

Appendices

These appendices provide the supporting documentation for the Shoreline Management Plan. These documents illustrate the process undertaken in development of the management policies and are included to ensure that there is clarity and transparency in this process. The appendices are:

Appendix A SMP Development: This reports the history of development of the SMP, describing more fully the plan and policy decision-making process.

Appendix B Stakeholder Involvement: Details of the stakeholder involvement process are provided here, together with information arising from the consultation process.

Appendix C Baseline Process Understanding: Includes a baseline coastal process report, defence assessment, and No Active Intervention (NAI) and With Present Management (WPM) scenario assessments.

Appendix D Natural and Built Environment Baseline: This identifies the environmental features (human, natural, historical and landscape) in terms of their significance to the SMP.

Appendix E Issues & Objective Evaluation: Provides information on the issues and objectives identified as part of the Plan development, including appraisal of their importance.

Appendix F: Scenario Testing: Presents the policy assessment and objective achievement for both the No Active Intervention scenario and the preferred SMP2 policy.

Appendix G: Economic Appraisal: Presents the economic analysis undertaken in support of the Preferred Plan

Appendix H: Estuary Assessment: Examines the need or extent to which estuaries are included in the SMP process.

Appendix I: Appropriate Assessment: Provides the information needed for the competent authority to be able to carry out an Appropriate Assessment at the strategic level under the requirements of the EU Habitats Directive (92/43/EEC) and its implementation in the UK under the Conservation (Natural Habitats *et al.*) Regulations 1994 under Regulation 48(1).

Appendix J: Metadatabase and Bibliographic Database. This is provided to the operating authorities on CD.

Appendix K: Water Framework Directive Assessment: Provides an assessment required under the EU Water Framework Directive (2000/60/EC) to ensure that the preferred policies will not have an adverse impact on the ecological status or ecological potential of designated water bodies within the SMP2 area.

Appendix L: Non-Technical Summary for the Strategic Environmental Assessment: Provides a stand-alone non-technical summary of the Strategic Environmental Assessment, which has been integrated into this SMP2 document, as required by Directive 2001/42/EC of the European Parliament and of the Council, and the associated Environmental Assessment of Plans and Programmes Regulations 2004.

Appendix A

SMP Development

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A1 Introduction

This appendix provides a full explanation of the Shoreline Management Plan (SMP) process that has been adopted, including a description of the policy decision-making process and an outline of the chronology of the SMP development.

A1.1 What is the Shoreline Management Plan?

A Shoreline Management Plan (SMP) provides a large-scale assessment of the risks to the developed, historic and natural environment associated with coastal evolution and presents a policy framework to address these risks in a sustainable manner.

The SMP is a non-statutory, policy document for coastal defence management planning. It takes account of other existing planning initiatives and legislative requirements, and is intended to inform wider strategic planning. It is important to note that it does not set policy for anything other than coastal defence management. However, from this perspective, it aims to provide the context to, and consequence of, management decisions in other sectors of coastal management.

A1.2 Background to the Northumberland and North Tyneside SMP

The coastline between St. Abb's Head and the River Tyne was previously assessed by consulting engineers Royal Haskoning (then known as Posford Duvivier) in the first generation Shoreline Management Plan in 1998. Based upon the relevant guidance at the time, policies were defined for a 50 year period.

As a recommendation from the original SMP, a programme of monitoring and inspection of the coast has been undertaken by Royal Haskoning since April 2002. Data and information from this programme has been extremely useful in contributing to the present SMP review.

A1.3 The SMP Review

Recognising the need for review of the existing SMP policies, the Northumbrian Coastal Authorities Group commissioned Royal Haskoning to revise the SMP for the coastline between the Scottish Border and the River Tyne. The review was commissioned to take account of:

- Coastal strategies and studies undertaken since the previous SMP;
- Results from the ongoing programme of monitoring and inspections since April 2002;
- Revisions to the Defra Procedural Guidance for SMPs (including the need to define policy for 20, 50 and 100 year timeframes);
- Changes in legislation such as the Water Framework Directive and the Habitats Directive.

A2 Project Information

A2.1 SMP Background

The development of the present SMP2 has been undertaken in accordance with the latest Procedural Guidance (PG) for the production of SMPs, as published by Defra.

A2.2 Project Management Group

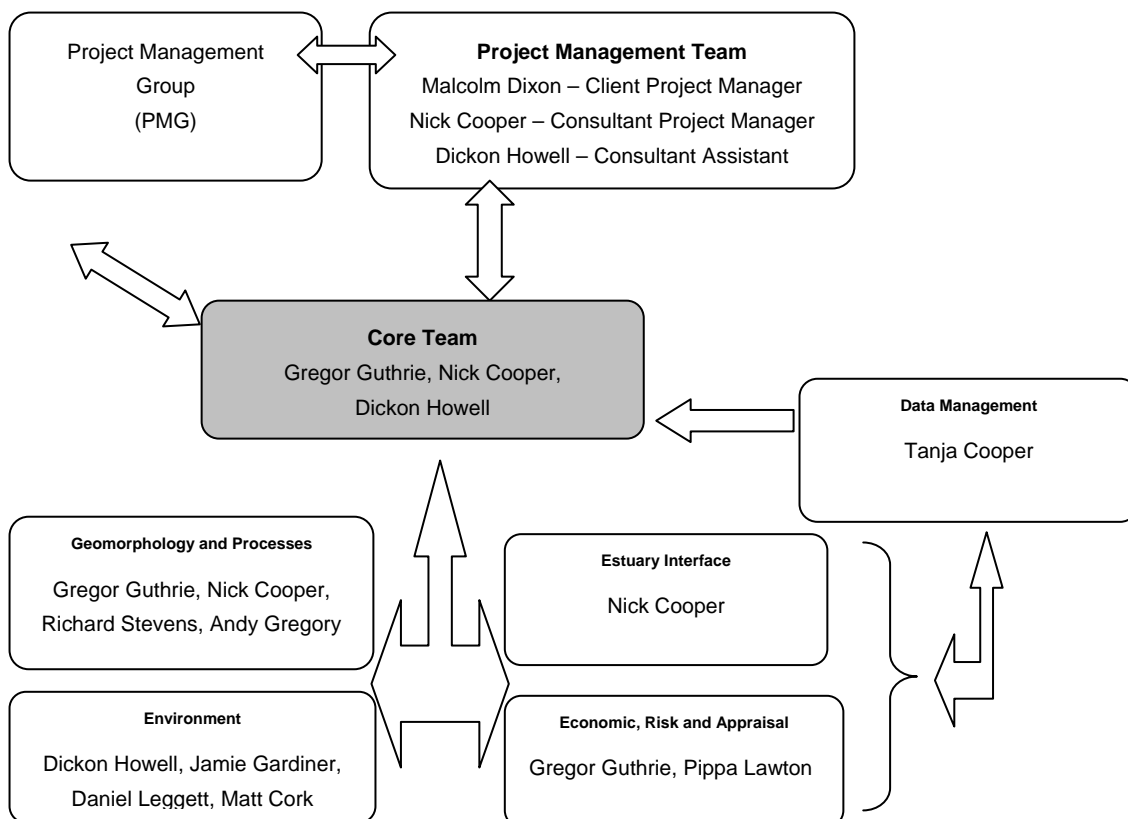
The coastline covered by this plan presently comes within the boundaries of six local authorities. They and the Environment Agency have certain permissive powers for defending the coast. The local authorities generally manage risks from erosion of the coast by the sea and the Environment Agency generally manages risks from sea or river flooding. Together these organisations are required to produce an SMP for sustainable coastal defence management. This is achieved through the SMP Project Management Group (PMG) comprising representatives from the six local authorities, the Environment Agency and other key bodies such as Natural England and the Northumberland Coast Area of Outstanding Natural Beauty, both of whom provide guidance on nature conservation, earth science heritage and landscape value. Core members of the PMG are listed below:

Name	Organisation
Chris Budzynski	Berwick upon Tweed Borough Council
Philip Briggs	Alnwick District Council
Sam Talbot	Castle Morpeth Borough Council
Andy Rutherford	Castle Morpeth Borough Council
Trevor Straker	Wansbeck District Council
Malcolm Dixon	Wansbeck District Council
Terry Gurr	Blyth Valley Borough Council
Peter Woods	North Tyneside Council
Graham Sword	North Tyneside Council
Ian Hodge	Environment Agency
Mike Quigley	Natural England
Tom Cadwallender	Northumberland Coast AONB
Nick Cooper	Royal Haskoning (Consultant Project Manager)
Greg Guthrie	Royal Haskoning
Dickon Howell	Royal Haskoning
Jamie Gardiner	Royal Haskoning

It was agreed that Wansbeck District Council (WDC) would act as the lead authority on behalf of the PMG and as such were responsible for the financial management of the project, including grant aid submission and overall project administration. The Project Management Group (PMG) had overall responsibility for the delivery of the SMP and was involved throughout the development of the plan through review and guidance of work undertaken. The core members of the PMG will also oversee implementation of the SMP recommendations.

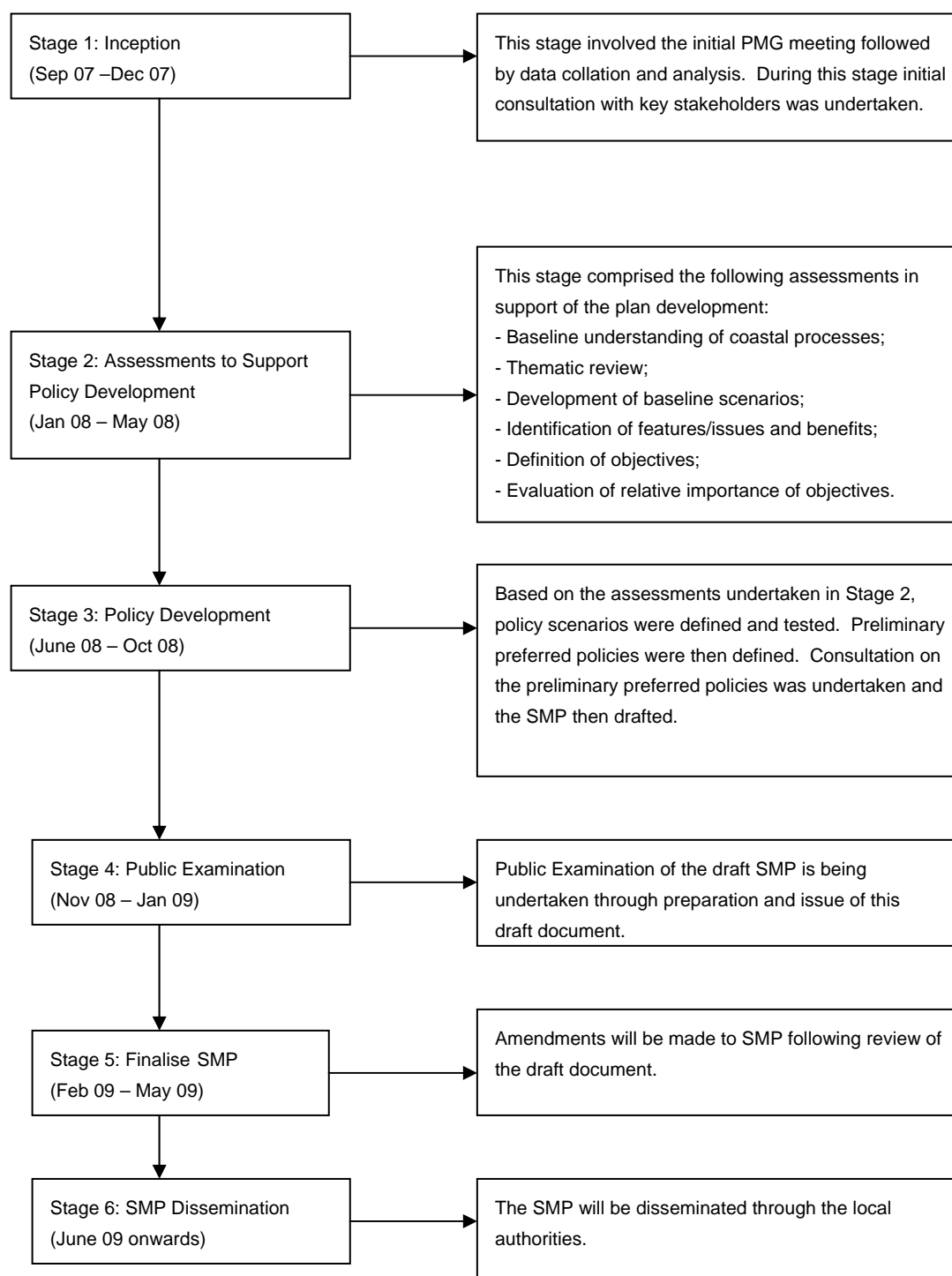
A2.3 The Consultant

Royal Haskoning was commissioned by WDC to undertake the preparation of the SMP. Royal Haskoning's team structure is set out below. There was a small core team to ensure continuity and coherence throughout the project. Around this core, and incorporating as appropriate the specific skills required for particular tasks, was a range of other contributors.



A3 SMP Programme

The following Figure illustrates of the different stages of the SMP process.



A4 Stage 1: SMP Scope

A4.1 SMP Boundaries

This SMP relates to 'Coastal Sediment Sub-cell 1a', covering the area on the north east coast of England between the Scottish Border and the River Tyne. The original SMP covered the coastline further north to St. Abb's Head in Scotland, but due to changes in administration over the past decade the present SMP only extends to the Scottish Border.

A4.2 Stakeholder Engagement Strategy

The stakeholder engagement for the SMP is described in detail in Appendix B. This was an important part of the SMP process.

A4.3 Data Collection

Data was collected from a variety of sources including stakeholders, local authorities, literature searches and web searches.

Key data sources included:

- Data from the existing SMP
- Coastal process and coastal defence data from the ongoing monitoring programme

Base data:

- OS mapping data
- SAR imagery
- Aerial photographs

Defence data:

- Strategy Studies
- Outputs from the 2008 inspections undertaken as part of the ongoing monitoring programme

Thematic data:

- MAGIC website
- English Nature
- English Heritage
- Nature Conservation Designation information
- Futurecoast (shoreline features and dynamics)
- Studies/reports
- Site visits
- LGA Local Plans

Local and regionally specific data:

- Strategy Studies
- LGA Local Plans
- Stakeholder questionnaires and supporting information
- Technical reports

A5 Stage 2: Assessments to Support Policy Development

A5.1 Baseline Understanding of Coastal Behaviour and Dynamics

(a) Assessment of coastal processes and evolution

A desktop baseline review of coastal processes was produced using existing data (refer Appendix C). The baseline review includes statements on sediment sources, transport and sinks control and hydrodynamic interactions, shoreline movement and predictions of shoreline evolution. It underpins coastal process understanding of the study area and is the basis for the development of the baseline scenarios.

(b) Assessment of coastal defences

Coastal defence data was collated from the 2008 inspections undertaken as part of the Northumbrian Coastal Monitoring programme.

A5.2 Baseline Scenarios

To assist in the development of future policy, future coastal response was assessed, assuming the following two baseline scenarios:

- 'No Active Intervention' (NAI) for which it is assumed that existing defences are no longer maintained and will deteriorate and fail with time or undefended frontages will evolve naturally; and
- 'With Present Management' (WPM) for which it is assumed that defences are maintained to provide a similar level of protection and defence to that currently provided. These assessments provide an understanding of the influence of defences on coastal behaviour and evolution.

These findings of the baseline scenarios were developed from the baseline processes report and the defence data. In addition, key references included Futurecoast, strategy studies, coastal protection survey and the existing SMP.

- The study frontage was divided into a number of areas, based on coastal processes and shoreline position was estimated for the three epochs of 20, 50 and 100 years (taking sea level rise into account).
- The predicted shoreline positions for the three epochs were mapped on GIS.
- Summary statements were produced for both 'No Active Intervention' and 'With Present Management' outlining the estimated erosion rates and the residual life of the defences that the estimated shoreline position was based upon.
- The mapped shoreline positions show the estimated maximum extent of change and are a combination of evidence from monitoring or comparison of historical maps together with geomorphological interpretation.

A5.3 Definition of Features, Benefits and Issues

(a) Natural and Built Environment Baseline (Theme Review)

In the first instance, many of the important features along the coastline were identified during the theme review. The theme review involved drawing information from the existing SMP's and the newly procured data regarding the following themes:

- Landscape and nature conservation
- Historic environment
- Current and future land use.

The full Natural and Built Environment Baseline is included in Appendix D.

From this baseline, features of historical, cultural, recreational and environmental value were identified and mapped on GIS. For the purposes of the SMP a feature was defined as:

Something tangible that provides a service to society or benefits society by its existence.

It was essential to first identify the features on the coast in order to be able to then identify the 'issues' or concerns relating to these features and subsequently develop 'objectives' or what we are aiming to achieve or support through the development of shoreline management policies.

(b) Stakeholder Consultation

The first round of stakeholder consultation was utilised to not only inform the stakeholders of the what the SMP process entailed, but also to find out from them what 'features' they valued on the coast and any 'issues' or concerns they had. This was undertaken by handing out and collecting responses to a question sheet at the consultation meetings (refer Appendix B).

(c) Issues Table

From the theme review and the stakeholder consultation, the Issues Table was developed (refer Appendix E). The Issues Table outlined the following elements:

- Location
- Feature
- Issues associated with feature
- Is it a flood and coastal defence issue?
- Does this issue affect policy?

The Issues Table was issued to the PMG for review.

A5.4 Definition of Objectives

The next stage was to use the features, issues and benefits identified to define objectives within the context of the characterisation of the coast. The objectives were aimed to state simply and succinctly what we aimed to achieve with regard to each feature through the coastal defence management policies.

Further consultation with members of the PMG was undertaken in determining the objectives to ensure that the SMP objectives were consistent with other planning documents and aspirations for the coast.

Objectives are used in two ways within the development of the SMP; first to guide the selection of policy options (the reasons for management), the second at the end of the process to assess the degree to which any SMP policy scenario delivers aim of the SMP.

A5.5 Identification of Flood and Erosion Risks

The mapping of predicted shoreline change for the 'No Active Intervention' scenario along with the Environment Agency's 'Flood Zone' data was used as a baseline against which features at risk, from coastal flooding and erosion, were identified. This approach highlighted what features were potentially at risk in 0-20 years, 20-50 years and 50-100 years.

A5.6 Characterisation of the Coast

An important step in this development was to gain an appreciation the overall character of different areas of the coast. This would then set the broad context or overarching principles within which more specific objectives for coastal defence management could be sensibly developed and considered. A characterisation of the coast was, therefore, prepared on the basis of local planning documents, the theme review, discussions with PMG members and the consultation responses. The characterisation of the coast comprised a general description and derivation of key values for an area. In addition, the key environmental designations were identified, together with an initial identification of features at risk based on a policy of no further intervention. A brief assessment was also considered as to the degree to which the coast wishes to change; the inherent pressure any intervention on the coast would bring about. The characterisation was reviewed by the project partners and commented upon during the consultation period. Refer Appendix B for the Characterisation of the Coast.

A6 Stage 3: Policy Development

A6.1 Definition of Policy Scenarios

In developing policy, therefore, a nested approach was taken, maintaining the overview, while still addressing usefully the more local issues in setting policy. The approach looked to define overarching aims, in part from the characterisation, over certain sections of the coast through which more detailed policies may be developed for shorter sections of the coast.

The two baseline scenarios of no active intervention and that of present management were used to explore where specific issues and objectives were not being addressed. This consideration being undertaken at a relatively high level within relatively long sections of the coast (called for convenience Policy Development Zones).

From this initial analysis primary drivers or controls were identified; where evident, and the basic interactions established. In many cases this then allowed quite obvious policies to be derived. However, where this was less clear, specific alternative scenarios were considered often at a more detailed level. Consideration of these scenarios has then been argued such that a preferred approach to management of the coast emerged. From this individual policy units were then defined.

The approach applies the basic principles set out in the Guidance:

- The process is clearly objective led.
- That the definition of policy and policy units is taken at the end of the analysis process, not predefining units at the start.
- That distinction is made relevant to each specific area of the coast as to prioritising objectives and that an initial screening process was undertaken at a high level to ensure essential objectives were considered initially.
- That, while able to consider the detailed issues important to direct coastal management, the broader picture of how the coast functions was maintained.

A6.2 Policy Scenario Assessment

The final stage of the policy development was a detailed assessment of the policies in relation to the individual objectives. In association with this, economic data was obtained using the MDSF system and this together with information from various strategy studies was assessed to consider the economic cost effectiveness of the preferred policies.

The whole process maintains the broader awareness of how the coast as a whole is behaving and how policy may be used to develop a sustainable shoreline management in the future.

A7 Stage 4 Public Examination

A draft SMP2 was developed for purposes of public examination of the content. The public examination ran from 1st November 2008 to 31st January 2009.

A8 Stage 5: Finalise Plan

The issues raised during the public examination were considered in developing the final SMP2 (this document).