteria and will therefore require no further assessment. The ecology team will be consulted to determine if any of the designated ecological sites are sensitive to nitrogen deposition and need to be considered as potential receptors.

Dust impacts during the construction stage will be assessed by providing a qualitative assessment of the potential sources and effects, together with a risk assessment to identify those receptors most at risk following the Institute of Air Quality Management (IAQM) Guidance for assessing impacts from construction activities. The ecology team will be consulted to determine if any of the designated ecological sites are sensitive to dust deposition and need to be considered as potential receptors.

An exposure assessment will be considered if any of the proposed SFA buildings are to be located in areas of poor air quality. Preliminary studies show that the air quality in the vicinity is good, and therefore this is unlikely.

The overall significance of air quality impacts will be described as per the requirements of the National Planning Policy Framework by using the approach outlined in Environmental Protection UK and IAQM guidance. Reference will also be made to relevant planning policy in determining the significance of air quality impacts.

Where necessary, mitigation measures will be recommended to minimise air quality impacts.

Baseline Studies

The purpose of the monitoring survey is to inform the modelling study that will consequently be undertaken to assess the change in air quality pollutant concentrations due to changes in road traffic emissions associated with the proposals.

A 3-month nitrogen dioxide (NO_2) diffusion tube monitoring survey commenced on 28th January 2014. Diffusion tubes were located in duplicate or triplicate at 18 locations in the areas of Tidworth, Perham Down, Ludgershall, Larkhill and Bulford.

A number of 'background' sites were chosen as locations for diffusion tube monitoring in order to determine the baseline NO_2 concentration away from roads and other potential sources of pollution. Sites include Shoddesden Lane, Ludgershall and Bulford Droveway. In addition, diffusion tubes were located at a number of roadside locations where pollutant concentrations including the contribution from road vehicles will be detected. Sites include the A338 and the A3026.

The diffusion tubes will be replaced on a 4 week cycle for 3 months, and returned to Staffordshire Scientific Services for analysis. The 3-month survey is due to be completed at the end of April 2014. Once all results have been received, the recorded period mean concentrations will be compared with concentrations recorded using continuous monitoring techniques in the region and subsequently adjusted to provide an equivalent annual mean concentration for each diffusion tube location using techniques consistent with Defra guidance (Local Air Quality Management Technical Guidance, 2009 – LAQM.TG(09)).

Following receipt of traffic data, the ADMS-Roads model will be set up to model a baseline scenario with present-day road traffic data. The modelled results will be compared with the relevant derived equivalent annual mean concentrations, and an assessment of model bias will be undertaken. Future year baseline and 'with development' scenarios will then be modelled, and the impact of the proposals calculated.

13. SOCIO-ECONOMICS AND COMMUNITY

13.1 Baseline Environmental Conditions

Population

According to a report prepared for Wiltshire Council (2009), in 2007 military personnel accounted for about 3% of Wiltshire's total population, or 15,000 personnel, with a further 14,000 dependants. It is estimated that military (chiefly Army) personnel and their dependants constitute more than 20% of the population in the Bulford, Durrington, Upavon, Warminster East and Nettleton wards of Wiltshire Council, around Salisbury Plain. The percentage is as high as 75% in Tidworth.

Table 13.1: Military Personnel at Bases on Salisbury Plain (Source: Wiltshire Council, 2012)

Site	Total Personnel (not including civilian staff)
Tidworth Garrison, Perham Down & Ludgershall	6,150
Bulford Camp	2,960
Larkhill	1,600
Warminster	1,440
Upavon	210
Netheravon	100
Westdown Camp	40
Winterbourne Gunner	30
Porton Down	20

As a result, these wards have a substantially different age and gender structure to the rest of Wiltshire, with a much higher proportion of younger adult males than the rest of the County. There are also above average proportions of pre-school and primary school age children (Wiltshire Council, 2009).

Employment

Wards with a high proportion of Army personnel have lower levels of civilian employment than would be expected for the size of their civilian workforce. This in part reflects their rural nature but their employment structure is heavily influenced by the Army's presence such that those people who do work in civilian occupations often have jobs linked directly or indirectly to the needs of the Army (Wiltshire Council, 2009).

Housing

The highest numbers of families in Service Family Accommodation (SFA) are located in the Amesbury Community Area, mainly in Bulford and Larkhill, and in the Tidworth Community Area. The most recent estimate shows 1,833 SFA houses in Amesbury, 1,370 in Tidworth, 590 in Warminster and 133 in Wilton (Wiltshire Council, 2012).

It is anticipated that some 1,400 new SFA houses will be required as a result of the ABP.

Education

Unsurprisingly, the distribution of service children in Wiltshire schools shows some similarity to that of SFA. Estimates of the numbers of children from service families are as follows:

- Amesbury: 1,840 – 2,230
- Tidworth: 1,570 – 1,900
- Warminster: 700 – 850
- Wilton: 100 – 120

Children of service families account for some 46% of all pupils in maintained schools living in Tidworth Community Area and 29% in Amesbury Community Area, along with 16% of pupils in Warminster Community Area (Wiltshire Council, 2012).

Early indications (WYG, 2013) are that some 1,300 – 1,400 school places would be required by children of service personnel moving to Salisbury Plain.

13.2 Possible Socio-economic and Community Effects

The following potentially significant effects were identified in the Scoping Report:

Construction

- Creation of direct and indirect employment opportunities
- Increased local revenues

Following consultation on the Scoping Report, the possible loss of agricultural land has been identified as an issue needing to be addressed.

Operation

Potential operational effects were identified as a result of the arrival of additional military personnel and their families. The potential effects were thought likely to include additional demand for everyday services and also jobs for dependents:

- Pressure on local labour market
- Change in wage level in locality
- Growth of local economy
- Increased demand for public services (including schools, medical and leisure facilities)

- Change in crime rates
- Impact on telecommunication access
- Impact on local energy consumption pattern
- Impact on local water supply strategy
- Impact on local waste management strategy

13.3 Assessment Methodology

The OEA will provide an assessment of any likely significant effects of the Masterplan on the population that live and work on or near SPTA. The analysis will identify the existing baseline socio economic conditions and the potential for development to facilitate both direct and indirect employment in Wiltshire. The impacts of the proposed development will be assessed at varying spatial levels consistent with English Partnerships Guidance: 'Additionality Guide, A Standard Approach to Assessing the Additional Impact of Projects, 3rd Edition'.

The analysis will consider the baseline conditions currently associated with Salisbury Plain and its surrounding area, the likely significant effects and any mitigation measures required to prevent, reduce or offset any adverse effects.

Baseline Studies

Baseline data sources that will be consulted comprise, amongst others, 2011 Census Derived Data (General demographics, Employment and Skills, Household Composition, Accommodation, Travel, Health), Mid-Year Population Estimates, NOMIS Official Labour Market Statistics, Indices of Multiple Deprivation and Annual Monitoring Reports.

14. TRANSPORT AND ACCESS

14.1 Baseline Environmental Conditions

Public Highways

The principal public highways on Salisbury Plain without SPTA are the A303 and A36, which run to the south and the A350 between Warminster and Westbury to the west. Several 'A' roads cross SPTA and are important north-south links for Wiltshire. These are the A338 which crosses at its eastern extremity and passes through Tidworth, the A345 which runs along the River Avon valley via Netheravon and Upavon, the A360 which crosses via Tilshead.

Most garrisons and camps have direct access to SPTA and military vehicles do not normally need to use the public highway during training, except from Bulford Camp which has no backdoor access to the training area. Military vehicles do of course sometimes use the public highway for other reasons and are commonly seen in small numbers on the major routes.

Access and Public Rights of Way

The scenic qualities of SPTA, its rich heritage and comparatively remote nature have created a valuable recreational facility that the public use and enjoy. It is of particular importance for local communities. In addition to traditional recreational use, such as walking, horse riding and cycling, the estate is used both formally and informally by the public for many other recreational activities.

It is the policy of the MOD to have a *"…presumption in favour of safe public access wherever this is compatible with operational and military training uses, public safety, security, conservation and the interests of its tenants"* and it will *"…continue to work with local authorities, statutory bodies, local and national access fora and other relevant stakeholders to understand the public's wishes for access…"* (Defence Estates, 2006).

Public Rights of Way (PROW) exist on SPTA. Motor vehicular use is limited to byways open to all traffic (BOAT), and unclassified and classified roads. The Salisbury Plain Military Lands Byelaws 1981 also allow drivers to use roads where access is not excluded or restricted by sign, barrier or other means, although such permissive roads can be closed at any time.

Public footpaths, bridleways and restricted byways can also be used by the public but not by motor vehicles. For those on foot the Salisbury Plain Military Lands Byelaws 1981 allow access to all areas of the Plain, beyond PROW where access is not excluded or restricted by sign, barrier or other means. Additionally, as discussed in Chapter 4, non-military organisations can access SPTA for recreational and other purposes through the GP22 booking system.

14.2 Possible Transport Effects

The following potentially significant effects were identified in the Scoping Report:

Construction

- Closure of existing footpaths and other recreational activities
- Conflicts of interest with other users of the countryside
- Temporary or permanent loss of amenity value

- Potential for severance

In commenting on the Scoping Report, the Highways Agency has asked that the potential for disruption resulting from construction workers travelling to the sites, deliveries of materials and construction traffic should be explored.

Operation

- Possible alteration of rights of way or reduction in access
- Increased pressure to recreational sites
- Conflicts of interest with other users of the countryside

In addition, the Highways Agency has highlighted possible impact on the single carriageway section of the A303T between Amesbury and Winterbourne Stoke from new SFA at Larkhill as a key concern.

14.3 Assessment Methodology

Public Highways

It is proposed that an Outline Transport Assessment (OTA) is prepared to support the preparation and testing of the Masterplan. This would assess at a strategic level the overall impacts of the Masterplan in transportation terms, whilst also informing the development of the Masterplan and OEA.

This would entail a framework approach, identifying the cumulative impact from the main changes being brought forward through the Masterplan. It can be developed to either build upon the individual transport assessments being undertaken for the garrisons and camps, or be used to inform the preparation of individual transport assessments, within a consistent methodology.

This approach will enable a proactive approach to be adopted in seeking to assess potential issues which may be raised by the Highways Agency and Wiltshire Council in its role as highway authority. This will allow the key corridors and principal junctions which have been highlighted earlier to be assessed collectively or individually. This will enable any key issues or risks to the project to be identified at an early stage and managed through the development of the Masterplan and the implementation of the proposals. It can also test the potential options for the location(s) of the accommodation being proposed.

The OTA will then highlight options to address impacts arising from the Masterplan or individual sites such as potential improvements to junctions affected by the proposals or the promotion of sustainable modes of travel e.g. car sharing to be employed across Salisbury Plain.

This approach would also allow a more detailed assessment to be undertaken close to any of the sites as required, to be developed in tandem with the Masterplan.

Access and Public Rights of Way

Changes to access and public rights of way do not lend themselves to environmental assessment in the usual sense. Therefore it is not proposed to carry out an assessment of the effects but rather to report any changes that may occur in an informative (i.e. non-assessed) chapter of the OEA.

15. INTER-RELATIONSHIPS AND CUMULATIVE EFFECTS

The Outline Environmental Report will contain a chapter giving a qualitative assessment of the potential cumulative impacts associated with the construction and operation of the proposed developments and other significant committed development in the vicinity.

This chapter will consider two types of impacts of the proposed developments:

- Synergistic - combined effects of different types of impacts, for example noise, dust and visual impacts, from the proposed development on a particular receptor; and
- Cumulative - impacts from several developments, which individually might be insignificant, but when considered together could give rise to a significant cumulative effect.

16. OUTLINE ENVIRONMENTAL REPORT

16.1 Structure of the Outline Environmental Report

The structure of the Outline Environmental Report will be as follows:

- Non-Technical Summary

Part A: Context

- Introduction
- Methodology
- SPTA and Surroundings
- Proposed Development
- Alternatives to the Proposed Development

Part B: Assessment

- Military Training
- Ecology and Nature Conservation
- Archaeology and Cultural Heritage
- Water Resources
- Landscape and Visual
- Soils
- Noise and Vibration
- Air Quality
- Socio-economics and Community Effects
- Transport and Access

Part C: Conclusions

- Inter-relationships and Cumulative Effects
- Summary of Residual Environmental Effects, Mitigation and Monitoring

17. GAP ANALYSIS

17.1 Introduction

A gap analysis is a tool used to identify where the information or resources required to complete a particular project are lacking. The aim is usually to facilitate the collection of the required information or to secure the necessary resources that will enable to project to be completed successfully.

However the gap analysis has a different function for the purposes of the OEA, which is to highlight where gaps will exist in the completed OEA as a result of programme or seasonal constraints. The will enable the gaps to be addressed by subsequent projects, such as applications for planning permission or possible later iterations of the OEA itself.

The project team believes that the outcome of the OEA will be more than sufficient to identify the likelihood of significant environmental effects resulting from implementation of the Salisbury Plain Masterplan.

17.2 Identified Gaps

Table 17.1: Identified Gaps in Information

Topic / Chapter	Unavailable Information	Proposed Solution
Proposed Development	The location(s) of utilities infrastructure is not yet known.	If this information becomes available during the OEA programme it will be included in the assessment. If not, it will need to be incorporated into subsequent planning applications. It may also be necessary to review and update the OEA.
Military Training	The final shape of future training activities will not be known until all units are in place. This is essential to the assessment of effects on SPTA.	Assumptions about future training activities for use in the assessment are currently being agreed with the Army. Additionally it should be noted that a sustainable training regime is already in place to manage military impacts on SPTA on an on-going basis.
Ecology	Updated Breeding Bird Survey. A new survey will be undertaken in 2015; results will not be available in time to include in the OEA.	Utilise latest available data for the OEA.
	Updated Grassland Survey. A Grassland Survey is being undertaken in 2014 but complete results will not be available in	Utilise latest available data and any emerging for the OEA.

Topic / Chapter	Unavailable Information	Proposed Solution
	time to include in the OEA.	
	The need for bat survey work is not known at present but there is a risk of encountering maternity or hibernation roosts. Bat activity surveys for maternity roosts would need to take place in May / June. Hibernation roosts would need surveys in January / February.	Extended Phase 1 surveys will identify the possibility of bats being present. Any bat activity surveys subsequently identified would be undertaken in support of planning applications if they cannot be completed in time to inform the OEA.
Cultural Heritage	Detailed design of proposed new buildings will not be available to inform the setting assessment for listed buildings.	Undertake a setting assessment using available footprint and massing envelope. Use this assessment to highlight the need for any further work that may be necessary for planning applications.
Landscape and Visual	Detailed design of proposed new buildings will not be available to inform the visual impact assessment.	Undertake a visual impact assessment using available footprint and massing envelope. Use this assessment to highlight the need for any further work that may be necessary for planning applications.
Waste	Elimination of waste is a topic referred to in the EIA Regulations for consideration in an Environmental Statement but is not part of the scope of the OEA.	It is considered that this is a subject more effectively addressed at the planning application stage when the volumes of waste are likely to be known and effective mitigation measures can be developed.

18. WORK CARRIED OUT TO DATE

18.1 Introduction

This section of the Interim Environmental Report discusses the work that has been carried out to date and how this has influenced the development of the Planning Context Report.

18.2 Army Basing Programme Environmental Team

DIO has appointed an Environmental team for the ABP which sits within the Infrastructure Delivery Team (IDT). The IDT is responsible for the provision of infrastructure to meet the needs of the Army in advance of its redeployment to new locations across the UK. The Environmental Team Lead is responsible for identifying all potential environmental issues that could arise as a result of the ABP and ensuring that the necessary mitigation is in place to address the potential issues.

18.3 Meetings with Key Stakeholders

The ABP Environmental Lead met informally with the Environment Agency, English Heritage and Natural England during the summer of 2013 to give a broad overview of the changes affecting Salisbury Plain and to understand what the stakeholders felt were likely to be the key issues.

A more formal presentation of the programme for the preparation of the Masterplan was made to these stakeholders and to officers from Wiltshire Council and the Highways Agency on 4th October 2013. A question and answer session followed with the ABP Project Manager and members of the IDT, along with the WYG team preparing the Masterplan. An important outcome of the meeting was an agreement to create an Environmental Sub-Group to the Army Basing Steering Group set up by Wiltshire Council and DIO.

18.4 Environmental Sub-Group

The Environmental Sub-Group brings together representatives from the statutory bodies, Wiltshire Council conservation, landscape and archaeology teams, the WYG Masterplan team and the IDT. Subject Matter Experts from DIO also attend as appropriate. The aim is to ensure that key stakeholders are able to comment upon the emerging Masterplan and OEA, as well as to facilitate the early identification of potential issues or risks.

Two meetings have been held so far, on 13th November and 11th December 2013. These have raised a number of issues for consideration by DIO including the role and scope of Habitats Regulations Assessment and the impact of the proposed utilities solutions. The intention is that the Sub-Group continues to meet on a monthly basis until the final Masterplan is published in May 2014.

18.5 Scoping Report

As discussed above, a Scoping Report has been prepared and issued to stakeholders for five weeks to allow them to comment on the proposed scope of work for the OEA. Comments received have been incorporated into the methodologies set out in this Interim Environmental Report which now represents an agreed method of assessment of the potential environmental effects of the Salisbury Plain Masterplan. Comments on the Scoping Report are summarised in Appendix A of this IER.

19. REFERENCES

Countryside Agency and Scottish Natural Heritage, 2002: Landscape Character Assessment: Guidance for England and Scotland.

Crutchley, S., 2000: Salisbury Plain Training Area: A report for the National Mapping Programme Wiltshire and Hampshire.

Defence Estates, 2006: The Defence Estates Strategy 2006: In Trust and On Trust.

Defence Infrastructure Organisation, 2013: Salisbury Plain Army Basing Programme Outline Environmental Appraisal Scoping Report.

Department for Communities and Local Government, 2012: National Planning Policy Framework.

Department for Environment, Food and Rural Affairs, 2009: Local Air Quality Management Technical Guidance LAQM.TG (09).

Ellis, C and Powell, A.B. 2008: An Iron Age Settlement outside Battlesbury Hillfort, Warminster and Sites along the Southern Range Road.

English Heritage, 2009: Stonehenge World Heritage Site Management Plan.

English Heritage, 2012: Guidance on the Setting of Heritage Assets.

English Partnerships, 2008: Additionality Guide: A standard approach to assessing the additional impact of interventions.

Environment Agency, 2012: Hampshire Avon WFD Management Area Abstraction Licensing Strategy, Environment Agency.

Environmental Protection UK, 2010: Development Control: Planning for Air Quality.

Fulford, M.G., Powell, A.B., Entwistle, R. and Raymond, F., 2006: Iron Age and Romano-British Settlements and Landscapes of Salisbury Plain.

Headquarters Land Command, 2002: Environmental Appraisal of post Strategic Defence Review Training on ATE Salisbury Plain, Project Scope.

Highways Agency, 2007: The Design Manual for Roads and Bridges (DMRB) local air quality road traffic criteria.

James, N.D.G., (1987): Plain Soldiering: A History of the Armed Forces on Salisbury Plain.

Joint Nature Conservation Committee (2001). Salisbury Plain SPA description. [Online] Available from: http://jncc.defra.gov.uk/default.aspx?page=2040 [Accessed 19 July 2013]. Joint Nature Conservation Committee, Peterborough.

Landscape Institute, 2011: Landscape Institute Advice Note 01/11: Photography and photomontage in landscape and visual impact assessment.

Landscape Institute and Institute of Environmental Management and Assessment, 2013: Guidelines for Landscape and Visual Impact Assessment, 3rd Edition.

McOmish, D. Field, D. and Brown, G., 2002: The Field Archaeology of Salisbury Plain Training Area.

Ministry of Defence, 2009: Sustainability and Environmental Appraisal Tools Handbook: Section 4 Environmental Impact Assessment.

Ministry of Defence, 2010: MOD corporate environmental protection manual (JSP 418).

Ministry of Defence, 2012: Land Contamination Management – Land Quality Assessment (LQA) Practitioner Guide 07/12.

Ministry of Defence, 2013a: Health, Safety and Environmental Protection in Defence – A Policy Statement by the Secretary of State for Defence.

Ministry of Defence, 2013b: Regular Army Basing Plan – 5th March 2013.

Multi-Agency Geographical Information for the Countryside website available at http://magic.defra.gov.uk/

RPS, 2000: Strategic Environmental Appraisal of the Strategic Defence Review (SDR). Higher Level Environmental Assessment of the Likely Effects of SDR on the UK Army Training Estate (HLEA-TE), Final Report.

Wiltshire County Council, 2005: Wiltshire Landscape Character Assessment Final Report.

Wiltshire Council, 2009: Envisioning the Future.

Wiltshire Council, 2012: Military population in Wiltshire and the South West region.

Wiltshire Council, 2012: Air Quality Updating and Screening Assessment for Wiltshire.

WYG, 2013: Planning Context Report and Master Plan Phase 2: Constraints and Opportunities Mapping and Preliminary Social Infrastructure Assessment.

20. APPENDIX A – RESPONSE TO SCOPING COMMENTS

20.1 Comments on the Scoping Report

The table below summarises the comments received from stakeholders and the proposed responses. Often the comments will be taken into account in the OEA itself and not necessarily in this IER.

Consultee name	Ref.	Report section	Comment	Response to comment
Wiltshire Council	1.	Section 5 - Approach to the appraisal	1. Environmental assessment (EA) needs to be iterative, and needs to be able to influence the development of the plans 2. EA needs to be incorporated into the process as early as possible and the programme revaluated throughout as it changes. This is not captured. 3. Will the EA compare the effects of different options? This looks like it will be a single Outline Environmental Report setting out the environmental impacts of the final Masterplan rather than influencing the decision making process. 4. Baseline data requirements – need to understand what is available, where are gaps, who and when gaps will be filled (timeline). These could apply to all of the environmental disciplines to be covered by the OEA covered in the following chapters.	1. Noted and agreed 2. Noted and agreed; scope description to be amended within the OEA to capture this overall aim. 3. The OEA will provide a summary of the likely effects for the preferred sites and options, which may influence the location of infrastructure. 4. Noted and agreed – results of a gap analysis will be reported within the IER and the OEA will draw on existing information combined with new survey data.
	2.	Section 7 - Ecology	1. Given the forthcoming designation of the Nine Mile River SSSI, it will be necessary to establish the conservation objectives and PDOs for this site early. NE should also confirm whether there is any intention to extend the River Avon SAC to include this – I wasn't certain about this from the last meeting. 2. There is no reference to County Wildlife Sites, which are protected under local plan policies 3. There is no reference to priority habitat / species, which are protected under national / local plan policies 4. There may be data requirements for wintering birds 5. Data on recreational pressures will be required 6. There is a need to identify opportunities for ecological compensation e.g. habitat creation / restoration early on	1. Noted and agreed – clarification will be sought from NE. 2. All relevant designated sites will be considered as part of the OEA. 3. As above, all relevant priority sites /species will be considered as part of the OEA. 4. The need for a wintering bird survey has been considered but will not be undertaken as part of the OEA. 5. A socio-economic assessment is being carried out and findings will be reported as part of the OEA 6. Ecological mitigation measures will be identified as part of the assessment, following surveys and confirmation of design proposals.
	3.	Section 10 - Landscape	1. It will not be possible to do a full LVIA for every potential site as part of this process 2. A landscape sensitive study for each camp is likely	1. Noted and agreed 2. Noted and agreed; baseline surveys will

Consultee name	Ref.	Report section	Comment	Response to comment
			to be more use at a strategic level to aid and inform site selection e.g. similar to the former Salisbury District settlement study 3. A landscape appraisal of each development parcel option should then be undertaken at an early stage using the principles of LVIA. For each parcel of land consider it contribution to local landscape character, potential visibility from sensitive viewpoints and capacity to accommodate development – we carried out a similar assessment for the core strategy options to help inform the capacity of each site. Full LVIA could then be carried out on detailed proposals. 4. 10.1 – this is just a description of SP. The LCAs include more useful information on sensitivities / threats which need to inform the strategic site selection. There is a specific LCA for SPTA (carried out by MOD) which will probably provide more detail 5. Please consult WC landscape officers before selecting viewpoints and to discuss methodologies	be undertaken at garrisons as early as possible. 3. Noted, this strategy will be adopted where possible. 4. LCAs will be considered as part of the assessment. 5. Noted; input from WC landscape officers will be sought early in the process.
English Heritage	4.	General	We would find it reassuring if the full extent of scoped-out SFA and Army 2020 sites could be revealed as soon as possible.	This relates more to the Masterplan than the environmental appraisal work; WYG to confirm and provide details of scoped-out sites to EH.
	5.	Section 8 - Archaeology and Cultural Heritage	Key concern is the assertion in the report that visual impacts cannot be assessed at the masterplanning stage and instead would be fully examined at subsequent planning applications. The sub-group meeting last week heard that the scoping report would contribute towards the identification of "Potential Preferred Sites" (hereafter PPS). Assuming that 'no-go' sites have been scoped out at an early stage we would recommend that some setting assessment work is done at masterplanning stage to inform the selection of PPS sites, even if at a fairly broad-brush grain. As potential sites are scoped down it becomes more important to understand possible constraints or conflicts with the remaining candidate sites. This is particularly so	Noted and agreed – see response to Ref. 3 comments.

Consultee name	Ref.	Report section	Comment	Response to comment
			where development at a given location could have a detrimental impact upon the significance of a heritage asset by severing its visual relationship with other heritage assets, by impacting upon its character or by diminishing the ability to understand and appreciate the heritage asset within its landscape context. In practice, this could mostly although by no means wholly, impact upon the historic built environment.	
	6.	Section 8 - Archaeology and Cultural Heritage	The scoping report fails to give due weight to the process of prior archaeological evaluation as part of the assessment & masterplanning process, given the very high archaeological potential at virtually all the sites around the edge of the Plain.	Updated scope is reported in IER, however it is considered too early, for example, to undertake site investigations.
	7.	Section 8 - Archaeology and Cultural Heritage	Very significant group of early military aviation sites, including extant airfields, which lie both within and without the wire at affected sites. These together with military archaeology sites and structures associated with the First World War will undoubtedly be high in the national consciousness as we go through the centenary of this conflict from 2014 onwards. Important that any constraints or conflicts upon the programme arising from the presence of this type of heritage is appropriately assessed, including the presence of hitherto unknown or forgotten sites.	Noted; these sites will be considered as part of the OEA.
	8.		Support comments of Helen Garside, Principal Conservation Officer at Wiltshire Council and her advice in terms of Grade II listed buildings and non-designated heritage assets. Arising from this it is important that potential effects upon *all* types of non-designated heritage assets is assessed, both in terms of historic buildings and archaeological sites.	Assessment criteria will be refined and discussed, particularly with regard to the non-designated assets.
Highways Agency	9.	Section 1 – Introduction (Para 1.3)	Sustainability Appraisals (SA) of all elements of Army Basing Programme (ABP) are being done. This is contrary to the information which was circulated at stakeholders' meeting organised in Trowbridge in October. SA would normally include the identification and evaluation of strategic options, which would identify: • If opportunities exist to minimise adverse effects arising	MOD Sustainability Appraisals were undertaken early on in the development of the ABP proposals – including an SA for the Salisbury Plain area – to identify the generic environmental and socio-economic effects of the various proposals. The findings of the SA informed the Assessment Studies for the

Consultee name	Ref.	Report section	Comment	Response to comment
			from transport on the environment and traffic congestion; and • If such measures were proposed to be undertaken. The Agency considers that this is a crucial part of the overall Outline EA, as well as any EIA undertaken for individual development projects. The transport and accessibility impacts predicted to arise from different spatial options can be established in this way.	Garrison sites and the development of SFA proposals, as well as the scope of the OEA.
	10.	Section 3 – Proposed development	Chapter 3 indicates that approximately 2,000 personnel plus 1,780 dependants are intended to be moved to Larkhill. This equates to roughly half of the entire accommodation expansion outlines in SPTA. This in turn will affect travel mode, and trip distance, for all service personnel and their dependents and the Agency considers that this should needs to be reflected in the Outline EA. The Agency is concerned that the traffic impact from the site, if comparable to 2,000 extra standard dwellings, would be likely to lead to a significant impact on the single-carriageway section of A303 (T) between Amesbury and Winterbourne Stoke. This must be explored and reported on fully in the Outline EA.	Noted – an OTA will be undertaken to support the Masterplan and will be reported as part of the OEA.
	11	Section 15 – Transport and access	Chapter 15 seeks to briefly identify the baseline conditions and possible environmental effects considered likely to impact on transport and access from the proposed ABP, and outlines a proposed assessment methodology (namely an overarching transport assessment). This chapter appears to highlight the effects which may arise from the more intensive use of the training area itself, and not on the effects which may arise on the surrounding transport network resulting from the larger presence of military personnel and dependants in the garrison sites.	Noted – the OTA will take account of additional traffic generated by all proposed development.
	12.	Section 15 – Transport and access	The potential environmental effect section does not mention of the requirement during the construction phase for a large number of deliveries of materials and large numbers of construction workers to travel to site, which will impact on the road network. Likewise the potential environmental effects section does not discuss the impact of travel by service personnel and their dependents during	Noted – these aspects will be considered as far as possible based on the available detail from the overarching transport assessment and findings will be reported within the OEA.

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			the operation phase of the ABP.	
	13.	Section 15 – Transport and access	Presume that your references to 'abnormal invisible loads' in the unnumbered Appendix should read 'abnormal indivisible loads' as defined in The Road Vehicles (Authorisation of Special Types) (General) Order 2003.	Correct, this should read 'in-divisible' loads. Typo noted.
	14.	Section 15 – Transport and access	The Agency is keen to explore opportunities for early discussion between your organisation, your consultants and the local authority regarding the significant benefit we feel is likely to accrue from undertaking an early, overarching TA. This will enable you, and all other relevant parties, to get a clearer understanding of the transport impact of the current proposals and how these might vary (for better or worse) under different spatial options.	Noted; the consultant undertaking the overarching transport assessment will seek HA and LA input as soon as possible, to capitalise on existing knowledge and agree the approach to assessment. *Meeting held 24/01/14 with HA and WC to discuss.*
Wiltshire (Conservation)	15.	Section 8.1 - Baseline Environmental Conditions	The overview is relatively strong on the high interest of the area from the point of view of what might be described as 'traditional below ground archaeology' – however, the quality of the county's, including this area, built heritage is also exceptional and this should be acknowledged. I would include within this definition the pervasive legacy of the long military presence within the area. In particular, the group of military airfields around SPTA which date to the crucial formative phase of military aviation prior to and during WWI should be considered to be of international significance. Sites associated with WWI are likely to receive a raised level of interest in the next few years as significant anniversaries are reached – further designations can be expected.	Noted; these sites will be considered as part of the OEA.
	16.	Section 8.1 -(Listed Buildings)	The churches at Larkhill and Bulford are identified as listed buildings – however, they are not actually designated, although they should be considered as having local significance and are likely to have a high communal value. It should be made clear that the listed buildings mentioned are not an exhaustive list of those within the area of interest (e.g. SPTA also includes a number of isolated listed farmsteads).	Noted, this will be clarified within the IER and the OEA report.
	17.	Section 8.2 - Possible Environmental Effects	The greatest threat to the built historic environment is likely to lie with an indirect impact on significance via	Noted; the assessment scope, including consideration of indirect setting impacts, will be

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			development within the setting which affects the character of that setting, severs the relationship between buildings or affects the ability to appreciate buildings and structures within their context. However, it is unclear from the report to what extent the impact on setting will be taken into account. The report suggests that an initial appraisal will be carried out where development could affect the setting of a listed building but this is not carried through into the identification of any specific identified impacts for assessment within the EA. In addition, it should be noted that this impact cannot be confined to listed buildings but should be considered in relation to the historic environment in general – including designated and non-designated assets and groups of assets. Whilst a fully detailed setting impact assessment cannot be undertaken without detailed proposals, it should be entirely possible to make a broad assessment of the impact of developing any site and suggest potential requirements for mitigation. The identified potential impacts (specific direct physical damage resulting from construction and operation) appear to represent a very partial, short term, and inadequate view. Long term risks from demolition and decommissioning and from the on-going physical presence of the development and its associated infrastructure and users have not been included and require more thorough consideration.	further discussed and agreed during the baseline studies. It should be noted, however, that the context for military development (on garrisons at least) is that of military installations (i.e. the appropriate setting for such).
	18.	Section 8.3 - Assessment Methodology	<u>Proposed resource/Receptor Evaluation Criteria</u>: Query the separation of WHS to a separate category above grade I and II* buildings, registered parks, scheduled monuments etc. and would suggest that all of these receptors should be considered as being of “very high” value as per the instruction within paragraph 132. Query the consequence of this separation, which is the effective demotion of Grade II listed buildings, registered parks etc. to a “Medium” value category shared with	Assessment criteria will be refined and discussed, particularly with regard to methodology for non-designated assets. Correction to ‘formal list’ reference noted.

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			buildings, landscapes and monuments of local interest. Designated assets (and currently unknown assets which may be identified during the planning process and which can be shown to have similar historic, evidential, aesthetic or communal interest) should be considered to be of at least "high" value (para.132). The "medium" value category of "non-designated buildings, monuments, sites or landscapes that can be shown to have important qualities in their fabric or historical association" should also include groups of buildings or monuments which have a cumulative interest. Suggest that the potential communal value of non-designated buildings or monuments which may otherwise be of limited interest, should not be underestimated – lessons should be learnt from consequent delays and damage to public perception on other sites e.g. in respect of the garrison theatre at Tidworth and the chapel at Lyneham. N.b. Wiltshire Council does not hold a formal list of locally listed buildings and this category should be removed from the table to avoid confusion.	
	19.	Section 8.3 (Baseline data requirements)	<u>Baseline Data Requirements</u>: Main concern lies with the current limited understanding and documentation of the historical significance of these sites due to their closed nature. Desk based appraisals will need to take this limitation into account. Pleased that contact has been made with English Heritage specialists in C20 military heritage etc. and would hope that early consideration can be given to developing a methodology for the rapid assessment of those sites which are likely to be subject to the greatest pressure for change. In the absence of such an exercise, the risk of conflict later in the planning process is high.	Noted – desk based assessment will consider significance of closed sites; methodology to be discussed and agreed.
	20.	Appendix – Scoping tables	<u>Appendix – Scoping tables</u> 1. Query scoping out of 'Demolition and	1. Noted; scoping is an ongoing process

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			decommissioning' as "activities are not currently anticipated". Not all of the proposed sites are clear sites and it is inconceivable in any case that this level of development could be undertaken without some element of demolition and/or decommissioning. This section should therefore be reconsidered. In addition to the direct physical impacts (damage to or loss of assets), impact resulting from a loss of context for remaining features should also be considered. 2. In addition to direct physical impacts to known and unknown assets, 'Construction' impacts should be widened to include short and long term impacts to setting and context (as per impacts in relation to Landscape). 3. In addition to direct physical impacts to known and unknown assets, 'Operational' impacts should be widened to include short and long term impacts to setting and context (as per impacts in relation to Landscape).	and it is recognised that assessment for some demolition / decommissioning may be required. 2. Noted, though long term impacts to setting and context would fall under the operational assessment. 3. Noted (and see Ref. 17)
Environment Agency	21.	Section 9 – Water resources	1. Abstractions under the direct control and operation of the MOD do currently benefit from Crown exemption as the document states. This exemption is however likely to be removed in the near future, bringing these abstractions within the regulatory framework. 2. In addition, MOD abstractions under the operation of third parties (e.g. Veolia) are subject to licensing and as a consequence any proposed variation to these licenses will require appropriate assessment of impact through the permitting process. This will take due regard of catchment water resources, third party users, habitats and as a consequence may require detailed impact assessments. 3. We are in discussions with DIO and their	1. Noted that the exemption is likely to be removed. 2. Noted; the third parties are being consulted as part of the process of developing the groundwater model. 3. We will work with the appointed consultants to define the required groundwater model runs.

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			consultants concerning the potential use of the EA / WW Wessex Basin Groundwater model to facilitate this assessment. A clear understanding of historic, existing and proposed abstraction rates will be required as part of this work.	
	22.	Section 9 – Water resources	1. Important for the Environmental Appraisal to document and detail the existing water supply arrangements (source, distribution and volumes etc.) for each of the development areas and set out proposals for the variation of these volumes. Uses and leakage rates will also be required for all sources of supply, regardless of whether they are currently licensed or exempt. The assessment should then consider the impacts of future demand against the current baseline conditions. 2. Any proposed test pumping should be carried out in consultation with the Environment Agency, and are likely to require Section 32(3) Consents. The timing of such testing may have significant implications for completion of the assessment.	1. Noted; DIO to provide existing information (source, distribution & volumes etc.). 2. Unlikely testing will be undertaken to inform the Masterplan assessment. Testing may take place in the future as individual developments are taken forward.
	23.	Section 9 – Water resources	We note that the baseline section of the scoping document does not appear to consider the impacts on water quality. We consider this to be a significant omission.	Noted and agreed – the scoping document (in the same chapter) does highlight potential water quality impacts and a water quality baseline will certainly be presented within our assessment.
	24.	Section 9 – Water resources	Discharge of foul water during the operational phase, either to ground or to surface water will require consideration of both local and catchment scale impacts within the Environmental Appraisal. This will need to incorporate consideration of nutrient loadings, especially where receiving watercourses (or downstream receiving watercourses) are already failing phosphorous standards. All development will need to comply with the agreed Hampshire Avon Nutrient Management Plan.	Agreed.
	25.	Section 9 – Water resources	The author should be aware that a condition of the abstraction at Tidworth is that water is discharged within the same catchment. Any proposals that include out-of-catchment transfer (for example to Perham Down) will need to incorporate provision to return this water. The	Noted.

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			assessment will need to address the impact of increased discharge from Tidworth STW on the receiving water course with particular reference to the Cholderton Safeguard Zone.	
	26.	Section 9 – Water resources	The assessment should model historic, current and proposed discharges and consider whether proposed discharges exceed the conditions of existing permits. The impacts of this must be assessed with a view to seeking variations in permit conditions.	Noted; this will be taken into account in the groundwater modelling.
	27.	Section 9 – Water resources	We note that consideration of pollution from fuels and vehicles during construction works has been scoped out on the basis that best practice controls are sufficient. We suggest that risks to the environment could be further minimised by considering whether particular locations are more acutely sensitive than others (for example close to a supply borehole) and if so, if fuels or chemicals used during construction could be reasonably stored elsewhere.	Noted.
	28.	Section 9 – Water resources	The presence of groundwater Source Protection Zones (SPZs) across the district may constrain development proposals and influence the design of sustainable drainage schemes etc.	Noted.
	29.	Section 9 – Water resources	The water resources assessment needs to consider the entire water cycle and not simply concentrate on water supply. The impacts of this proposed development on the Avon SAC must be appropriately considered and mitigated.	Noted and agreed. This was always the intention but the text of the IER has been updated to make this clearer.
	30.	Section 9 – Water resources	Reference to the reliability of new water resources in the catchment is taken from the CAMS but it should be noted that it would be affected by the climatic conditions each year. Therefore in dry years any new resource would be less reliable than in wet years. As mentioned elsewhere, the groundwater model is a more reliable tool and we would want to use it to assess the impact of abstraction.	Noted and it is proposed to use the regional groundwater model for the OEA.
	31.	Section 9 – Water resources	The document makes reference to increased demand in the future due to the rebasing activities. Prior to any increase in abstraction being sanctioned, issues related to	Noted.

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			excessive leakage at MOD camps would need to be addressed. Leakage volumes in excess of 30-35% would be questioned.	
	32.	Section 9 – Water resources	As part of assessing the abstraction pressures of the MOD on the catchment we would want to have confidence in the metering of abstraction (location of meters, accuracy, extent etc.) and be confident in the reading and recording of data from these meters.	Noted.
	33.	Section 9 – Water resources	Assessment of the impact on (ground) water quality from construction phase earthworks resulting from disturbance of contaminated soils (page73) has been scoped out. This appears to be contrary to the final paragraph of section 11.1. We consider it premature to scope out this issue without benefit of at least a Phase 1 type investigation to support this assumption and we are pleased to see that LQAs are in progress. The issue should therefore be scoped in.	Agreed; a review of the phase 1 survey data will be undertaken as part of the OEA.
	34.	Section 11 – Soils	Our previous experience of Land Quality Assessments (for Warminster Garrison) highlighted difficulties with the reporting structure which we consider prevented external parties from following a clear auditable assessment process for each development site. Frequently Land Quality Assessments were prepared that included separate parcels of land within a variety of separate barrack sites and included a change of naming conventions used to identify sites from that used within preliminary risk assessments. This resulted in a confusing array of documents being submitted to discharge planning conditions. We suggest that Land Quality Assessments for this development are prepared for specific barracks and that they clearly show the locations of the proposed development in relation to potential sources of contamination.	Noted; preparation of LQAs is not part of the OEA scope, however their review and preparation of a risk assessment is.
	35.	Section 11 – Soils	Similarly the construction phase land table does not include assessment of the risks associated with the presence of contamination. We require this to be scoped in. In addition the presence of SPZs across the district may constrain development proposals and influence the design	Noted (see Ref. 33)

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			of sustainable drainage schemes etc.	
	36.	Section 11 – Soils	**Perham Down** Within the report the need to assess the site(s) for contamination is acknowledged although has been scoped out of the EIA. Given the historical use of the site, contamination is likely to be present. We would expect any planning application made for this site to be accompanied by a desk study and preliminary risk assessment as a minimum. Sufficient information should be provided to demonstrate that the risks associated with contamination are understood and that these risks can be mitigated.	Noted (see Ref 34).
	37.	Section 9 – Water resources	We are pleased to see that the supply of water has been scoped in and that a study to understand the impacts from any increase in abstraction will be undertaken. Please note that if you are planning your own abstraction in future at Perham Down, there is limited water available for 50% of the time in the Test & Itchen CAMS in this catchment, unless it can be shown that most of it will be subsequently discharged to the chalk, (for example at Ludgershall STW).	Noted.
	38.	Section 9 – Water resources	There is no discussion about foul water disposal within the main part of the report, although we note that impacts to groundwater quality from surface water and foul water have been scoped in within the table. We believe that disposal of foul water at the Perham Down site is a key consideration and needs to be included in the EIA. The applicant will need to demonstrate there are suitable foul water disposal options. If the applicant wants to discharge to ground a permit will be required from us. If this is the preferred option we strongly recommend that they contact us at early opportunity to discuss the proposals (including the design and risk assessment). If the applicant is connecting to a mains foul sewer, the applicant should confirm with the services provider that there is capacity available.	Noted; the whole water cycle will be considered and the text of the IER has been updated to make this clearer.
	39.	Section 9 – Water resources	Regarding surface water disposal, we would support the use of SUDs at this site providing they are able to demonstrate that groundwater will be protected by incorporating pollution prevention measures into the design. Infiltration systems should not be located where	Noted; recommendations for SuDS will be made where possible based on the available design details and ground condition data.

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			contamination is present. This will be informed by site investigations.	
	40.	Section 9 – Water resources	The site is located above the Lewes Nodular Chalk Formation and is within the groundwater SPZ3 for the Cholderton Boreholes, Thruxton Hill and Compton supply. The sensitivity of groundwater and potential risks from pollution should be a consideration within the EIA.	Noted and agreed.
	41.	Section 11 – Soils	**Pollution Potential of Stored Heating Oil** From our records a number of oil pollution incidents have occurred historically. The area has a number of communal heating oil tanks. We ask that checks are made for the presence of any underground heating oil pipes. Checks should also be made on individual and communal oil tanks to ensure they are empty before removal. All new oil storage facilities must comply with relevant CIRIA Regulations for oil storage.	Noted; information will be sought from DIO and Aspire to inform the OEA.
	42.	Section 7 – Ecology and nature conservation	P 26 - Baseline data Requirements An *ecological survey* is required prior to the development of detailed plans, to enable an assessment of the level of risk posed by the development. The detailed design, construction, mitigation and compensation measures should be based on the results of surveys carried out at an appropriate time of year relevant to the species/habitat, by a suitably experienced surveyor using recognised survey methodology. The survey and risk assessment should: • identify any rare, declining, protected or otherwise important flora, fauna or habitats within the site; • assess the importance of the above features at a local, regional and national level; • identify the impacts of the scheme on those features; • demonstrate how the development will avoid adverse impacts;	Noted; appropriate surveys will be undertaken - based on seasonal constraints, recommendations for further surveys will be made as appropriate.

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			• propose mitigation for any adverse ecological impacts or compensation for loss; • propose wildlife / habitat enhancement measures; • consider otters and fish; • propose post-project appraisal, management plans and management responsibilities with details of how biodiversity enhancement will be incorporated into the development and maintained over the long term; Identify the impacts to the biological / hydromorphological quality elements at risk of deterioration / RBMP objectives.	
	43.	Section 9 – Water resources	**Flood Risk** The developments should include sustainable drainage (SUDS) to manage surface water runoff. SUDS seek to mimic natural drainage systems and retain water on or near to the site, when rain falls, in contrast to traditional drainage approaches, which tend to pipe water off site as quickly as possible. SUDS offer significant advantages over conventional piped drainage systems in reducing flood risk by reducing the quantity of surface water run-off from a site and the speed at which it reaches watercourses, promoting groundwater recharge, and improving water quality and amenity. The range of SUDS techniques available means that a SUDS approach in some form will be applicable to almost any development.	Noted; recommendations for SuDS will be made where possible based on the available design details and ground condition data
	44.	Section 9 – Water resources	*Larkhill* All sites appear to be in Flood Zone 1 (lowest risk). Given the size of the sites a Flood Risk Assessment (FRA) will be required in accordance with the National Planning Policy Framework (NPPF).	Noted; though preparation of FRAs is not part of the OEA scope.
	45.	Section 9 – Water resources	*Bulford* Most sites appear in Flood Zone 1, although the B15 site appears to encroach within Flood Zones 3 & 2. Hence the sequential approach should be applied whereby all built development is steered away from Flood Zones 3 & 2, and directed to Flood Zone 1 in accordance with the NPPF. As above, given the location of some of the sites a FRA will be required.	Noted; though preparation of FRAs is not part of the OEA scope.

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	46.	Section 9 – Water resources	*Pernham Down & Ludgershall* As above, some of the sites may require a FRA.	Noted; though preparation of FRAs is not part of the OEA scope.
	47.	Section 9 – Water resources	*Tidworth* Some of the sites are in Flood Zone 1; however there are a number which appear to lie within Flood Zones 3 & 2. Based on SPTA Master Plan sites T2, T3, T5, T6a & T10, either wholly or in part, appear to lie within Flood Zones 3 & 2. As per the NPPF the Sequential Test / sequential approach should be applied. Inappropriate development should be steered away from areas at risk of flooding. Flood risk assessments will be required in accordance with NPPF.	Noted; though preparation of FRAs is not part of the OEA scope.
Natural England	48.	Section 4.2 (p.11)	Potential Environment Impacts It should be acknowledged that impacts from vehicles and training activities e.g. digging in, are not all negative on the chalk grassland and natural tracks; indeed a 'bare ground cycle' is needed, providing areas that are exposed to bare chalk then allowed to recover. In other words, infrequent disturbance is often beneficial, whereas a regular trawl of vehicles, over increasing areas, will represent a loss. The Favourable Condition Tables for Salisbury Plain SSSI set both upper and lower limits for bare ground cover (2-4%). Overall, now that a network of stone tracks is in place on the Plain, it is not a problem if vehicles go off-track here and there. Similarly, live firing impact craters, created at about the current rate; provide a valued succession of bare chalk through to regenerated short turf with rare plant species.	Noted; this will be considered when evaluating the likely impacts.
	49.	Section 4.5 (p.14)	Methodology for Assessing Future Training Requirement Natural England is pleased to see the 'conceptual approach' to reviewing the training baseline, understanding proposed ABP and future training changes, reviewing current allocation, management and monitoring of training, and 'establishing a detailed programme and scale of management techniques for planning military activity,' including establishing indicators of military training activity.	Noted.
	50.	Section 5.4 (p.18)	Mitigation hierarchy As per Habitats Regulations, please ensure that the report	Noted.

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			distinguishes between 'mitigation' and compensation.	
	51.	Section 6 (p.20)	Scoping the Appraisal Whilst we welcome reference to the guidance notes, we would stress that these do not provide an exhaustive list of considerations and do not provide sufficient detail for the 'operations/terrestrial ecology' section. In addition, the EA website lists 'scoping the environmental impacts of sewage treatment works' and 'scoping the environmental impacts of discharges to surface water'; we advise that these are included. This is a serious omission from the scoping and the impact from any increase in the discharge of foul water during the operational phase, either to ground or to surface water, on phosphorus levels to the River Avon will need to be assessed. Any impacts on the River Avon SAC must be appropriately considered and mitigated.	Noted and agreed; the additional EA scoping guidance documents were referred to during the scoping (though this was not recognised in the report) and will be used to inform the scope of assessments.
	52.	General	There also appear to be a few inconsistences in the OEA, e.g. the need/or not for test drilling boreholes during the construction phase and their impacts; the impacts of the proposed access and river crossing on channel bed and bank stability.	Noted; impacts and recommendations for further work will be informed by baseline surveys and discussion between specialist environmental disciplines.
	53.	Section 7 – Ecology and nature conservation	In addition to potential impacts already listed in the OEA scoping report, we would like the following points scoped in: 1. Chalk grassland loss and fragmentation – high frequency use of military vehicles off stone tracks (negative impact). 2. Chalk grassland disturbance and bare chalk ground creation – low frequency use of military vehicles off stone tracks (positive impact). 3. Chalk grassland disturbance and bare ground creation – live firing creating impact craters (positive impact at current levels). 4. Fairy shrimp temporary pool creation – use of military vehicles off stone tracks (positive impact at current levels). 5. Lack of or reduced grazing of chalk grassland – military exercise preventing use of temporary grazing pennings (negative impact).	Noted; impacts will be considered in relation to these factors and on the basis of the proposed activities / development.

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			6. Stone-curlew distance – use of military vehicles close to/over stone-curlew plots. 7. Stone-curlew disturbance – troops on foot close to/over stone-curlew plots. 8. Loss and fragmentation of chalk grassland – new infrastructure e.g. buildings. 9. Loss of bare chalk grassland – new infrastructure e.g. stone tracks 10. Disturbance/loss/fragmentation of chalk grassland – new infrastructure attracts increased military vehicle use in vicinity. 11. Stone-curlew disturbance – new infrastructure attracts increased military vehicle use and troops on foot in vicinity. 12. Stone-curlew disturbance – new infrastructure attracts increase general public assess (and dogs). 13. Stone-curlew disturbance – additional houses nearby increase general public access (and dogs). 14. Fragmentation of open landscape affecting SPA and SSSI bird populations – plantations. 15. Winterbourne and riparian habitat change – reduced groundwater levels due to increased abstraction (negative impact). 16. Winterbourne and riparian habitat loss and fragmentation – new access track across the Nine Mile River (negative impact). 17. Winterbourne and riparian habitat loss and fragmentation – high frequency use of military vehicles off stone tracks (negative impact). 18. Disturbance /loss/fragmentation of winterbourne and riparian habitat – new infrastructure attracts increased military vehicle use in vicinity. 19. Great crested newt habitat loss and fragmentation – reduced groundwater levels needed to support the habitat due to abstraction (negative). 20. Great crested newt habitat loss and fragmentation – new access track across the Nine Mile River (negative impact) and high frequency use of	

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			military vehicles off stone tracks (negative impact). 21. Great crested newt population change – reduced groundwater levels due to abstraction impacting on the period ponds contain water and therefore ability of species to complete their life cycle (negative). 22. Great crested newt disturbance – use of military vehicles close to/over great crested newt habitat (negative) 23. Low Flows in the River Avon and Bourne – reduced river flow effecting the notified habitats and species that the River Avon supports due to increased abstraction (negative). 24. Increased phosphate loading to the River Avon and Bourne – reduced water quality, and in particular increased levels of phosphorus, effecting the notified habitats and species the River Avon supports due to additional housing creating new foul discharge requirements (negative impact) Please note this list is not exhaustive and you should refer to the SSSI citations and the Conservation Objectives for the European Sites for the respective sites when considering potential impacts on designated habitats and species.	
	54.	Section 7.3 (pg.26)	An understanding of the existing water supply arrangement (in particular source and volume) for each of the development areas and the impact on designated habitats and species is required, regardless of whether they are currently licensed or exempt. Groundwater levels at Bulford and Tidworth, in particular, are already being affected by abstraction and we are concerned about the potential impacts on protected sites and species. Any increase in abstraction has the potential to detrimentally affect flow in the River Avon Special Area of Conservation (SAC) and River Avon System Site of Special Scientific Interest (SSSI), water levels in ponds that support a significant population of great crested newt (a European protected species). Impacts will need to assessed both alone and in-	Noted; this will be considered as part of the water resources assessment and impacts upon ecological resources identified.

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			combination with other abstractions. Any impact of abstraction on the Nine Mile River which supports winterbourne and chalk stream habitat (a priority for conservation under the England Biodiversity Action Plan) will also need to be mitigated.	
	55.	Section 9 – Water resources (p.34-35)	This section focuses on the physical environmental effects. Potential effects on habitats and species are also relevant here – and, in particular notified features and protected species.	Noted; where possible, impacts upon ecological resources will be identified based on findings of the water resources assessment.
	56.	General	Natural England would recommend that the scoping exercise should consider alternatives. For example alternative options to a 'potential new backdoor access to Bulford Camp requiring a crossing of the Nine Mile River.' Avoiding sensitive habitats completely would minimise risk and negative impacts on the environment.	Noted; however the selection of sites is being undertaken by the Masterplan team. Findings of the environmental surveys are being made available to the team and a summary of the alternatives studied and their environmental effects will be provided in the OEA.
	57.	General	Natural England has already raised the issues relating to abstraction with the MOD, including in our response to the Phase 2 report dated 23 October 2013. Abstraction and its associated impacts may be a major constraint and will need full consideration in the HRA.	Noted, and will be addressed in the HRA.
Hampshire County Council	58.	Section 7 – Ecology and nature conservation (p.21)	Baseline Environmental Conditions Should refer to locally designated sites as well as nationally designated sites. Whilst the locally designated sites are referred to under 'value of receptors' they do not appear in the descriptive list at the beginning of the section. It is suggested that the descriptive list also includes local designations i.e. County Wildlife Sites (CWS).	Noted; CWSs will be considered in the OEA, though they have not been listed in the IER for reasons of space.
	59.	Section 7 – Ecology and nature conservation	It is advised that data be gathered about common amphibian species. The Wiltshire local record office should be contacted as they are likely to have more up to date information on this than Natural England.	Noted.
	60.	Section 7.3 (pg.26)	Proposed Impact Evaluation Criteria – magnitude of impact (page 26). The value being placed on the landtake of a habitat or feature is concerning. The loss of <5% is assessed as low. It is questioned whether this would meet the EIA	Noted and agreed; the evaluation criteria have been revised based on this observation.

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			Regulations significance tests. In addition the values with respect to species do not appear to reflect the need to have regard to the conservation status of species.	
	61.	General	Overall, the assessment needs to ensure that there are cross links between the water and environment section, noise and vibration and community/pedestrian effects, as these will have impacts that need to be considered here. The impacts on pedestrians/equestrians also need to be assessed in terms of any displacement from current areas onto other areas that may be more sensitive to disturbance or habitat damage.	Noted and agreed. This is however already covered in the chapter on cumulative effects and has also been highlighted in relation to the Habitats Regulations Assessment. This will consider the effect of water abstractions and increased visitor pressure on the SAC.
Forestry Commission	62.	Section 7 – Ecology and nature conservation	Main concern is the sacrifice of woodlands as mitigation for loss of chalk grassland. There has been a practice within Defence Estates to offer up woodland removal as part of a planning condition even though the Forestry Commission has, on a number of occasions pointed out that in their opinion there is no legal basis for this. Felling can only be carried out under planning permission where *the felling of trees is immediately required for the purpose of carrying out the development*. This does not include trees off site.	Noted; if woodland removal is suggested as mitigation it will be done in consultation with FC and NE.
	63.	Section 7 – Ecology and nature conservation	Removal of woodlands (deforestation) is covered by the Environmental Impact Assessment (Forestry) (England and Wales) Regulations 1999, and the Felling Regulations as covered by the Forestry Act 1967 as amended. By agreeing to remove woodlands before an opinion/or permission has been sought under these regulations could put both organisations in a difficult position.	Noted; as above.
	64.	Section 7 – Ecology and nature conservation	If we are to support/allow deforestation the proposal should comply with the Open Habitats Regulations, planning mitigation does not feature within these regulations. Urge you not to include woodland removal as part of mitigation measures and at the very least ensure all due processes have been followed before committing yourself to any woodland removal.	Noted; this will be discussed further with FC.
Wiltshire Heritage	65.	Section 8 – Archaeology and cultural heritage	Main concern is that the Scoping Report fails to emphasise the imperative to undertake archaeological assessments	Noted; see Ref. 6.

Consultee name	Ref.	Report section	Comment	Response to comment
			and evaluations at an early enough stage not only to inform the Environmental Statement but also the site assessment and master planning stages. Understand from discussions at recent meetings that this work is going to be commissioned, but there is a need to recognise this within the Scoping Report. Additionally, the Report rightly has a focus on Scheduled Monuments but fails to bring out the potential and importance of undesignated heritage features, of which there are thousands on Salisbury Plain. Information on the undesignated features are held on Wiltshire's Historic Environment Record (HER) which needs to be consulted when the desk assessments are being undertaken. I understand that the HER has not yet been contacted to supply any data.	
	66.		I was expecting the Environmental Statement would contain an assessment of the potential environmental impacts of the increase in Army training on the Plain. However, this does not seem to have been included in the Scoping Report.	Where possible, cumulative effects will be identified based on the information available in respect of Army training, although this is not specifically part of the ABP. It should be noted that the Outline Environmental Appraisal (OEA) is not a statutory document; site specific EIA will be undertaken as required following the appraisal, to support specific planning applications, and will be informed by the findings of the OEA.
	67.		Stress the need to include in the Report that a detailed archaeological mitigation strategy will be written into the Environmental Statement. The results of all of the archaeological evaluations and assessment should feed into the development of this strategy.	Noted; as stated above, the OEA is not a statutory document but will include mitigation as far as is possible based on the level of detail available.