LEAFLET 8: FLOOD AND WATER MANAGEMENT (including Coastal Change)

OVERVIEW

8-1 The UK National Security Strategy (NSS) 2010 *A Strong Britain in an Age of Uncertainty* highlights natural hazards such as floods as one of the national security priorities, together with terrorism, cyber attack and international military crises. The UK Climate Change Risk Assessment Government Report 2012 also identifies flooding as the most significant climatic risk across the UK, currently and in the short term.

8-2 Around one in six properties in the UK are currently at risk of flooding from surface water, rivers and the sea, whilst about 17% (3,000 km) of the UK coastline is eroding. Infrastructure critical to keeping the UK running is also at risk from flooding including transport, energy and water infrastructure. Flooding and coastal erosion can not be eliminated and the frequency and intensity of extreme events is projected to increase in the future.

8-3 Flooding can compromise the delivery of Defence outputs on MOD establishments both directly when it occurs on the defence estate and indirectly (e.g. if energy supplies or transport links are disrupted). The defence estate and defence activities need to be adapted to cope with projected increasing flood risk and other impacts of climate change.

8-4 The Keeping the Country Running: Natural Hazards and Infrastructure provides guidance to infrastructure owners and operators, emergency responders, industry groups, regulators, and government departments on how to work together to improve the resilience of critical infrastructure and essential services. Top Level Budgets (TLBs) and Defence Infrastructure Organisation (DIO) both have a role to play in ensuring that the defence estate is resilient to the direct and indirect impacts of current and future climate and to extreme weather events (including flooding), and in ensuring that effective business continuity procedures are in place.

SCOPE

8-5 Flood and water management relates to all types of inland flooding (groundwater, surface water and tidal) and flooding directly from the sea (coastal flooding). The scope of this leaflet covers the key strategic planning tools in place in the UK relating to flood and water management and coastal change and how they link to the MOD policy for resilience and managing climate change risks.

8-6 Actions are required to take account of flood risk and coastal change in MOD internal decision making processes and to influence national, regional and local flood and emergency frameworks to support defence business resilience. Action is also required where MOD is responsible for a structure, or a natural or man-made feature of the environment that by its existence, or location impacts on a flood or coast erosion risk.

MOD POLICY

Resilience – Business Continuity Planning

8-7. Defence establishments are required to have Site Resilience Plans. Threats and hazards to establishments and their outputs must be identified and mitigation actions are in place. Responsibility and accountability for the implementation and

maintenance of Business Continuity Management (BCM) arrangements within TLBs and Trading Funds is delegated to TLB Holders and Trading Fund Chief Executives.

8-8 Resilience draws on risk management practices in other processes and activities including security, safety, environmental hazards management and climate resilience.

Climate Resilience

8-9 The MOD Sustainable Development Strategy and MOD Departmental Adaptation Plan commit the Department to assessing climate change risks at defence critical establishments by 2013 and its remaining priority operational sites by 2015.

8-10 DIO is leading on the delivery of a prioritised programme of climate impact risk assessments on critical and priority operational defence sites using the MOD Climate Impacts Risk Assessment Method (CIRAM). Heads of Establishments (HoE) must ensure any resulting management actions arising from the CIRAM assessment are reflected within the establishment's BCM / Resilience Plan and other relevant management procedures.

MOD Climate Impacts Risk Assessment Method (CIRAM)

8-11 CIRAM assesses the risks and potential opportunities posed by current and projected impacts of climate or extreme weather events, including flooding and coastal change, on the outputs of MOD establishments and identifies actions required to maintain and optimise operational capability. CIRAM identifies:

- Existing vulnerabilities to weather related hazards;
- Whether existing vulnerabilities are likely to change over time;
- Any additional vulnerability likely to arise in future;
- The likely direct and indirect impacts on defence output;
- Actions and measures to build resilience into the defence function of the establishment and
- Any opportunities created by changes in climate.

8-12 CIRAM is applied on a site-by-site basis, analysing site specific information, other relevant data such as landslide risk from the British Geological Survey, and flood and coastal erosion data from Catchment Flood Management and Shoreline Management plans. Full details of the tool, plus worked examples can be found at CIRAM

8-13 Risks, actions and measures identified from the assessments should be built into MOD strategic planning processes and site development plans including Business Continuity Plans, Integrated Estate Management Plans (IEMP), Integrated Rural Management Plans and Area Housing Information Packs (AHIPS). Practitioner Guide 01/12 Building a Climate Resilient Estate provides guidance on how to build the outcomes of CIRAM into the establishment's existing plans and management procedures, as well as on how to monitor and evaluate them.

8-14 In addition to undertaking CIRAM assessments all new or revised policies, programmes (including acquisition programmes), office relocations, new projects and training activities must assess flood risk and coastal change impacts through the application of Sustainability Appraisals and any subsequent statutory environmental assessments.

UK Flood and Coastal Management

8-15 The Environment Agency (EA) in England and Wales, Scottish Environment Protection Agency (SEPA) in Scotland and Rivers Agency (RA) in Northern Ireland have the strategic oversight of all flood and coastal erosion risk management. The National Agencies are responsible for strategic policy on main rivers, the sea and reservoirs.
Local Authorities lead in managing local flood risks and have responsibility for strategic policy on other sources of flooding including surface runoff, groundwater and ordinary watercourse flooding.

8-16 The Floods and Water Management Act 2010 requires the designation of structures, and natural or man-made features that affect a flood or coast erosion risk. Designation places statutory duties on the owner of the structure or feature in terms of maintenance, alteration, removal or replacement.
A number of different management plans cover different aspect of flood and water management:-

- **Catchment Flood Management Plans (CFMPs) -** Provide an overview of flood risk associate with all types of inland flooding, from rivers, ground water, surface water and tidal flooding, but not flooding directly from the sea, (coastal flooding) for a specific area.

- **Shoreline Management Plans (SMPs) –** Provide an overview of risk associated with coastal process including tidal patterns, wave height, wave direction and movement of beach and seabed material for a specific stretch of coastline.

- **Surface Water Management Plans (SWMPs) –** Provide an outline of the preferred management strategy for a specific location in relation to flooding from sewers, drains, groundwater, runoff from land, small water courses and ditches that occurs as a result of heavy rainfall.

- **River Basin Management Plans (RBMPs) –** Identify the pressures on the water environment and what actions will be taken to address those pressures for a defined area.

- **Flood Risk Management Plans (FRMPs) –** Set the strategic direction for managing flooding for a defined area based on CFMPs, SMPs, SWMPs and Local Flood Risk Management Strategies

The Management Plans form a suite of strategic planning tools. The lead authority, whether a National Agency or Local Authority, have a duty to work with other key decision-makers and stakeholders to identify and agree policies for sustainable flooding risk management.

Catchment Flood Management Plans (CFMPs)

8-17 CFMPs give an overview of the flood risk across each river catchment. They identify areas where the risk is likely to increase significantly and where further action is needed. They recommend ways of managing those risks now and over the next 50-100 years.

8-18 CFMPs consider all types of inland flooding, from rivers, ground water, surface water and tidal flooding, but not flooding directly from the sea, (coastal flooding). They also take into account the likely impacts of climate change, the effects of how we use and manage the land, and how areas could be developed to meet our present day needs without compromising the ability of future generations to meet their own needs.

8-19 CFMPs will be used to help the National Agencies and their partners plan and agree the most effective way to manage flood risk in the future. CFMPs aim to promote more sustainable approaches to managing flood risk by identifying opportunities, where feasible, to store water and revert the catchment back to its natural estate, re-creating river corridors to increase space for the rivers to flow and flood more naturally.

8-20 Where MOD infrastructure is at risk from flooding, the HoE should ensure the establishment Business Continuity Plan takes account of the risks and whether these are likely to increase, consulting with the DIO Regional Planning Focal Point and engaging with the appropriate National Agency Regional Office to ensure defence interests are taken into account.

Surface Water Management Plans (SWMPs)

8-21 The purpose of a SWMP is to make sustainable surface water management decisions that are evidence and risk based, whilst taking climate change into account, and are inclusive of stakeholder views and preferences.

8-22 A SWMP outlines the preferred surface water management strategy in a given location including flooding from sewers, drains, groundwater, and runoff from land, small water courses and ditches that occurs as a result of heavy rainfall. The Lead Local Authority's responsibility in relation to a SWMP is to lead/convene its production, retain the SWMP and ensure that it is periodically reviewed and updated.

8-23 Local Authorities; National Agencies and Water and Sewerage Companies are the three key partners. Other Stakeholders can be brought into the SWMP process at different phases. Their involvement depends on whether they are affected by flooding or if they may be involved in implementing the proposed mitigation measures.

8-24 Where MOD infrastructure is at risk from surface water flooding directly or located in an area at risk, the HoE should ensure the establishment Business Continuity Plan takes account of the risks and whether these are likely to increase, consult with the DIO Regional Planning Focal Point and engage with the Lead Local Flood Authority to ensure defence interests are taken into account.

Shoreline Management Plans (SMPs)

8-25 A second generation of Shoreline Management Plans (SMPs) are currently in production, covering the entirety of coast in England and Wales and are planned for the rest of the UK coast. SMPs are being developed by Coastal Groups. The Groups are principally made up of local authorities and the National Agencies, one of whom adopts a leading role in co-ordinating the Coastal Group and writing the SMP for each stretch of coastline. The National Agency provides the strategic oversight for the production and quality control of SMPs.

8-26 SMPs provide a large-scale assessment of the physical risks associated with coastal processes and present a long term policy framework to reduce these risks to people and the developed, historic and natural environment in a sustainable manner. A SMP is a high level document that forms an important element of the strategy for flood and coastal erosion risk management.

8-27 SMPs will identify the most sustainable approaches to managing the risks to the coast in the short term (0-20 years), medium term (20-50 years) and long term (50-100 years). Within these timeframes, the SMPs will also include an action plan that prioritises what work is needed to manage coastal processes into the future, and where it will happen. This in turn will form the basis for deciding and putting in place specific flood and erosion risk management schemes, coastal erosion monitoring and further research on how we can best adapt to change.

8-28 Where MOD infrastructure is likely to be affected by coastal change the DIO Strategic Asset Management Team (SAPT) should engage through the DIO Planning Focal Point with the relevant Coastal Group to ensure defence interests are taken into account.

River Basin Management Plans (RBMPs)

8-29 River Basin Management Plans (RBMP) are the mechanism to manage the water environment in rivers, estuaries, coasts and aquifers. A second cycle of RBMP are to be completed by June 2015 and pilots are underway in England to explore how partnership working can help improve the water environment whilst managing flooding and drought risks. National Regulators would like to see all relevant local interests groups actively involved in the management of river catchment areas. For further information see the EA webpage 'Managing and improving the water environment'.

Flood Risk Management Plans (FRMPs)

8-30 The National Regulators are currently considering the approach to developing FRMPs. They will be largely based on CFMPs, SMPs, SWMPs and Local Flood Risk Management Strategies. FRMPs will set the strategic direction for managing flooding and will contain recommendations on what actions the National Regulators and others will need to take in the short (next 25 years), medium (the following 15 years) and long term (to the end of the century). A series of FRMPs are to be completed by December 2015. The FRMP for the Thames Estuary has already been published.

New Development

8-31 MOD developments need to comply with relevant planning policies. National planning policies set out the spatial planning policy on development and flood risk. Decisions on new development/change of use of the defence estate should not increase flood risk and take account of surface water flood risk and coastal change risk. Evidence from CFMPs, SWMPs and SMPs will inform regional and local planning strategies, and should be used to inform the location, layout and design of MOD developments. Environmental assessments and Sustainability Appraisals should also take these plans into account. See Sustainability and Environment Appraisal Tool for further detail.

8-32 Sustainable drainage systems (SUDS) should be utilised wherever practicable for new developments. Local Authorities have been given powers to adopt SUDS for new developments and redevelopments through a Section 106 Agreement of the

Town & Country Planning Act. Financial and property controls must be followed before entering an agreement for the adoption of SUDS on crown land.

Planning for Emergencies

8-33 To test preparedness for such emergencies, National Governments and Agencies (plus other partners) carry out national and local level exercises. The Cabinet Office led Capabilities Programme, seeks to build the capability of all key agencies responding to a range of serious emergencies, including flooding. In general terms governments expect civil agencies to have the capabilities to deal with most flooding emergencies, with the main Defence input being with the planning and preparing for those hazards and threats. When civil contingencies arise defence resources may be deployed in support of the civil authorities if Defence Ministers consider it appropriate. These could include making available elements of the defence estate to provide hard standings, storage, logistics hubs etc.

8-34 Multi Agency Flood Plans (MAFPs) are being developed by Local Resilience Forums (LRFs) to help organisations involved in responding to a flood work together to manage and minimise the impacts. This includes developing emergency, contingency and business continuity plans. Practitioner Guide 01/12 Building a Climate Resilient Estate provides further detail on LRFs. HoE need to ensure Site Business Continuity Planners understand the local threats and potential impacts and where appropriate input to the development and implementation of MAFPs.

Reporting

8-35 The primary mechanism for reporting progress in assessing and managing climate impact risks, including flooding and surface water management, is through the annual MOD Sustainable Development Report produced by DIO as Process Owner. TLBs are required to provide information to DIO on progress in delivering the MOD SD Strategy for their areas of responsibility.

ROLES AND RESPONSIBILITIES

8-36 The overall responsibility of Flood and Water Management in relation to Defence is collaboration between Ministers, TLBs and DIO. Ministers and TLBs are responsible for identifying defence capability and the level of resilience required.

8-37 Ministers and Senior Civil Servants

- MOD SD Strategy
- Report to Parliament on MOD climate change adaptation programmes
- Agreeing use of defence assets to support to civil authorities

8-38 TLBs

- Community Relations
- Military Aid to the Civil Authorities when authorised by Defence Ministers
- Business Continuity Planning and Management
- Site Resilience Plans
- Roll-out of CIRAM across their estate
- Identify defence critical and priority operational sites commission a prioritised programme of CIRAM assessment

- Actions and measures to build resilience into defence function of establishments
- Sustainability appraisals and statutory environmental assessments on revised policies, equipment programmes and training activities
- Liaising with DIO on infrastructure needs

8- 39 DIO

- Policy lead for flood and coastal management on the defence estate
- Making available elements of the defence estate when authorised by Ministers
- National engagement with National Governments and Agencies
- Regional engagement and co-ordination with the National Agencies on CFMP and Coastal Groups for SMP
- Local engagement with Lead Local Flood Authority on flood risk management and SWMP
- Implement prioritised programme of CIRAM assessments
- Sustainability appraisals and statutory environmental assessments on revised infrastructure policies, strategic asset management programmes (including development and relocation programmes)
- Provision, operation and management of defence infrastructure to support the agreed level of resilience
- Input to Defence contingency planning

APPLICABLE REFERENCES

Sustainability and Environmental Assessment Tool

8-40 The MOD Sustainability and Environmental Appraisal Tools Handbook is the single point of reference for the suite of appraisal tool methodologies used on Estates related plans, programmes, projects (P/P/Ps) and activities such as military training within MOD. It sets out guidance and methodologies for the suite of tools (or the 'Appraisal Tool Hierarchy').

Practitioners Guide - Building a Climate Resilient Estate

8-41 Practitioner Guide 01/12 Building a Climate Resilient Estate provides advice on how to manage climate impact risks so that the estate is resilient whilst not exacerbating the risks outside the wire. It also provides advice on how partnership working can help the MOD estate increase resilience to flooding, coastal change and other climatic issues.

Government Policies

8-42 Other Government policies that cover flood risk management taking into account climate change risks and adaptation include:

England

- National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied

- Technical Guidance to the National Planning Policy Framework. This document provides additional guidance to local planning authorities to ensure

the effective implementation of the planning policy set out in the National Planning Policy Framework on development in areas at risk of flooding.

- Floods and Water Management Act 2010 strengthens and extends existing flood and water legislation to address all sources of flooding, clarify responsibilities and facilitate flood risk management, whilst introducing measures for the improved sustainability of water resources including the avoidance of water scarcity.
- Flood Risk Regulations 2009 transposed the Floods Directive into law for England and Wales and came into force on 10 December 2009

Scotland

- Scottish Planning Policy is the statement of the Scottish Government's policy on nationally important land use planning matters.
- Flood Risk Management (Scotland) Act 2009 - includes the duty paced upon Scottish Ministers, SEPA, local authorities, Scottish Water and other responsible authorities to exercise their functions with a view to managing and reducing flood risk and to promote sustainable flood risk management.
- Planning Advice Note 69 - contains good practice advice on planning and building standards in areas where there is a risk of flooding.

Wales

- Planning Policy Wales - This document contains current land use planning policy for Wales. It provides the policy framework for the effective preparation of local planning authorities' development plans.
- Technical Advice Note (TAN) 15 - provides technical guidance which supplements the policy set out in Planning Policy Wales in relation to development and flooding.
- Floods and Water Management Act 2010 strengthens and extends existing flood and water legislation to address all sources of flooding, clarify responsibilities and facilitate flood risk management, whilst introducing measures for the improved sustainability of water resources including the avoidance of water scarcity.

Northern Ireland

- Planning Policy Statement, PPS 15 Planning and Flood Risk - sets out the planning policies to minimise flood risk to people, property and the environment.
- The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009 - transposed the Floods Directive into law for Northern Ireland and came into force on 14 December 2009.

FURTHER INFORMATION

Joint Services Publication JSP 503 MOD Business Continuity Management

Joint Doctrine Publication JDP 02 (2nd Edition) Operations in the UK: The Defence Contribution to Resilience
Environment Agency

Scottish Environment Protection Agency

Rivers Agency Northern Ireland

Contacts

8-43 Policy and advice on flood and water management is available from DIO Strategy & Policy, Environmental Policy (DIO StratPol-Policy4) on 94421 3693/0121 311 3693 or DIO Strategy & Policy Sustainable Development (DIO StratPol-SDEnergy1b1) on 9355 83523/01225 883523.