AWE plc

Strategic Sustainability Appraisal of the Site Development Context Plan

15 November 2005

RPS

Contents

Abbreviations

SDCP:	Site Development Context Plan
EIA:	Environmental Impact Assessment
ES:	Environmental Statement
SA:	Sustainability Appraisal
SSA:	Strategic Sustainability Appraisal
WBC:	West Berkshire District Council
BAT:	Best Available Technique
BPEO:	Best Practicable Environmental Option

1 Introduction

1.1 In a ministerial statement of the 19 July 2005, Secretary of State for Defence, John Reid, said:

"The Government made clear last year its commitment to maintaining the effectiveness and safety of the nuclear deterrent including making the necessary investment in the facilities at the Atomic Weapons Establishment at Aldermaston and Burghfield.

To that end agreement has been reached with AWE Management Limited (AWE ML) to take forward a programme of investment in sustaining key skills and facilities at the Atomic Weapons Establishment. This will include the provision of necessary extra supporting infrastructure. Local Planning Authorities will be consulted on this work in the normal way, under the provisions of the Planning and Compulsory Purchase Act 2005.

The purpose of this investment of some £350 million over each of the next three years is to ensure that we can maintain the existing Trident warhead stockpile throughout its intended in-service life. In the absence of the ability to undertake live nuclear testing given that the UK has signed and ratified the Comprehensive Test Ban Treaty, it is necessary to invest in the facilities at AWE which will provide assurance that the existing Trident warhead stockpile is reliable and safe."

1.2 This important announcement sets the framework for this report. The investment in replacement buildings and infrastructure is significant and will bring with it many challenges. These will include, the appropriate location of facilities from security, economic, functional and environmental aspects and the logistics of a major construction programme.

1.3 In order to assist the AWE Site Development Team in this task, RPS were asked by AWE plc to prepare a Site Development Context Plan (SDCP) in line with the government announcement.

1.4 The SDCP is designed to achieve two objectives. First provide AWE plc with the overall context within which the development of Aldermaston and Burghfield will be set and, second, allow key stakeholders to have an overall picture of the future development as the necessary documentation is prepared and submitted for projects to achieve necessary consents and in particular planning approval.

1.5 To accompany the SDCP, RPS has also prepared a 'strategic sustainability appraisal' (SSA) the purpose of which is to identify potential impacts or issues (whether beneficial or adverse) on the environment and those who live and work around the two sites arising from the SDCP. It will also demonstrate how AWE plc will work to

address and manage these issues. The SSA will be updated on a regular basis and will accompany any supporting documentation and any applications for authorisations including planning.

Report Structure

1.6 Section 2 describes the three-stage approach to the SSA. Section 3 describes in more detail how the appraisal has been undertaken by reference to the Sustainability Appraisal Handbook for the MoD Estate. Section 4 sets the context for the SDCP and describes the baseline information upon which the appraisal has been undertaken. Section 5 describes the how environmental matters are taken into account in developing options whilst Section 6 summarises the conclusions of the appraisal.

2 Appraisal Methodology

2.1 As mentioned in the previous section, this Strategic Sustainability Appraisal is designed to ensure that any potential environmental effects of the SDCP are addressed as early as possible in the planning cycle.

2.2 The objectives of the SSA are therefore to:

- Evaluate the environmental consequences of the SDCP.
- Provide the framework for future project level EIA.
- Integrate environmental issues at the earliest possible stage in the planning process.
- Reduce the risk of programme delay.
- Promote sustainable development.
- Promote early and constructive dialogue with key stakeholders.

2.3 The SSA comprises a three-stage process:

Stage A: Setting the Context and Establishing the Baseline

The objective of this stage is to review the baseline information upon which the appraisal is undertaken. Any data gaps have been identified and recommendations made for future surveys to fill those gaps.

Stage B: Deciding the Scope and Alternatives

The objective of this stage is to describe the factors which need to be considered when evaluating alternatives. In particular, how environmental issues are integrated into the decision making process.

Stage C: Sustainability Appraisal

The objective of this stage is to identify the potential issues, likely impacts and what actions are required to mitigate those impacts. An overall 'sustainability score' in qualitative terms is given for each theme.

2.4 The final part of the SSA process is to draw together the actions identified into a coordinated series of activities which can then be implemented in support of future planning submissions.

3 Strategic Sustainability Appraisal and the MOD Handbook

Introduction

3.1 The 'Sustainability Appraisal Handbook for the MOD Estate' (the Handbook), prepared by Defence Estates Strategy and Policy Team, has been produced to help MOD project managers, decision-makers and contractors to fulfill the MOD Policy (July 2000) to:

'carry out environmental policy appraisals of all new or revised policies and equipment acquisition programmes, and environmental impact assessment of all new projects and training activities'.

3.2 It is also MOD Policy to comply with the Government's Sustainable Development Strategy, and therefore the mandates have been combined into "Sustainability Appraisal".

3.3 The Handbook defines Sustainability Appraisal as:

'a process that allows Sustainable Development objectives to be integrated into policies, programmes, projects, activities and decisions at an early stage. Appraisals are designed to help identify potential environmental, social and economic impacts and issues as early as possible, allowing alternative solutions or mitigation measures to be explored if there are negative impacts. Positive impacts and opportunities for performance enhancement can also be identified and highlighted. An appraisal methodology.....allows sustainability issues to be considered in a systematic, transparent and auditable way'.

3.4 The methodology in the Handbook is to assess the 'sustainability' of the project based on 15 themes, as described below. The themes have been identified based on the UK Strategy for Sustainable Development 'A Better Quality of Life (1999)' which interprets sustainability as *'promoting a better quality of life, now and for future generations, reflecting four main pillars of objectives*:

- *Social progress that meets the needs of everybody.*
- *Effective protection of the environment.*
- *Prudent use of natural resources.*
- Maintenance of high and stable levels of economic growth and employment'.

3.5 The appraisal methodology has been designed to allow the appraisal to be undertaken at different stages of the project, preferably early in the decision making process so that there is an opportunity to influence the eventual outcome. As stated

in the Handbook '*appraisals constitute an initial, high-level screen to clarify issues and topics requiring further assessment*'.

Sustainability themes

The 15 sustainability themes are as described below together with a brief note of the issues covered within them.

Theme A: *Climate Change and Air Quality* – covering Global Warming, ozone loss and air pollution by gases and particulates;

Theme B: *Travel and Transport* – covering congestion, emissions, fuel use, and transport infrastructure;

Theme C: *Energy Consumption* – covering fossil fuel reduction, alternative and renewable resources, energy efficient technology;

Theme D: *Noise and Vibration* – covering disturbance from vehicles and training or construction activities;

Theme E: *Water and Drainage* – covering natural hydrological processes as well as water resources, water contamination and disposal of effluent;

Theme F: *Waste* – covering minimisation, recycling, recovery and reuse, as well as special waste;

Theme G: *Land, Buildings and Construction Materials* – covering brown- /green-field development, refurbishment/construction impacts, sustainable design;

Theme H: *Geology and Soils* – covering land contamination, geological stability and their use as resources;

Theme I: *Biodiversity and Nature Conservation* – covering ecological resources, protective designations, conservation of biodiversity;

Theme J: *Archaeology and Historic Environment* – covering field archaeology, listed buildings, protective designations, preservation of heritage;

Theme K: *Landscape and Townscape* – covering rural estate management, sympathetic building design, cultural and recreational resources;

Theme L: *Health, Safety and Crime* – covering prevention measures, building design, estate layout and working practices;

Theme M: *Communities and Social Values* – covering internal communities, public engagement and consultation, quality of life and equal opportunities;

Theme N: *Infrastructure and Amenities* – covering provision of staff facilities, public access to MOD sites, MOD use of public facilities;

Theme O: *Economy and Employment* – covering procurement, investment in local economies, jobs, education and training.

3.6 A checklist is provided in the Handbook for each theme, in order to identify the key impacts, both positive and negative, for the project. Each checklist sheet also has a section for allocating a sustainability score which assesses the extent to which the project supports or contradicts the sustainability objectives for that theme ranging from '*A – Good proactive enhancement in sustainability performance to E – Significant negative impacts, especially ones that cannot be mitigated*'. The sustainability objectives are set by Defence Estates. There is no expectation that objectives will be met fully by individual projects – the objectives are set out in broad terms by Defence Estates and the purpose of the appraisal is to describe how well the project can be expected to meet them when taking into account the identified Actions.

3.7 A summary appraisal matrix collates the findings from all the checklists for the 15 sustainability themes and includes an 'Action Required' column which is used to summarise any further assessment or mitigation needed and how this would raise the score to neutral or positive.

3.8 A summary report is compiled to accompany the matrix and checklists. The report should give a brief description of the project or proposal and summarise the main issues, impacts and actions required, along with potential obstacles or consequences of not undertaking recommended further work.

3.9 The purpose of the Sustainability Appraisal is to allow decisions to be informed by environmental, social and economic factors. Therefore, the appraisal results should be communicated to decision makers and there must be an opportunity created in the decision-making process to allow outcomes to be influenced where recommended. Implementation of the 'Actions Required' is therefore critical to ensure value of the Sustainability Appraisal.

4 SSA Stage A: Setting the context and establishing the baseline

Setting the Context

4.1 AWE Aldermaston is a former World War II airfield, situated on a gravel ridge running approximately east to west on the southern slope of the Kennet Valley. The site has an early history as a medieval deer park but was sold in 1939 on the death of the owner and converted to a fully operational airfield by July 1942. Following the end of the war, the site lay idle for a while and was finally bought by the Ministry of Supply in order to be converted to the base for Britain's nuclear deterrent. It became the Atomic Weapons Research Establishment in 1953. AWE Burghfield was a former Royal Ordnance Factory.

4.2 At AWE (A) the former layout of the airfield is still very clear in the footprint of the site. The three former runways survive as Halstead Road, Woolwich Road and Griffin Road, three of the original hangars remain as building C3.1, F12.5 and F13.1 and the former control tower (D7) also survives. In the style of the office buildings, both AWE (A) and AWE (B) are typical of Government establishments of the1940's, 1950's and 1960's whilst the functional facilities give, particularly to AWE (A), the appearance of a medium/light industrial complex.

4.3 The very high level of security required at AWE inevitably means that the baseline condition divides between the external environment and that within the wire. In terms of monitoring, AWE plc monitors their environmental impact outside the wire insofar as it relates to both their obligations under the Radioactive Substances Act (1993) and other regulatory requirements, for example Environment Agency discharge consents.

4.4 As discussed earlier, this report combines three stages A – C with Stage C comprising an assessment which follows the procedures documented in the Sustainability Appraisal Handbook for the MOD Estate. A Sustainability Appraisal involves identifying potential issues, impacts and actions, which are captured on a checklist matrix for 15 'themes'.

These themes are:

A. Climate Change and Air Quality
B. Travel and Transport
C. Energy Consumption
D. Noise and Vibration

E. Water and Drainage
F. Waste
G. Land Buildings and Construction Materials
H. Geology and Soils
I. Biodiversity and Nature Conservation
J. Archaeology and the Historic Environment
K. Landscape and Townscape
L. Health, Safety and Crime
M. Communities and Social Values
N. Infrastructure and Amenities
O. Economy and Employment

4.5 The baseline information has been organised according to these themes. Each theme has been sub-divided into the external (site setting) environmental baseline and internal (MoD) baseline. An objective has been described for each objective. These objectives are taken from the Handbook and have been set by Defence Estates.

Establishing the Baseline

Theme A: Baseline for climate change and air quality

Overall objective: ***Minimise greenhouse gas emissions and pollution of air with gases and particulates.***

External Baseline

4.6 The Air Quality Strategy for England was published in January 2000 and provides a framework for reducing air pollution at national and local levels from a wide range of emission sources.

4.7 Air quality objectives have been derived from health-based standards recommended by the Government's Expert Panel on Air Quality Standards (EPAQS), all of which have target achievement dates ranging from 2003 to 2008. Ozone is not included as one of the eight local air pollutants to which the standards are related, and is therefore not covered by the regulations for the purposes of air quality management.

4.8 To carry out an air quality review and assessment, the Government recommends a three-stage approach. Accordingly, West Berkshire District Council carried out a Stage 2 Review and Assessment Report, which recommended proceeding to Stage 3

with respect to the 2005 objectives for nitrogen dioxide (NO_2) for three road sections within the District:

- The A4 through Newbury and Thatcham.
- The A339 in Newbury.
- The M4 motorway across West Berkshire.

4.9 The recommendations of the Stage 3 report were that NO_2 levels were unlikely to exceed national objectives at residential properties and that consequently West Berkshire need not declare an Air Quality Management Area for NO_2 in the vicinity of the A4, M4 or A339.

4.10 As far as air quality is concerned, it is only traffic related pollutants that have caused concern adjacent to the major roads in West Berkshire and as such no Air Quality Management Area has been declared in the vicinity of AWE (A) or AWE (B).

4.11 AWE plc undertakes an environmental monitoring programme including air which is monitored continuously by high volume air samplers (HVAS) around the perimeter fences and at various distances from the site. The monitoring programme is supported by local monthly rainwater collection and measurement and passive air shades. The HVAS also monitors for Lead and Be on external and internal systems. There has been one No_x survey carried out by WS Atkins details of which are reported in the 2005 Site Setting Document commissioned by AWE plc. The survey was undertaken in 2004 and took account of transport contributions.

Internal Baseline

4.12 Monitoring within the wire is for both radioactive substances as part of the obligations of AWE plc under the Radioactive Substances Act (1993) and requirements under regulatory regimes such as IPPC. For example, internal stacks are monitored for combustion products.

Theme B: Travel and Transport

External Baseline

Highway Network

4.13 The AWE Aldermaston site is bounded by the A340, and the unclassified links Church Road, Red Lane and Reading

Overall objective: ***Minimise amounts of travelling required, particularly via roads and private cars.***

Road. The key strategic links in the vicinity of the Aldermaston site are the M4, A4 and the A340. The A4 provides a connection between Newbury / Thatcham and Reading, as well as Junction 12, M4 at Theale. It also provides a connection with Junction 13, M4, to the north of Newbury, via the A339. The A340 provides a connection between Basingstoke / Junction 6, M3 (via A339), and the A4.

4.14 The key junctions in the vicinity of the AWE Aldermaston site are:

- A340 / Reading Road – one-way gyratory (Falcon Gyratory).
- A340 / Church Road priority junction (Aldermaston).
- Heath End roundabout.
- Soke Road / Reading Road roundabout.

4.15 The AWE Burghfield site is bound by The Mearings (a private road) and the unclassified links Palmers Lane, Rider's Lane and Burnthouse Lane.

4.16 The key strategic links in the vicinity of the Burghfield site are the M4 and A33. The A33 provides a connection between Basingstoke and Junction 6, M3 (via A339), and Junction 11, M4.

4.17 It should be noted that there are vehicle weight, height and width restrictions on various roads surrounding both AWE sites.

Traffic flows

4.18 Due to seasonal variation in traffic flows it has not been possible to collect up to date traffic flow data for key external links in the vicinity of AWE Aldermaston and Burghfield. This data was collected during October 2005. However, based on local knowledge, historic traffic data provided by the Statutory Authorities, and traffic data collected previously by AWE plc, it is possible to comment as follows:

- The busiest section of road at AWE, Aldermaston is the A340, between Heath End roundabout and the Falcon Gyratory. This carries in the region of 1900 – 2100 vehicles per hour (vph) in the peak hours.

- The Heath End roundabout is the most heavily congested junction in the vicinity of the Aldermaston site. In peak periods, delays occur regularly, particularly on Paices Hill.

- Traffic flows on roads surrounding the AWE Burghfield site are generally light and highway capacity issues are unlikely to be an issue.

- The A340 between Tadley and Basingstoke carries significant volumes of traffic throughout the day. Peak hour delays are not uncommon.

Passenger Transport

4.19 AWE Aldermaston has a number of bus services in the vicinity the most frequent being Service 1. This operates every 20 minutes from Basingstoke and approximately 1000 staff and contractors live within walking distance of the route.

4.20 Bus services 143, 148 and 149 pass AWE Burghfield and offer a reasonable individual service, approximately every 30 minutes, to and from Reading. However, given that they operate along the same route between Reading and The Mearings, the combined effect of the services improves frequency. In addition, the services offer a bus connection to Burghfield Common and the 143 offers a bus connection to Mortimer, and Tadley.

4.21 The AWE Aldermaston and Burghfield sites are connected by the 148 service.

4.22 Aldermaston and Theale railway stations are located approximately 5 and 11km from the AWE Aldermaston site respectively. Aldermaston station is served by 4-5 services, and Theale station is served by 6-7 services, in each direction during peak periods.

4.23 Theale, Mortimer and Bromley railway stations are located approximately 5, 5 and 12km from the AWE Burghfield site respectively and are served by half hourly services in each direction throughout the day.

Cycling / Walking

4.24 Existing cycle / footway routes in the vicinity of the Aldermaston site are generally poor. Footways are discontinuous and controlled crossing facilities are limited.

4.25 Existing cycle / footway routes in the vicinity of the Burghfield site are also poor, with no dedicated facilities being provided.

4.26 It is generally accepted that commuters will walk up to 2km and cycle up to 5km. At least 900 and 1050 staff / contractors based at Aldermaston live within these walk and cycle distances of the site respectively. In contrast only 3 and 77 staff / contractors based at Burghfield live within those walk and cycle distances of the site respectively.

Road Safety

4.27 The road safety record on the roads surrounding the Aldermaston site is poor with four fatalities occurring on the roads surrounding the site in the past five years.

4.28 Numerous personal injury accidents, including a fatality, have also occurred on the Burghfield Road in the vicinity of the Burghfield site during the past five years.

Proposed Highway Improvements

4.29 WBC is currently designing improvements to the Falcon Gyratory. However, the designs are currently unavailable for comment.

4.30 A major junction improvement is proposed for Junction 11, M4. However, a Public Inquiry has been held into financing the scheme and the outcome of this will determine whether the junction improvement goes ahead. If it goes ahead, work is unlikely to commence before 2007 and will not be completed before 2009. Work could therefore conflict with construction activities at Burghfield and Aldermaston. WBC has also recently commissioned a study of the A4 between the M4 and Thatcham specifically to address freight issues.

Internal baseline

Access Strategy

4.31 The AWE Aldermaston site is currently accessed via the Main Gate, West Gate, Boiler House Gate and Falcon Gate. The Main Gate and West Gate are open 24 hours a day whilst the Boiler House Gate is only open during AM and PM periods. The Falcon Gate is restricted to pedestrian / cycle access and is only open during AM and PM peak periods and lunch times. There are two additional gates which are currently not used for day-to-day operational activities but have been used in the past for construction related activities.

4.32 The AWE Burghfield site is currently accessed via the Main Gate. There is an additional gate which is currently not used for operational activities but remains available for future potential uses.

Existing Travel Patterns

4.33 At AWE Aldermaston:

- 77% of vehicles entering the site are occupied by just one person.
- 84% of staff are on site on any one day
- Some 9070 gate movements occur each day, of which 1650 (18%) occur in the AM (0715 – 0815 hours) and 1350 (15%) occur in the PM (1600 – 1700 hours) peak hours respectively.
- 50% of these movements use the West Gate, 45% use the Main Gate, 4% use the Falcon Gate and 1% uses the Boiler House Gate.
- Approximately 170 (4%) staff and contractors cycle to and from AWE Aldermaston.
- 50% of travel on site is undertaken by car to save time.
- 85% of staff is prepared to use alternatives to the car for travel on site.
- At least 65% of staff and contractors travel from Basingstoke, Newbury / Thatcham, Reading and villages close to the site.

4.34 At AWE Burghfield:

- 84% of vehicles entering the site are occupied by just one person.
- 80% of staff is on site on any one-day.
- Some 1140 gate movements occur each day, of which 220 (20%) occur in the AM (0715 – 0815 hours) and 180 (16%) occur in the PM (1600 – 1700 hours) peak hours respectively.
- Less than 10 (1%) staff and contractors cycle to and from AWE Burghfield.
- 50% of travel on site is undertaken by car to save time.
- 75% of staff is prepared to use alternatives to the car for travel on site.
- At least 65% of staff and contractors travel from Basingstoke, Newbury / Thatcham, Reading and villages close to the site.

Car Parking

4.35 At AWE Aldermaston there are 3,128 official and 872 unofficial, parking spaces, giving a total of 4,000 spaces. Of these, there are on average approximately 1,500 spaces, and a minimum of 1,200 spaces, spare during that day. Despite the availability of these spare spaces, some 50% of staff have perceived difficulties finding a parking space. Parking spaces may exist but they are not located sufficiently well to meet employees requirements

4.36 At AWE Burghfield there are approximately 900 parking spaces. Of these, there are on average approximately 450 spaces, and a minimum of 340 spaces, spare during the day.

Theme C: Energy Consumption

External Baseline

Overall objective: ***Minimise total energy consumption and support the use of renewable energy rather than fossil fuel sources.***

4.37 West Berkshire Council through its Local Agenda 21 Programme of 1999 – 2001, Sustainable Development Policy and West Berkshire Sustainable Development Forum is committed to promoting the responsible and efficient use of energy to help prevent global warming.

4.38 West Berkshire also supports the Thames Valley Energy Agency, which has been set up to promote renewable energy across the Thames Valley region to both domestic households and business.

Internal Baseline

4.39 As noted above, both AWE(A) and AWE(B) are very typical of a Government establishment of the 1940's, 1950's and 1960's. Many of the buildings date from this period and are consequently poorly insulated and energy inefficient.

4.40 There is a potential with the future development of AWE(A) and AWE(B) to provide high standard modern buildings with high levels of insulation and good energy efficiency. In addition there is also a clear opportunity to have a positive impact on energy consumption and generate a higher proportion of that energy from renewable resources. Both sites have proposals for new de-centralised gas heating system that will provide major climate change benefits.

Theme D: Noise and Vibration

Overall objective: ***Minimise disturbance to people and wildlife from noise and vibration.***

External Baseline

4.41 The noise climate of AWE(A) is dominated by the major roads that run along its boundary, particularly the A340 which bounds the west and a portion of the south of the site. There is a B road that runs along the northeast and southeast portions of the site, which is also well used.

4.42 Apart from these roads there are no other significant noise sources within the area of AWE(A). AWE (B) is in open country with, similarly, no significant sources of noise.

4.43 As far as noise receptors are concerned, the only ones near to AWE(A) are a line of houses to the south-west of the site, which border a short section of the A340. These are separated from AWE(A) by the A340. AWE(B) is in a much more open situation with only a few houses in the vicinity of the site.

Internal Baseline

4.44 A survey of the noise emitted from AWE(A) was published at the time of writing (August 2005) the conclusion of which was that the noise levels emanating from AWE(A) were extremely low and very unlikely to give cause for concern. The survey consisted of ambient noise levels measured around the perimeter of the site. The A weighted sound pressure level that is exceeded for 90% of the time was recorded. A survey for AWE(B) was also commissioned but not ready at the time of writing.

4.45 Results showed that there was very little noise emitted from AWE(A). Such noise sources as there were consisted of minor traffic movement, releases from steam mains, grass cutting, noise from generators and pumps and some minor hum from a few facilities. Results from AWE(B) are expected to be similar.

Theme E: Water

Overall objective: ***Reduce total water consumption and minimise risks of water pollution and flooding.***

External Baseline

5.47 Both AWE (A) and AWE(B), lie within the catchment of the River Kennet and its sub catchments of Foundry Brook and the River Enbourne which are both tributaries of the Kennet. The Kennet itself is a tributary of the River Thames, which it joins at Reading.

4.47 The Kennet and Pang Catchment Abstraction Management Plan (2003), provides a good general description of the baseline character of the area (see below).

Description	Situated in the west of the River Thames basin. Defined by the Berkshire and Marlborough Downs to the north and west, and by the Hampshire Downs in the south. From these areas, the land slopes gently towards the valley bottom, which has an elevation of between 50 and 100 metres above sea level.
Main rivers	Kennet, Og, Aldbourne, Lambourne, Winterbourne, Dun, Shalbourne, Pang, Enbourne, Foudry Brook
Geology	London Clay, Lower Bagshot Beds, Lower Chalk, Middle Bagshot Beds, Middle Chalk, Reading/Woolwich Beds, Upper Bagshot Beds, Upper Chalk, Upper Greensand
Water Abstraction Points	560 abstraction points with licensed volume of 630 Ml/d

Summary of abstraction points:

- Agricultural (including fish farms) – 320 points (227.4 Ml/d)
- Environmental (including river augmentation) – 32 points (49.55 Ml/d)
- Industrial – 79 points (85.37 Ml/d)
- Amenity – 3 point (0.64 Ml/d)
- Private water supply/water undertaking – 83 points (0.80 Ml/d)
- Public water supply 43 points (266.58 Ml/d)

Fishing	Mixed fishery reflecting variety of water environments – rivers and canals in the CAMS area important fisheries for angling – numerous angling clubs; lower Kennet is the major coarse fishery in the area; upper Kennet is the major game fishery.

- Headwaters of all Chalk rivers support game fish, with Brown Trout and Grayling dominating

- Headwaters are also important salmonid spawning grounds
- Smaller rivers – generally game fisheries along entire length
- River Lambourn has Bullhead and Brook Lamprey. With a naturally recruiting wild Trout population it is the principal river for Salmon restoration to the Thames
- Middle reaches of River Kennet – mixed fishery; Brown Trout population reliant on instructions
- Lower Kennet – populations of Chub, Barbel and Trout; includes coarse fishes such as Roach, Bream, Carp, Tench and Perch
- Foudry Brook – limited fish population, but good numbers of juvenile Chub and Roach in middle and upper reaches
- River Shalbourne – isolated population of Dace

Water Quality – General Quality Assessment (GQA)	▪ Biological GQA (grades 'a' to 'f' – 'a' highest) – most rivers in the CAMS area have grade 'a' or 'b'; Foudry Brook is 'c' to 'd' ▪ Chemical GQA (grades 'A' to 'F' – 'A' highest) – all river in the CAMS area have grade 'A' or 'B'
Effluent Disposal	Sewage Treatment Works at Reading, Marlborough and Newbury. Also private dwellings discharge into the Kennet and Pang where there is no mains foul sewer.

Internal Baseline

4.48 AWE plc carry out the following sampling procedures:

4.49 **Surface Water Sampling.** All major on-site surface water outfalls at AWE(A) are sampled close to the site boundary in order to monitor surface water leaving the site. Automatic samplers collect a composite sample over a monthly period. At AWE(B),

Burghfield Brook is sampled where it enters and leaves the site. AWE has around 30 outfalls of varying magnitude and importance.

Sediment Sampling: Sediment samples are collected from the surface water monitoring locations where possible. Most samples are collected annually, or for locations close to authorised aqueous discharges points (Aldermaston Stream, Silchester Brook and the Thames at Pangbourne/Purley) six-monthly to establish whether radioactivity is occurring over long periods of time.

Rainwater Sampling: Rainwater samples are collected monthly from four locations at AWE(A), one location at AWE(B) and one site outside the wire in Tadley.

Groundwater Sampling: Groundwater samples are collected quarterly from shallow boreholes located on the AWE(A) site to monitor groundwater for radioactivity. Currently 57 shallow boreholes are analysed.

Silchester Sewage Works: Samples of solid and liquid raw sewage are collected quarterly.

The Project Specific Monitoring Programme, a continuation of the site-wide investigations, currently samples approximately 100 boreholes on and off site for chemical properties. This a rolling programme with sampling intervals ranging from one month to one year.

4.50 The major discharges at AWE(A) are as follows:

- Trade/Process Water
- Foul Water
- Surface Water Runoff

4.51 In 1952 an 18.5 kilometre pipeline – the Pangbourne Pipeline – was opened to disperse treated wastewater from AWE(A) to the Thames. The pipeline was officially closed on the 16 March 2005 and was replaced by a new on-site wastewater treatment plant.

Water Supply: As far as water supply is concerned the majority of the water used at both AWE(A) and AWE(B) is supplied from abstraction wells within the wire. The wells are monitored to comply with the Water quality Supply Regulations following treatment. As part of the AWE(B) site investigation the wells have been sampled prior to treatment however this is not routine.

Theme F: Waste

Overall objective: ***Reduce waste production and promote reuse, recycling and recovery.***

External Baseline

4.52 West Berkshire Council through its Local Agenda 21 Programme of 1999 – 2001, Sustainable Development Policy, West Berkshire Sustainable Development Forum and Municipal Waste Management Strategy 2002 - 2022 is committed to:

- more sustainable management within West Berkshire;
- fuller understanding of sustainable waste management issues and practices throughout the community;
- full and interactive dialogue with all members of the community on waste management issues
- the reduction and re-use of waste by residents;
- development of practical initiatives to support waste segregation at source for both households and businesses;
- reduction of waste to landfill;
- management of waste in adherence with the proximity principle;
- deliverance of government performance standards for waste management;
- continuous and demonstrable improvement in the quality, sustainability and efficiency of waste management services; and
- increased recovery of value from waste.

Internal Baseline

4.53 The principal waste arising from AWE are general office wastes and redundant equipment, and waste oils, chemicals, solvents and lubricants from various facilities.

4.54 Waste chemicals are transferred to Waste Transfer Station at AWE(A) prior to their off-site disposal at an appropriately licensed facility.

4.55 Where appropriate, AWE plc sends general office and non-hazardous wastes for re-use or recovery rather than disposal. In 2001, AWE recycled over half of the non-hazardous waste arising from Aldermaston and Burghfield. This figure rose to nearly 60% in 2002.

4.56 The explosives processing areas produce waste explosives and explosive contaminated waste, which include such items as plastics, wipes and disposal gloves.

4.57 In order for explosives to be taken off site they need to be fully characterised and be of sufficient size and uniform in nature. At AWE these criteria are not always met and, as a result, are destroyed on-site at the burning grounds which are MOD licensed facilities. Ash is collected and taken off-site for disposal at an appropriately licensed site. Effluent produced by the damping down of fires on the burning ground is collected and treated at the AWE Trade Effluent Plant before discharge to the public sewer.

4.58 In terms of the SDCP, radioactive waste may be produced during either the demolition or refurbishment of buildings. Low Level Waste is currently sent to Drigg at Holmrook in Cumbria whereas Intermediate Level Waste (ILW) is drummed and stored on-site. Systems are in place at AWE to reduce the amount of ILW that is required to be stored on site. Disposal of RA waste is authorised by the Environment Agency and the storage of ILW by the Nuclear Installations Inspectorate.

Theme G: Land, Buildings and Construction Materials

Overall objective: ***Minimise expansion onto green sites, explore refurbishment before building afresh, design sustainability features into new buildings and promote recycling of materials.***

4.59 The whole of the AWE(A) and AWE(B) sites are enclosed within a high security fence. The specification of these fences are constantly reviewed against the currently assessed terrorist threat. Within the boundaries of both sites the overall impression is that of a typical Government establishment of the1940's, 1950's and 1960's whilst the functional facilities give the site the appearance of a medium/light industrial complex.

4.60 At AWE(A) the 'B' area which contains the explosives processing area is much more open in character with substantial amounts of heathland. The main NSPA and office areas are typical industrial and commercial zones with many buildings of varying height and a great deal of hardstanding. Within this zone are a number of small, but nonetheless potentially locally valuable, green spaces.

4.61 The far west of the site is characterised by the open spaces used by the AWE recreational society.

Theme H: Geology and Soils

External Baseline

> **Overall objective:** ***Minimise loss and disturbance of soil and substrates. Minimise soil contamination risks and remediate previously degraded land.***

4.62 Both AWE(A) and AWE(B) lie at the western end of the London Basin, a major geological syncline which has its western extremity at Savernake Forest, near Marlborough in Wiltshire, and extends to the Thames estuary. The whole area is underlain by the Upper Chalk at around 200m depth whilst the Tertiary deposits which overly the area – principally the Bagshot Beds, London clay and Reading Beds - are around 100m in thickness.

4.63 Hydrogeologically, the Upper Chalk is of enormous national importance and classified a major aquifer, it also provides baseflow and spring sources to many of the rivers in the region.

Internal Baseline

4.64 Within the wire at both Aldermaston and Burghfield, the principal concerns relating to geology and soils concern the legacy of land contamination from previous use of the sites.

4.65 AWE plc have an ongoing Land Quality Survey programme, which began in 1996, designed to identify, investigate and remediate the land contamination issues at both AWE(A) and AWE(B).

4.66 The survey programme revealed nine areas around AWE(A) that required investigation and remediation and these have been the subject of further investigation and remediation.

4.67 In the immediate future, three priority areas have been identified:

Area I in the northwest portion of the site contains a number of organic solvents that had been disposed of to a soakaway. This was formerly common practice but is not acceptable now. The area has been designated as 'contaminated land' under Part IIa of the Environmental Protection Act 1990. A project to remove the solvent source commenced in spring 2004 with the agreement of the Environment Agency.

Area 6 Area 6 is in the south eastern portion of the AWE(A) site is contaminated with Trichloroethene (TCE) at several metres depth below the surface. A survey outside the wire has found that TCE has migrated off site but at low levels. Decoy Pit, Pools and

Woods SSSI are adjacent to the site at this point. The levels of TCE have been regularly monitored to establish the level of natural degradation. As the levels are not decreasing quickly enough, a project is underway to identify the most appropriate method to remediate the contamination.

Area 8 in the far southeastern corner of the site was found to contain mercury in groundwater at a level exceeding the Environment Agency Notification level of 0.7 micrograms/litre (ug/l). AWE plc has completed a programme for the installation of monitoring equipment and measurements are ongoing.

4.68 At Burghfield general site investigation are on going around the southeast perimeter of the site and in the area of the site tip in the northeast and burning ground in the north west.

Theme I: Biodiversity and Nature Conservation

Overall objective: ***Seek to protect habitats and species and promote opportunities to enhance and conserve wildlife.***

External Baseline

4.69 A review of local ecological designations revealed that there are no sites of international importance in the vicinity of either AWE(A) or AWE(B).

4.70 There are a number of nationally important SSSIs in the area which are detailed in the table in Appendix 1. The nearest of these is the Decoy Pit, Pools and Woods SSSI. The SSSI comprises a mosaic of habitats including woodland, heathland, grassland and small waterbodies. It supports the largest known number of breeding dragonfly in Berkshire and also includes alder woodland types, which are a nationally uncommon, and declining habitat.

Internal Baseline

4.71 Several studies have been undertaken into the ecology and nature conservation interest of both AWE(A) and AWE(B). Although the sites gives the appearance of commercial/industrial facilities there is a surprising amount of nature conservation interest particularly at AWE (A) both around the perimeter and within the central area of the site.

4.72 All the ecological reports available have been reviewed. A summary of the review can be found in Appendix 1. Great crested newts, badgers, adders and black redstarts all of which are protected to some degree (see Appendix 1) are found around the perimeter of the site. Little ringed plovers and Little owls probably nest in 'B' area, which comprises large areas of heathland and bare gravel.

4.73 Within the central area of the site there are small areas of un-improved grassland that support an interesting assemblage of orchids, bird's foot trefoil and day moths.

4.74 Much of the past data collection has relied on the efforts of volunteers. These data, together with the Phase 1 Habitat Surveys, form a basis for the description of the ecological baseline of the sites and identify the main features of interest. However, in order to take the SSA forward, it is necessary to initiate systematic surveys of the sites and the programme set out in the '2005-2006 AWE Biodiversity Action Plan: Baseline Ecological Surveys' provides a good basis.

4.75 In addition to the surveys proposed, we would recommend that a dormouse survey is undertaken. This would comprise a nut search for signs of dormouse feeding over the autumn and winter, and, if considered appropriate, deployment of dormouse nest tubes next spring through summer and autumn.

Theme J: Archaeology and the Historic Environment

Overall objective: ***Protect and enhance features of archaeological interest, the historic environment and cultural heritage.***

Archaeology

4.76 At both Aldermaston and Burghfield, evidence exists of human occupation going back to the Prehistoric period. Evidence is also found through the Roman, Medieval and Post Medieval periods.

4.77 At AWE(A) the most obvious example of the archaeological potential is found in Grims Bank – a Scheduled Monument – which is a ditch and bank structure dated to

somewhere between the Late Iron Age or Early Roman periods (1200 – 1600 years ago). The section of Grims bank at AWE(A) is part of a much larger linear earthwork that runs for three miles from Ufton Nervet to AWE Aldermaston. There are various interpretations of the purpose of Grim's Bank including a defensive earthwork associated with the Iron Age and subsequent Roman settlement at Silchester, a boundary demarcation between different social groups or the boundary of pasture clearance or an enclosure.

4.78 The importance of Grim's Bank has long been recognised and in 2001 AWE plc published the 'Grim's Bank Management Plan' to ensure the long-term conservation of the monument.

4.79 During the Roman occupation of Britain the area contained a major administrative capital known as *Calleva Atrebatvm* which is close to the present village of Silchester. One of the main communication arteries for Calleva was the road to the major Roman settlement of Cirencester (Corinium). The road enters AWE(A) in the south east corner near Grim's Bank, passes through 'B' area and exists at the west central section.

4.80 At AWE(B) there is a large ditch system probably forming part of a larger field system at around 500m from the north east corner of the site. There is no evidence of Roman settlement or indeed a farmhouse associated with it.

Historic Environment

4.81 In addition to the archaeological heritage of AWE(A) in particular, other indications of the former use of the site can be seen in the early park boundaries and avenues, the layout of the site as a former airfield and as AWRE and AWE, the home of Britain's first nuclear deterrent.

4.82 The structures relating to the Cold War are particularly important as they are generally recognised by English Heritage to be among the least well recorded and least known military structures. Accordingly, a comprehensive survey of these and other important heritage structures was carried out at AWE. The report entitled 'AWE Aldermaston, Burghfield and Blacknest: Historic Characterisation and Management Strategy' made the following recommendations:

AWE(A): If feasible the following buildings and the layout of the areas in which they are located should be retained or referenced in new development:

- B9V1, B9V2, B9V3, B9V10, B9V11, B9V12 are good surviving elements of the 1950s AWRE explosives stores.
- A1, A3 and A6 are the buildings in which Britain's first nuclear test device was developed.
- C3.1 and F12.5 are the only surviving WWII hanger buildings on site.
- In addition, the existing layout of the AWE site respects the lines of the airfield runway and this should continue to be respected as far as possible.
- F6.1 has provided directors and senior administrative accommodation and meeting rooms since the early 1950s.

4.83 Prior to any development, the report recommended that the buildings within the following Character Areas have a detailed historic and photographic record prepared:

AWE(A)

- Area A2 Administrative & Amenity
- Area A4 WWII Airfield
- Area CT1 Citadel North
- Area CT2 Citadel South
- Area A10 Research and Development
- Areas EX1 and EX2 Northern and Southern Explosives Areas
- Area EX4 Explosives Laboratories.

AWE(B)

- The Gravel Gerties represent an important example of the sharing of technologies and design between the UK and USA during the early days of the Cold War. Whilst they are under strict security, the opportunity should be taken to ensure that historic features of the structures are retained as an integral part of the site.
- Structures and buildings associated with the original use of Burghfield as a Royal Ordnance Factory (Area B4) should be recorded if they are to be removed, in particular the pillboxes and process buildings.

Theme K: Landscape and Townscape

External baseline (AWE(A))

Overall objective: ***Protect and enhance the character and appeal of landscapes and townscapes.***

County Wide Landscape Character Assessment

4.84 AWE(A) lies within the administrative area of Berkshire, with its southern boundary abutting Hampshire. The site lies within the H5 Burghfield (Woodland and Heathland Mosaic) character area, the key characteristics of which are:

- An undulating landscape south of the Kennet Valley.
- Large-scale pastoral and arable field pattern.
- Large interlinked woodland blocks, dominated by mixed and formal coniferous geometric plantation woodlands.
- Heathland pockets.
- Settlement of Tadley straddling the southern character area boundary.
- Large areas of Ministry of Defence controlled land.
- Parklands of Aldermaston Park and Wasing Park.
- Numerous prehistoric features of barrows and earthworks, including Grim's Bank.

4.85 The southern boundary of the site abuts the Hampshire landscape character area number 5. - North Hampshire Lowland and Heath, the key characteristics of which are:

- Predominance of farmland comprising arable and grazing.
- Undulating.
- Well wooded.
- Irregular field patterns and winding lanes.
- Heathlands and unimproved meadows.

District Wide Landscape Character Assessment

4.86 Whilst the majority of the site lies within the West Berkshire District Council (Newbury) Administrative Area, the southern boundary of the site abuts Basingstoke and Deane District Council. A district wide landscape assessment of these administrative areas was carried out in 1993 and 2001 respectively. The following paragraphs describe the district wide landscape character areas.

Newbury (West Berkshire) District Council

4.87 The southern section of the site is unclassified in the character assessment. However, the site is set within the following areas:

Gravel Plateau Woodland with Pastures and Heaths

4.88 This character area bounds the site on its eastern, south-eastern and western site boundaries and also extends in to a small section of the site on its western edge. Its key characteristics area:

- Intimate scale, flat to undulating plateau with abrupt escarpments and small incised valleys with streams.
- Complex pattern of landscape dominated by woodland.
- Pastures, paddocks, remnant heathland and commons.
- Linear settlements with wooded areas and some sub-urban areas.
- Large private houses and educational establishments.
- Straight ridge top roads and complex winding lanes.

Plateau Edge Transitional Matrix

4.89 This area bounds the site on its north-eastern boundary and has the following key characteristics:

- A small to medium scaled complex landscape.
- Transition between the Plateau Woodlands and lower open farmlands.
- Gradation of deciduous and mixed woodland to pasture and arable land.
- Many parklands and large private estates.
- Clustered farmsteads, private residences and small villages marked by churches.

Parkland

4.90 This character area bounds and extends into the site on its northern side. It's key characteristics are:

- Well established pastures with mature free standing trees.
- Associated with large private estates.
- Often sited on hillside slopes.

4.91 Located between wooded ridges and lower open farmland

Basingstoke and Deane District Council

4.92 Settlement: 2 - Tadley / Baughurst / Pamber Heath bounds the site on its southernmost edge. Key characteristics are:

- Small settlements located along winding lanes interspersed with patches of common.
- Set within a mixed farmland and woodland landscape with heathland common.
- Use of traditional materials, predominantly brick and plain clay tile.
- Mostly modern residential development.
- Linear character.
- Some heath and woodland remains within the built-up areas.

Internal Baseline (Site Landscape Character) – AWE(A)

4.93 The site contains the following broad landscape character areas, which are described in terms of their key landscape characteristics, their landscape quality and sensitivity to change. The character assessment considers and relates to the district wide assessment, but identifies distinct landscape features have been identified within several of the character areas and have been included in the description.

1. Contained Intensive Industrial Plateau

- Area of concentrated industrial buildings
- Chimneys, lighting columns, floodlights and double fencing
- Flat topography
- Occassional small isolated trees
- Poor landscape quality
- Low landscape value and sensitivity to change

2. Contained Disused Plateau

- Area of disturbed ground, currently vacant
- Flat topography
- Minimal vegetation
- Poor landscape quality
- Low landscape value and sensitivity to change

3. Urban Core

- Wide road with on street parking
- One and two storey, with occassional three storey, office buildings with flat roofs, interpersed with car parks
- Lighting columns
- Gently sloping topography
- Occassional street trees
- Wide verges containing pedestrian paths
- Ordinary landscape quality
- Medium landscape value
- Low sensitivity to change

4. Service Quarter

- Key service area for the site including small industrial utility buildings and car parking areas

- Vacant areas
- Gently sloping topography
- Occassional street trees
- Poor landscape quality
- Low landscape value and sensitvity to change

5. Plateau Depot Area

- Two storey building contained by fencing
- Hard landscape storage area
- Poor landscape quality
- Low landscape value and sensitivity to change

6. Plateau Hangers

- Range of large hangers and smaller single storey curved buildings of potential historic and cultural interest
- Predominantly hard landscape
- Clutter of street furniture
- Predominantly flat topography
- Poor / ordinary landscape quality
- Medium landscape value
- Moderate sensitivity to change

7. Plateau Formal Open Space

- A large open area containing grass pitches
- Large expanse of car parking with a cluster of small buildings and portacabins contained by formal hedges
- Flat topography
- Framed by fastigate tree lines
- Ordinary landscape quality
- Medium landscape value in terms of its land use
- Moderate sensitivity to change

8. Contained Open Space

- Open hard landscape area containing roads, car parking and a helipad
- Flat topography
- Contained by significant birch and oak woodland belt
- Ordinary / good landscape quality
- Medium landscape value
- Moderate sensitivity to change

9. Intimate Enclosed Parkland

- Terraced office buildings and car park set within a landscape dominated by heath woodland species and rhododendron
- Sunken topography with steep slopes containing the area
- Parkland landscape associated with the local area
- Large pond feature
- Good landscape quality
- High landscape value and sensitivity to change

10. Open Grassy Heath Plateau

- Extensive area of heathy grassland
- Mounds and low grouped scattered single storey flat roofed buildings
- Sporadic groups of mature trees
- Landscape features include Grims Mound contained by low fence, a pine plantation and a large pond and associated woodland
- Single track roads
- Predominantly flat topography
- Ordinary / good landscape quality
- Medium landscape value
- Medium sensitivity to change

11. Wooded Plateau Edge

- Manmade mound and water treatment works contained by dense treebelts
- Single track roads
- Steeply undulating topography
- Ordinary / good landscape quality
- Medium landscape value and sensitivity to change

12. Disturbed Plateau

- Vacant site subject to demolishion works
- Flat topography
- Contained by construction fencing
- Poor landscape quality
- Low landscape value and sensitivity to change

13. Wide Plateau Corridor

- Wide road with on street parking – former runway
- Contained by high fencing on either side
- Poor landscape quality
- Low landscape value and sensitivity to change

External baseline (AWE(B)

County Wide Landscape Character Assessment

As for AWE(A).

District Wide Landscape Character Assessment

4.94 The site lies wholly within the West Berkshire (Newbury) Council Unitary Authority administrative area. A district wide landscape assessment was carried out in 1993. The following paragraphs describe the district wide landscape character areas.

4.95 The eastern section of the site is unclassified in the character assessment. However, the site is set within the following areas:

12. London Clay

This character area bounds the site on its eastern, southern and western site boundaries and also extends in to a small section of the site on its western edge. It's key characteristics area:

- Broad scale, gently undulating lowland farmland landscape;
- Good quality pasture and arable land;
- Many mature oak trees as hedgerow specimens or free standing;
- Quiet unspoiled character with large farmsteads and some parklands;
- Winding lanes between hedgerows and lush verges.

9. Kennet Valley - Degraded

This area bounds the site on its northern / north-eastern boundary and has the following key characteristics:

- Broad, flat lowland valley floor landscape;
- Major disturbance of earlier land use by extensive gravel extraction;
- Extensive man-made lakes and some idle land;
- M4 motorway above grade or an embankment forms major visual and aural intrusion;
- Gravel pits partially screened by recent woodland planting and some blocks of mature woodland;
- Isolated remnant farmsteads.

Site Landscape Character

4.96 The site contains the following broad landscape character areas, which are described in terms of their key landscape characteristics, their landscape quality and sensitivity to change. The character assessment considers the district wide assessment, but identifies distinct landscape features have been identified within several of the character areas and have been included in the description.

1. Urban Quarter

- Comprising a concentration of flat roofed single storey office buildings
- Scattered light industrial sheds and a power plant
- Chimneys and visually cluttered
- Predominantly flat topography
- Poor landscape quality
- Low landscape value and sensitivity to change

2. Contained Residential Agricultural Edge

- Scattered small 1930's / 1940's residential units interspersed with grassland and trees
- Agricultural fringe
- Gently sloping landform
- Good quality oak copse providing a local landscape feature
- Ordinary landscape quality
- Medium landscape value
- Moderate sensitivity to change

3. Open Undulating Grassland

- Low grass angular mounds on a grid pattern
- Avenue of truncated poplars
- Contained by chainlink fencing
- Small buildings
- Ordinary landscape quality
- Low landscape value and sensitivity to change

4. Contained Formal Open Space

- Large area of grass pitches
- Ordinary landscape quality
- Medium landscape value in terms of its resouce and therefore moderate sensitivity to change

5. Contained Developed Landscape Fringe

- Mature tree groups with associated scrub and hedgerows
- Linear mounds and general gentle rolling topography
- Occassional scattered buildings and associated car parking
- Stream
- Fences and domestic scale light columns
- Ordinary / good landscape quality
- Medium / high landscape value
- High sensitivity to change

6. Enclosed Small-scale Buildings

- Acute grass mounds set within a flat topography
- More dominant flat topped buildings
- Tree groups and occassional avenues
- Poor landscape quality
- Low landscape value and sensitivity to change

7. Contained Rolling Grassland

- Low, rolling grass linear mounds
- Occassional buildings
- Stream
- Isolated mature trees
- Pipes and electricity cables
- Ordinary landscape quality
- Low landscape value
- Moderate sensitivity to change

8. Intense Industrial Zone

- Densely developed industrial zone including loading bays
- Brick buildings, flat and pitched roofs
- Large steep mounds
- Metal lighting towers (also visible in long distance views)
- High fences, flood lighting and cameras
- Poor landscape quality
- Low landscape value and sensitivity to change

9. Servicing Quarter

- Flat roofed brick buildings and industrial workshop sheds on a grid pattern
- Pipes, roads and parking
- Generally flat topography
- Avenue of trees set on low linear mound forming the northern boundary to the area
- Occassional isolated trees
- Poor landscape quality
- Low landscape value and sensitivity to change

10. Open Valley Grassland

- Large regular flat topped grass mounds
- Some pipes, fences, signage, masts / poles and small brick structures and walls
- Car parks and roads
- Predominantly flat topography
- Occassional isolated trees
- Ordinary landscape quality
- Low landscape value and sensitivity to change

Theme L: Health, Safety and Crime

Overall objective: ***Maximise opportunities to promote healthy, safe and secure environments in which to live and work.***

4.97 As discussed under several other themes, both AWE(A) and AWE(B) are very typical of Government establishments of the 1940's, 1950's and 1960's. It is fair to say that many of the buildings are showing signs of dilapidation partly from age and partly from the techniques that were used to build them.

4.98 It is arguable that many of the current facilities and accommodation, whilst undoubtedly safe and secure, do not provide a sense of health and well-being.

4.99 AWE operates to the highest standards of health and safety in the workplace and given the nature of the operations security against crime is of paramount importance.

Theme M: Communities and Social Values

4.100 AWE plc believes that:

'it is important that AWE should be a safe and good neighbour and people living close to our sites should have confidence in our safety'

4.101 AWE has formed a Local Liaison Committee, which meets four times a year and brings together senior management at AWE with elected representatives and officers from the local community. It also operates a schools liaison initiative to promote education, particularly in the science and engineering sectors. As part of the schools initiative AWE plc promote the 'AWEsome science' campaign and run an annual School's Engineering Challenge.

4.102 AWE play a full part in the community at almost all levels from the formal liaison groups and schools initiatives described above to 'Fantasy Football' that in July this year provided £5000 to a local hospice.

Theme N: Infrastructure and Amenities

Overall objective: ***Maximise opportunities for all sectors of the public to use MOD amenities. Minimise disturbance to local populations when using public facilities.***

4.103 An AWE Recreational Society is located at AWE(A) and is available for the local community if they wish to apply for associate members. It is located in the western portion of the site, within the boundary of AWE(A) but outside the licensed area. The facility receives significant support from AWE plc.

4.104 At AWE(B) there is a Civil Service Club located outside the wire. The public are allowed to use these facilities either by applying for associate members or by the invitation of an existing member.

Theme O: Economy and Employment

4.105 West Berkshire District has a population of around 144,000. Other than Newbury, which is the principal town, the district is predominantly rural in character with around 60% of the area designated as an Area of Outstanding Natural Beauty.

4.106 The workforce comprises 63,000 people in full-time employment employed by nearly 8000 companies of which only two – Vodafone and AWE – employ more than 1000 each.

> **Overall objective:** ***Maintain and encourage a diverse and thriving economy, particularly at local and regional level.***

4.107 AWE plc is one of the largest employers in West Berkshire with 4000 permanent employees of which about 400 are at AWE(B). Many of these posts are in the higher value managerial, engineering and scientific sectors. In total AWE plc currently employs around 6% of the total workforce of West Berkshire. It is estimated that indirect employment resulting from the presence of AWE accounts for a further 2000 jobs in the district.

4.108 The SDCP estimates that a minimum of a further 350 people will join AWE plc each year until 2008. The workforce will continue to expand as replacement facilities are commissioned but in the longer term should return to present day levels. Construction workers currently number some 200 and, with the replacement/refurbishment programme this figure will increase significantly.

5 SSA Stage B: Deciding the scope and developing alternatives

5.1 Stage B covers the following:

- The identification of alternatives.
- The selection of preferred alternatives.
- Consultation with local authorities with environmental responsibilities and other bodies concerned with aspects of sustainability.

5.2 During the development of the SDCP, an iterative process has been pursued refining and developing the plan in line with issues such as access, security and construction in addition to environment. It will be the next stage in the process, where the SDCP is further refined to the individual facility level, that the principal discussions on alternatives and optioneering will need to take place.

5.3 In this report, therefore, Stage B has been confined to a consideration of the *process* of optioneering, highlighting the importance of deciding on the Best Practicable Environmental Option and the early engagement of the environmental team in the process. AWE plc already has an 'Environmental Options Study Methodology' in place and this too is described below.

Terminology

Best Available Technique (BAT)

5.4 Under the Pollution Prevention and Control (England and Wales) Regulations 2000 (the PPC Regulations), which implement EC Directive 96/61, companies are required to consider 'Best Available Techniques' (BAT) when making decisions on technologies and options for new or refurbished installations. BAT is used by the Environment Agency when licensing major new installations that fall within the IPPC regime and tries to balance environmental benefits and costs. BAT is defined in the PPC Regulations as the 'most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques...to reduce...the impact on the environment as a whole'.

Best Practicable Environmental Option (BPEO)

5.5 BAT refers specifically to installations and so it is therefore more meaningful when considering options to consider the 'Best Practicable Environmental Option' (BPEO). BPEO has been defined by the Royal Commission on Environmental Pollution as:

' the outcome of a systematic consultative and decision making procedure which emphasises the protection and conservation of the environment across land, air and water.' The BPEO procedure establishes for a given set of objectives, the option that provides the most benefits or the least damage to the environment, as a whole, at acceptable cost, in the long term as well as the short term.'

BPEO involves an assessment of the costs and benefits of a particular option and provides a clear link with SEA Stage B when assessing programme options.

BPEO Studies and the development of alternatives

5.6 Guidance has been produced by the Environment Agency (with the Scottish Environmental Protection Agency) on the BPEO process. The guidance is primarily intended to support the assessment of BPEO studies relating to the authorisation of radioactive waste disposal at nuclear sites but is equally applicable to cases such as the AWE SDCP.

5.7 The guidance drawn up by the EA and SEP, recommends an eight-stage approach (see box below).

Framework for Implementation of BPEO Studies

Definition of purpose and scope

The purpose of the study is defined and the methodology selected. Key assumptions are identified. An initial estimate is made of the level of detail required and a corresponding project plan drawn up. The extent of stakeholder participation is decided. Stakeholders may wish to comment on every aspect of the framework and at more than one stage. The regulators are advised of the proposed scope and other aspects of the study and may wish to comment.

Identification of options

A broad list of options is drawn up and characterised in sufficient depth for initial screening.

Screening

Decisions are made regarding the principles to be applied in deciding the criteria for screening out options from further consideration, and then the criteria themselves are defined. The criteria are applied in order to select a short list of options from the initial broad list of alternatives.

Selection of attributes

The principles to be applied in deciding the attributes against which options are to be compared need to be decided, and then the attributes themselves.

Options analysis

Each option on the short list is evaluated against each attribute. The results of the evaluation are recorded either as a ranking (e.g. best to worst) or a numerical 'score'.

Weighting factors

Weightings may be applied to each attribute to reflect its relative importance in establishing a preferred option. If used as part of the analysis, weightings need to be systematically derived and justified. Alternative weighting sets can be used to test the sensitivity of the conclusions to different perceptions of relative importance (e.g. in order to reflect the perspectives of different stakeholder groups).

Identification of the BPEO

A 'logic flowchart' based on the results of option analysis and application of weighting factors identifies the BPEO. If a numerical scoring system is used, the top scoring option may be the starting point, but the conclusion may still be that this is not the BPEO.

Integration into decision making

Identification of the BPEO is an important input to strategic decision making. In practice, however, few decisions are made solely on the basis of such a study. The selection and approval of a preferred option may be modified by other factors that are not taken directly into account in the BPEO study. These other factors may include political considerations or the results of more detailed safety, economic and technical optimisation studies.

From Guidance for the Environment Agencies' Assessment of Best Practicable Environmental Option Studies at Nuclear Sites. February 2004

5.8 The identification of the BPEO is an important input into strategic decision-making and optioneering but it is important to recognise that it is not the only input nor would the outcome of an optioneering process rely solely on the BPEO. Other factors need to be taken into account such as technical feasibility, operational effectiveness, economic indicators and, particularly in the case of AWE, security considerations.

Current optioneering practice at AWE

5.9 AWE currently operates an 'Environmental Options Study Methodology' – EOS. The EOS provides a tiered approach to optioneering.

Tier 1: Initial Screening Level

- Brief justification of any proposed activity/modification
- Description of process.
- Identification of the requirement for EIA.

Tier 2: Qualitative Assessment of Impact, Cost and Availability

- Description of each process option.
- Qualitative scoring of each process option with regard to environmental and non-environmental impact criteria.
- Identification of legal requirements associated with each option and any requirement for further quantified assessment.
- Identification of the 'best' option with regard to both environmental and non-environmental considerations.

Tier 3: Semi-quantiative Assessment of Impact, Cost and Availability

- Guidance on the completion of applications appropriate to external authorisations that may be required.
- Quantitative assessment where required.

5.10 This method provides a process for identifying the BPEO and it will be important in the development of the SDCP that such a robust, auditable and transparent process is followed for the optioneering of major schemes.

6 SSA Stage C: Strategic Sustainability Appraisal

6.1 This section sets out the Strategic Sustainability Appraisal of the Site Development Context Plan, based on the methodology set out in the "Sustainability Appraisal Handbook for the MOD Estate" (Version 3.1, October 2003). The 'Sustainability Score' has been allocated for each of the Sustainability Themes assuming that the identified 'Actions' are implemented. The 'sustainability score' assesses the extent to which the project supports or contradicts the sustainability objectives for that theme ranging from '*A – Good proactive enhancement in sustainability performance to E – Significant negative impacts, especially ones that cannot be mitigated*'

6.2 The actions include development of strategies, which will be informed by various assessments, implementation of those strategies and subsequent monitoring. Strategies and specific implementation measures within those strategies may become undertakings or conditions, which are attached to any subsequent planning consent.

6.3 As an example: a Transport Assessment (TA) will be undertaken which identifies the impact of both operational and construction activities on the local highway network. The TA will also identify necessary mitigation measures, which seek to reduce impacts. These mitigation measures will include a Travel Plan with a specific target of reducing Single Occupancy Vehicles entering the site to a certain %. In addition improvements may also be required to the external highway network due to capacity constraints. It will be the SOV target and highway works, which may become an undertakings or conditions, which the applicant will need to meet.

6.4 The actions should therefore be regarded as potentially legal requirements.

6.5 The summary of the sustainability matrices are set out below and the full checklists can be found in Appendix 2.

SUMMARY SUSTAINABILITY APPRAISAL MATRIX

THEME AND OBJECTIVES	SCORE						COMMENTARY	SUMMARY OF ACTIONS
	na	A	B	C	D	E		
A - Climate Change and Air Quality Minimise greenhouse gas emissions and pollution of air with gases and particulates.			√				No major air quality issues in and around the site. RSA and IPPC authorisations are statutory requirements, and, for IPPC, will need to demonstrate BAT. Likely impacts arise during construction and due to increased staff levels. The Transport Strategy and proposed Energy Strategy will reduce reliance on fossil fuels. Redrafted Architectural Design Principles will include measures to minimise CFC/HFC usage and reduce Sick Building Syndrome. The Code of Construction Practice will be critical in mitigating the effects of construction dust and odour.	Architectural Design Principles Code of Construction Practice Transport Strategy Energy Strategy (EMS) IPPC/RSA Authorisations/Review

THEME AND OBJECTIVES	SCORE						COMMENTARY	SUMMARY OF ACTIONS
	na	A	B	C	D	E		
B - Travel and Transport Minimise amount of travelling required, particularly via roads and private cars.			√				More vehicles, both during construction and operation. Construction Logistics Strategy to minimise impacts during construction. Transport Strategy to include preparation of a Transport Assessment and Travel Plan. These documents will comment on measures to reduce car travel both on and off site (e.g. use of non-car modes for external travel and provision of LPG / electric buses for internal travel. Publication of EMS Procurement Strategy to cover construction and operational material procurement, including preference for local suppliers where feasible.	Transport Strategy to include Transport Assessment and Travel Plan Construction Logistics Strategy EMS Procurement Strategy
C - Energy Consumption Minimise total energy consumption and support the use of renewable energy rather than fossil fuel sources.			√				More staff will increase energy demand but new Energy Strategy (modernisation of heating system) and design of new buildings (aspiration to achieve BREEAM Excellent) should minimise the impact. Need to explore further the feasibility of renewable energy.	Architectural Design Principles (BREEAM Excellent) Energy Strategy Further exploration of Renewable Energy/CHP opportunities
D - Noise and Vibration Minimise disturbance to people and wildlife from noise and vibration.				√			Potential noise impact during construction, both on site and on local roads. AWE Construction Site Rules (CSR) incorporates some management measures which will be developed into a Code of Construction Practice. Construction Logistics Strategy will minimise impact of construction traffic on local roads.	Construction Logistics Strategy Code of Construction Practice

THEME AND OBJECTIVES	SCORE						COMMENTARY	SUMMARY OF ACTIONS
	na	A	B	C	D	E		
E - Water and Drainage Reduce total water consumption and minimise risks of water pollution and flooding.			√				Existing commitments to improve the utilities infrastructure will result in overall abstraction levels remaining the same or reducing, despite increases in staff. The foul water system improvements will prevent groundwater ingress. Further improvements will be made through the implementation of the Code of Construction Practice to manage pollution risk during construction, appropriate Sustainable Urban Drainage techniques to minimise runoff from hardstanding, and introduction of appropriate water efficient design principles.	SUDs Architectural Design Principles (Achievement of BREEAM Excellent) Code of Construction Practice EMS Utilities Strategy
F (i) – Waste - Hazardous Reduce waste production and promote reuse, recovery and recycling.					√		No change in intensity of operations which produce hazardous waste, and existing hazardous waste procedures in place. Large quantities of potentially hazardous waste may be produced during construction. AWE Construction Site Rules incorporates hazardous waste disposal measures, which will be developed into a Code of Construction Practice. The Construction Logistics Strategy will manage the movement of waste offsite, including hazardous wastes.	Code of Construction Practice Construction Logistics Strategy
F (ii) – Waste – Non-Hazardous Reduce waste production and promote reuse, recovery and recycling.			√				More staff therefore more wastes. Commitment to produce an Integrated Waste Strategy by Oct 2006. The construction process will result in large quantities of waste, potentially disposed off site. The Code of Construction Practice will ensure implementation of appropriate waste procedures, including reuse on site.	Integrated Waste Strategy Code of Construction Practice Construction Logistics Strategy EMS Procurement Strategy Decommissioning Strategy

THEME AND OBJECTIVES	SCORE						COMMENTARY	SUMMARY OF ACTIONS
	na	A	B	C	D	E		
G - Land, Buildings and Construction Materials Minimise expansion onto "green" sites and explore refurbishment before building afresh, design sustainability features into new facilities and promote recycling of materials.		√					Principles behind Site Development Context Plan are to make best use of the land through refurbishment and design new facilities to modernise/improve the efficiency of the whole site. Overall net gain in quantity of green space.	Site Development Context Plan Architectural Design Principles Code of Construction Practice Recreational Study Constraints Plan Accommodation Strategy
H - Geology and Soils (i) – Natural Resources Minimise loss and disturbance of soil and substrates.				√			The construction phase is likely to generate significant quantities of spoil. Commitment to treat and/or reuse spoil, to minimise disposal offsite. The Landscape Strategy will incorporate this commitment.	Commitment to Cut and Fill Balance within Code of Construction Practice Commitment to treat and reuse contaminated spoil where possible Landscape Strategy
H - Geology and Soils (ii) – Contaminated Land Minimise soil contamination risks and remediate previously degraded land.				√			Ongoing commitment to identify and remediate contamination on site through Land Quality Assessment work. Legacy of land contamination issues taken into account in SDP for permanent structures and construction compounds and laydown areas. Code of Construction Practice to specify constraints re. Construction compounds/laydown areas	Land Quality Assessments Site Development Context Plan Code of Construction Practice
I - Biodiversity and Nature Conservation Seek to protect habitats and species and promote opportunities to enhance and conserve wildlife.			√				Presence of protected species on site and areas of conservation interest. Some areas lost during development, but substantial area in eastern section to be reverted to green space. Predicted to have overall net gain, to be confirmed by actions.	2005-2006 AWE Biodiversity Action Plan: Baseline Ecological Surveys Constraints Plan Site Development Context Plan Environmental Management Plan for Eastern Area Code of Construction Practice

THEME AND OBJECTIVES	SCORE						COMMENTARY	SUMMARY OF ACTIONS
	na	A	B	C	D	E		
J - Archaeology and Historic Environment Protect and enhance features of archaeological interest, the historic environment and cultural heritage.					√		Loss of known and potentially unknown built heritage and archaeological features on the site is unavoidable. Need to be identified and relevant protection measures adopted.	Code of Construction Practice Site Development Context Plan – include Built Heritage and Archaeology Constraints and Protection Measures Commitment to recording and/or preserving important heritage features.
K - Landscape and Townscape Protect and enhance the character and appeal of landscapes and townscapes.			√				Both AWE(A) and AWE(B) are currently very poor in terms of their landscape quality both within the sites themselves, and in terms of their contribution to the wider landscape setting. A comprehensive Landscape Strategy will ensure improvement. Architectural Design Principles to consider visual impact of lighting proposals. And also the character of the buildings, spaces together with the lighting proposals. Code of Construction Practice to include protection of existing features during construction and protection and retention of existing trees and landscape features where possible.	Landscape Strategy Architectural Design Principles Code of Construction Practice to include BS5837:2995 Tress in Relation to Construction.

THEME AND OBJECTIVES	SCORE						COMMENTARY	SUMMARY OF ACTIONS
	na	A	B	C	D	E		
L - Health, Safety and Crime Maximise opportunities to promote healthy, safe and secure environments in which to live and work.			√				New buildings and facilities will be designed with highest priority of safety and security. There will be an increase in number of staff but will follow relevant induction procedures, including construction staff. New buildings and improved facilities should provide a lower stress environment.	Site and Facility Safety Case Health and Safety/Security Induction Procedures
M - Communities and Social Values Promote community development and relationships within MOD, and with adjacent populations. Involve communities in decision-making and minimise disturbance.				√			There is likely to be an increase in the level of disturbance to local communities because of both construction traffic and the increases in numbers of staff. This should be minimised through the Construction Logistics Strategy and the Transport Strategy, including the appointment of a Local Liaison Officer during the Construction Phase.	Construction Logistics Strategy, including appointment of local liaison officer Cumulative Effects Report Transport Strategy Stakeholder Consultation Plan EMS Procurement Strategy Local Liaison Committee
N - Infrastructure and Amenities Maximise opportunities for all sectors of the public to use MOD amenities. Minimise disturbance to local populations when using public facilities.			√				There are currently no on-site welfare facilities. Commitment for provision of these facilities as part of the Site Development Context Plan. The potential loss of the Rec Soc facilities would impact on the number of amenities available on site, However, there is a commitment for reprovision offsite if necessary. Construction welfare facilities will be provided on site.	Independent Recreational Study Construction Welfare Facilities Site Development Context Plan Provision of necessary extra supporting infrastructure
O - Economy and Employment Maintain and encourage a diverse and thriving economy, particularly at local and regional level.			√				The significant increase in employment will have a positive impact on the local employment both directly and indirectly through people moving to the area.	Site Development Context Plan Cumulative Effects – Socio Economic Impact Assessment Code of Construction Practice EMS Procurement Strategy

6.6 The following paragraphs provide details of all actions, including the overall aim/purpose of each and the main requirements that need to be addressed. The actions are divided into two sections:-

- Those which relate to the ongoing commitments/management of the site;
- Specific actions relevant to the Site Development Context Plan and which are likely to be reproduced to support subsequent planning applications.

The various strategies and assessments will be prepared and discussed with key stakeholders prior to submission of planning applications. They will therefore be used to support any planning applications.

Site Management Actions

Utilities Strategy

6.7 AWE plc has already put in place contractual milestones to reduce water consumption, and with this, committed to improvements in the utilities infrastructure of the site. This includes improvements to both the abstraction and distribution of water across the site, and also to the foul water system to prevent groundwater ingress. These improvements will have a significant positive impact on the water use and discharge across the site, and counterbalance the increased demand for water and increased discharges of water that would result from the increases in staff levels.

6.8 AWE will prepare a Utilities Strategy which will present the commitments, which AWE plc is making, and the programme for implementation.

Land Quality Assessments

6.9 There is an ongoing commitment to identify and remediate contamination on site through Land Quality Assessment works. This will continue to be used to inform the development and construction process for individual facilities and associated infrastructure.

6.10 AWE will integrate this commitment into the Code of Construction Practice and Architectural Design Principles.

IPPC/RSA Authorisations

6.11 Both AWE(A) and AWE(B) require RSA authorisation to operate, with the purpose of controlling/monitoring the release of radioactive wastes. In addition, some industrial processes require IPPC authorisation, with the purpose of controlling/monitoring the release of atmospheric pollutants. These are both statutory requirements, and subject to periodic review. The RSA authorisation process is being currently undertaken, with consultation in January 2006.

6.12 The RSA review and the IPPC applications will seek to reduce emissions overall and these reductions will be taken into account within the Cumulative Effects Report.

Site and Facility Safety Case(s)

6.13 The Site and Facility Safety Case is also a statutory requirement for both AWE(A) and AWE(B), and will ensure that the new buildings and facilities are designed with highest priority of safety and security.

6.14 Safety is an important consideration in planning matters as it identifies potential impacts on people and how these will be managed. The safety case(s) will be described and taken into account during the presentation of the planning documentation.

Health and Safety/Security Induction Procedures

6.15 AWE already has in place detailed procedures for health and safety/security induction. These will be continued, with all new staff following the relevant induction procedures. Attention should be drawn to the need for appropriate health and safety/induction procedures for construction staff, which is likely to have a fast turnover.

6.16 These induction procedures will be embedding into the CoCP.

Energy Strategy

6.17 AWE plc will produce an Energy Strategy. Alongside this, there is a specific proposal to modernise the heating system, introducing a new decentralised gas heating system. This will result in significant improvements in the efficiency of the energy use across the site.

6.18 The Energy Strategy will incorporate the need for ongoing awareness of energy use and the related climate change issues, especially with the

increase in staff levels. It will also review any feasibility studies already undertaken with regards renewable energy opportunities, and define the AWE plc commitment to meeting its energy requirements from renewable energy sources.

EMS Procurement Strategy

6.19 AWE plc will produce a Procurement Strategy as part of its EMS. This would have significant benefits to managing the issues that arise during implementation of the SDCP with regards to the selection and purchase of materials. In developing this Procurement Strategy, consideration should be given to how materials are to be specified to minimise environmental impact, and how local suppliers are to be used to reduce long distance freight travel.

Integrated Waste Strategy

6.20 AWE plc will produce an Integrated Waste Strategy. This will incorporate the following

- A Strategy to ensure all appropriate opportunities to reduce/recycle waste are put in place;
- Monitoring of all waste operations for legal compliance, including collection, storage and disposal of hazardous waste;
- Procedures to recycle IT waste.
- Links should be made with the Code of Construction Practice (see below) to manage construction wastes.

Specific Documents as Support to Planning Application(s)

Site Development Context Plan

6.21 The Site Development Context Plan has been produced to provide an overall context for future development.

6.22 In order to achieve the actions set out in the sustainability matrices above, the SDCP will deliver the following commitments:-

- Refurbishment/replacement of old or brownfield facilities/sites first rather than build afresh where this is technically possible'
- Use space efficiently and improve connectivity

- Decommissioning of legacy facilities and restoration of green space where reasonably practical and cost effective.

Constraints Plan

6.23 Alongside the SDCP, a Constraints Plan will be produced and continually updated. This plan will set out the key environmental constraints that need to be taken into account in taking forward the SDCP. This constraints plan will illustrate, but not be limited to, the following:-

- Built Heritage and Archaeology Constraints and Protection Measures
- 2005-2006 AWE Biodiversity Action Plan: Baseline Ecological Surveys
- Important areas of green space to protect and enhance
- Important landscape features and potential opportunities for enhancing the landscape structure

Landscape Strategy

6.24 A Landscape Strategy will be produced for the SDCP. This will ensure that the landscape quality of both AWE(A) and AWE(B) is significantly improved both within the site itself and in terms of its contribution to the wider landscape.

6.25 The Strategy will incorporate measures and proposals to:

- reduce visual impact on the AONB;
- reinforce boundary planting to integrate into its wooded and well treed context
- protection of trees and other landscape features

Environmental Management Plan for Eastern Area (B&H)

6.26 The SDCP has identified the potential for the protection and enhancement of the eastern part of the site. In order to fulfil this opportunity an environmental management plan will be produced to identify the resources for protection and enhancement, implementation measures and long term monitoring regime.

Transport Strategy

6.27 The potential impacts arising from travel and transport will require detailed assessment. The assessment will identify specific mitigation measures which seek to:

- reduce impacts upon the external highway network
- identify potential for using non-car modes for travel to and from and between the sites
- identify enhancements to off-site pedestrian and cycle linkages to nearby residential areas
- reduce reliance on fossil fuels
- the opportunities for the use of LPG/electric buses on site
- provision of amenities/welfare facilities on site
- change to access points to reduce congestion
- pedestrian access to 'off site' temporary office facilities

6.28 The Transport Strategy will bring forward mitigation measures in the form of a Transport Assessment, Travel Plan, Traffic Management Plan and Car Park Management Plan.

Surface Water Strategy

6.29 In order to protect both on site and offsite water resources a single strategy will be prepared to deal with surface water run off both during construction and in the long-term end state. In particular it will demonstrate how the principle of sustainable drainage will be implemented and how this will reduce any potential flood risks.

Architectural Design Principles (ADP)

6.30 The ADP provides an opportunity to ensure that all replacement buildings are able to contribute significantly to sustainable development. The ADP therefore needs to incorporate specific measures for:

- Air Conditioning specifications (minimise use of ozone depleting substances)
- Sick Building Syndrome
- Energy efficiency
- Embodied energy of materials
- Environmental impact of materials specified
- Water efficient design

- Lighting specifications (e.g. low energy)

Recreational Study

6.31 The SDCP demonstrates the need to consider the long-term use of existing land which provides facilities for the Rec. Soc. located at AWE (A). A specific study will be undertaken which will:

- inform future requirements for green space and the functions which the Rec. Soc. provides; and
- how best to meet these requirements.

Communications Strategy

6.32 Many of the potential issues raised by the SSA will require more detailed and coordinated communication with key external stakeholders including the local community. A communications strategy will be prepared to ensure that issues likely to cause concern both to the statutory authorities and those who live and work around the two sites are identified and addressed. In particular specific measures such as establishing a Communities Liaison Manager will be described within the Strategy.

Code of Construction Practice

6.33 The AWE Construction Site Rules will be developed into a Code of Construction Practice, which will set out the strategy and principles under which all construction activities related to the SDCP will be managed.

6.34 It will incorporate the following:

- Control of Dust and Noise during demolition and construction
- Commitment to Cut and Fill Balance
- Commitment to locate all temporary construction facilities within the site
- Construction Welfare Facilities
- Temporary Drainage Facilities
- Waste Management Procedures, including reuse/recycle where possible
- Storage of hazardous substance

- Protection of protected species
- Investigation of known/unknown archaeological features prior to construction, especially along Roman Road
- Identification and protection of trees and 'green' features during construction
- Lighting during construction
- Health and Safety/Security Procedures, including induction for all construction workers
- Local Labour Initiatives

Construction Logistics Strategy

6.35 A Construction Logistics Strategy will be produced to set out the strategy to manage the movement of construction vehicles within the site and in the vicinity of the site. It will include:

- local suppliers
- volume and timing of heavy vehicles (material delivery and waste removal vehicles)
- construction traffic haul routes

Cumulative Effects Report

6.36 A key consideration highlighted by the SDCP and SSA relate to the potential effects arsing through the overall construction activity over the next 10 years together with the significant changes to the long term appearance of the sites.

6.37 It is, therefore, important to understand the overall cumulative effects of these issues so AWE plc can produce a coordinated mitigation strategy.

6.38 The Effects Report will provide an assessment of cumulative impacts of individual projects upon:

- Local communities (e.g. disturbance from construction vehicles)
- Local and regional economy and infrastructure
- The environment including landscape, ecology, archaeology and built heritage

6.39 It will incorporate:

- A detailed description of the baseline conditions of the site and surrounding area
- A detailed description of the proposed developments in terms of location, maximum size and height, likely occupancy, construction logistics and activities for those developments;
- Cumulative assessment of all the proposed projects
- Overall mitigation measures and strategies taking into account the development of strategies highlighted elsewhere in this report.

Appendix 1