

# Severn Estuary Shoreline Management Plan Review

Appendix K: Bibliographic Database



## Severn Estuary Shoreline Management Plan Review (SMP2)



## **Appendix K: Bibliographic Database**

### December 2010

## **Document History – Bibliographic Database**

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## Contents

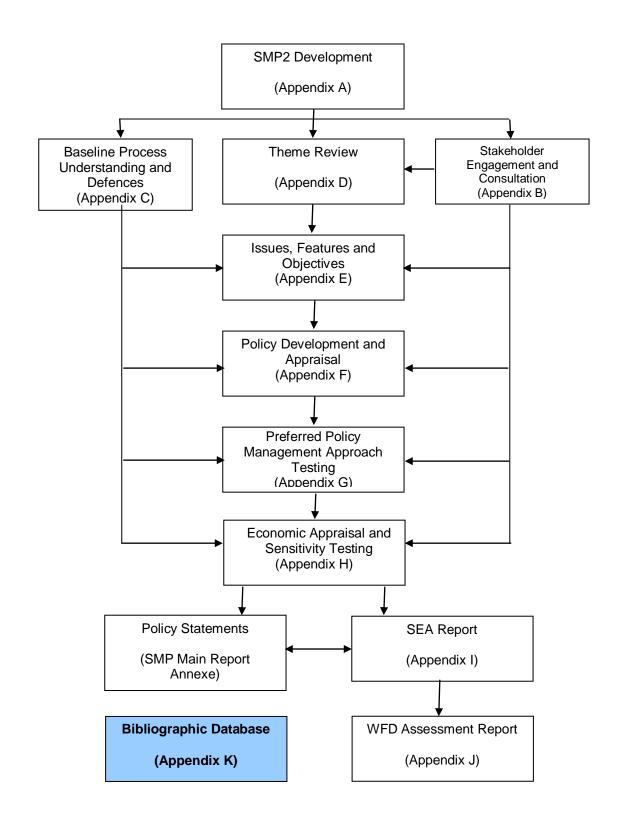
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## **Supporting Appendices**

Information required to support the Severn Estuary Shoreline Management Plan Review (SMP2) is provided in the following appendices. These supporting documents offer transparency to the decision making process that is undertaken, leading to explanations and reasoning for the promoted policies.

K: Bibliographic Database	All supporting information used to develop the SMP is references for future examination and retrieval.
J: Water Framework Assessment Report	Provides a retrospective assessment of the policies defined under the Severn Estuary SMP2 highlighting future issues for consideration at policy implementation stage.
I: Strategic Environmental Assessment Report	Presents the various items undertaken in developing the Plan that specifically relate to the requirements of the EU Council Directive 2001/42/EC (the Strategic Environmental Assessment Directive), such that all of this information is readily accessible in one document. This includes work to help towards a Habitat Regulatory Assessment (HRA).
H: Economic Appraisal and Sensitivity Testing	Presents the economic analysis undertaken in support of the Preferred Plan.
G: Preferred Policy Management ApproachTesting	Presents the policy assessment of appraisal of objective achievement towards definition of the Preferred Plan (as presented in the Shoreline Management Plan document).
F: Policy Development and Appraisal	Presents the consideration of generic policy options for each frontage identifying possible acceptable policies and their combination into 'Management Approaches' for testing. Also presents the appraisal of impacts upon shoreline evolution and the appraisal of objective achievement.
E: Issues, Features and Objectives	The features of the shoreline are listed within this report. A series of strategic objectives are then set along with commentary on the relative importance of each feature identified.
D: Theme Review	The identification and evaluation of the natural landscape and conservation, the historic environment and present and future land use of the shoreline.
C: Baseline Understanding of Coastal Behaviour and Dynamics, Coastal Defences and Baseline Scenario Report	This report includes detail of coastal dynamics, defence data and shoreline scenario assessments of NAI (No Active Intervention – defences are not maintained, repaired or replaced allowing the shoreline to evolve more naturally) and With Present Management (WPM) i.e.: SMP1 Policy.
B: Stakeholder Engagement and Consultation	Stakeholder communication is continuous through the SMP2 process, comments on the progress of the management plan are recorded within Appendix B.
A: SMP2 Development	The history, structure and development of the SMP are detailed this report. The investigation and decision making process are explained more fully to outline the procedure to setting policy.

The information presented in each appendix is supported and guided by other appendices; the broad relationships between the appendices are illustrated overleaf.



## Overview to the Appendix

This appendix is divided into 2 Parts:

- Part A Documents and Reports
- Part B Metadata or Digital Information

Part A includes a list of the key references used in the production of the Severn Estuary SMP2 reports and appendices. The bibliographic report is separated based on the reports produced. The reports listed below represent documents, sources of information or published papers that have been referred to throughout the study, though not necessarily cited.

Part B includes all geographically referenced or mapped data used with this SMP.

Full details on the consultation documents can be found on the SECG website, <a href="http://www.severnestuary.net/secg/smpr.html#2">http://www.severnestuary.net/secg/smpr.html#2</a>

## 1. PART A – Documents and Report

#### 1.1 Main SMP2 Document

Burgess, KA and Townend, I.H. (2004). 'The Impact of Climate Change Upon Coastal Defence Structures.' 39<sup>th</sup> Defra Conference of River and Coastal Engineers, Defra, London.

Conservation (Natural Habitats &c.) Regulations 1994 (as amended) and the Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007.

Defra (2001), 'Shoreline Management Plans: A Guide for Coastal Defences Authorities.'

Defra (2003), 'Procedural Guidance for Production of Shoreline Management Plans – Interim Guidance.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

Defra (2007), 'Development of Estuary Morphological Models, FD2107'

Defra & Environment Agency (2007), 'Coastal Strategic Overview – Implementation Plan,' http://www.defra.gov.uk/environ/fcd/policy/strategy/ha1aimp.pdf

Defra (2008), 'Ensuring the UK's Food Security in a Changing World, A Defra Discussion Paper, Queen's Printer and Controller of HMSO,' http://www.defra.gov.uk/foodrin/pdf/Ensuring-UK-Food-Security-in-a-changing-world-170708.pdf

Defra (2008), 'Social Justice in the Context of Flood and Coastal Erosion Risk Management: A Review of Policy and Practice,' R&D Technical Report FD2605/TR, Authors: Clare Johnson, Sylvia Tunstall, Sally Priest, Simon McCarthy and Edmund Penning-Rowsell.

English Heritage, (2006), 'Shoreline Management Plan Review and the Historic Environment: English Heritage Guidance.'

English Heritage/Gloucestershire County Council (2008), **Severn Estuary Rapid Coastal Zone Assessment, Phase 1 Report** 

Fernandez-Bilbao, A., Woodin, S., Richardson, J., Zsamboky, M., Bose, S., Orr, P., Twigger-Ross, C., Colbourne, L., (2009), **Understanding the Processes for Community Adaptation and Planning (CAPE) on the Coast**, R&D Technical Report FD2624/TR, Defra/EA Joint Publication

Gifford Associated Consultants, (2000), 'Severn Estuary SMP1 Second Formal Consultation Document 2.1 Lavernock Point to the Wye.'

Gifford Associated Consultants, (2000), 'Severn Estuary SMP1 Vol.1 Data, Issues and Objectives.'

MAFF (2000), 'Flood and Coastal Defences Project Appraisal Guidance (PAG) 5: Environmental Appraisal.'

Natural England, (2005), 'Our Coasts and Seas – Making Space for People, Industry and Wildlife.'

Natural England & the Countryside Council for Wales' (2009), 'The Severn Estuary / Môr Hafren European Marine Site' Severn Estuary SAC, SPA and Ramsar Site: Regulation 33

ODPM (2005), 'A Practical Guide to the Strategic Environmental Assessment Directive.'

Office of Science and Technology (2004), 'Foresight: Future Flooding.'

Office of the Deputy Prime Minister (2006), 'Planning Policy Statement 7: Sustainable Development in Rural Areas,' TSO,

http://www.communities.gov.uk/documents/planningandbuilding/pdf/147402.pdf

WAG, (2002), 'Planning Policy Wales,' WAG, Cardiff,

http://wales.gov.uk/desh/publications/planning/ppw/ppw2002e.pdf?lang=en

WAG, (2008), 'Guidance for the Preparation of Shoreline Management Plan in Wales.

### 1.2 Appendix A: SMP2 Development

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

Gifford Associated Consultants, (2000), 'Severn Estuary SMP1 Second Formal Consultation Document 2.1 Lavernock Point to the Wye.'

Gifford Associated Consultants, (2000), 'Severn Estuary SMP1 Vol.1 Data, Issues and Objectives.'

## 1.3 Appendix B: Stakeholder Engagement Strategy and Consultation

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

Defra (2009), 'Adaptation and Resilience - reducing the impact of flooding and coastal erosion and adapting to the effects of climate change,'

http://www.defra.gov.uk/environ/fcd/adaptationandresilience/default.htm

## 1.4 Appendix C: Baseline Process Understanding

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

#### 1.4.1 Part A

The References/Bibliography for the Baseline Understanding of Coastal Behaviour, Dynamics and Defences report are included within the document (Appendix C) produced by ABP Marine Environmental Research Ltd.

#### 1.4.2 Part B

ADAS, (1994), 'Gwent Levels Sea Defence Aerial Survey.'

Arup (2007), 'Bristol Urban Beach Flood Risk Assessment,'

Atkins W.S., (1998), 'Caldicot Levels Sea Defence Improvements. Scoping Study, Volumes 1 and 2.' Report No. AW5683.240/SW-CW/RT-01. September 1998.

Atkins W.S., (1998). 'Peterstone Gout to Outfall Lane Replacement Wave Recurve Wall.' Engineers Report. Report No. AW5762.350/SW-CW/RT-01.

Atkins, W.S., (2000). 'Caldicot Levels Sea Defence Improvements. Design Parameters Report'. AK4021/WA/RT-01.

Atkins W.S., (2001). 'Caldicot Levels Sea Defence Improvements. Wave Overtopping Analysis.' Report No. AK4021/WA/RT-02.

Atkins W.S., (2001). 'Detailed Topographic Survey of the Caldicot Levels Sea Defences (Extended to the Wentloog Levels).' Volumes 1 & 2, Report No. AK4021/WA/RT-04.

Atkins W.S., (2001). 'The Gwent Levels Foreshore Management Plan. LiDAR Verification.' Report No. AW5762.220/SW-CW/RT-04.

Atkins W.S., (2001). 'The Gwent Levels Foreshore Management Plan. Phase III Methodology.' Report No. AK4048.040/WA/RT-01.

Atkins W.S., (2001). 'Wentlooge Levels Sea Defences. Wave Overtopping Analysis.' Report No. AK4048.010/WA/RT-01.

Atkins, (2002). 'New Gout Sea Defence, Tredegar Pill. Feasibility Study'. Report No. 5001760/DG/RT-02.'

Atkins, (2002). 'Wentloog Levels Sea Defences. Standard of Service Assessment.' K4048.010/WA/RT-02.

Atkins, W.S., (2002). 'Gwent Levels Foreshore Management Plan. Holistic Analysis of Foreshore Evolution. Interim Report. Volume 1: Text, Tables and Plates. Volume 2: Figures and Appendices. Report No. AK4065.500/DG06.' February 2002.

Atkins, W.S., (2002). 'Gwent Levels Foreshore Management Plan. Holistic Analysis of Scheme and Monitoring Options. Interim Report 2. Report No. AK4065.500/DG07.' December 2002.

Atkins, (2003). 'River Ebbw Slip Project Appraisal Report.'

Atkins, (2004). 'Rumney Great Wharf Feasibility Study Report.' 5022208/DG/RT-02. Rumney Great Wharf PAR. 5022208/DG/RT-02.

Atkins (2004), 'Gwent Levels Flood Management Plan'

Atkins (2005), 'Clevedon to St Thomas' Head Sea Defence - Strategic Overview'

Atkins, (2005). 'Avonmouth to Aust Tidal Defence Scheme Sea Defence Topographic Survey Data'.

Atkins, (2006). 'Avonmouth to Aust Tidal Defence Scheme Coastal Inundation Modelling Report'.

Atkins, (2006). 'Avonmouth to Aust Tidal Defence Scheme Foreshore Evolution Report'.

Atkins, (2006). 'Avonmouth to Aust Tidal Defence Scheme Geo-environmental Ground Investigation Interpretive Report, Stage 2 Report'.

Atkins, (2006). 'Feasibility Study on Recycling of Dredged Sediment, Rumney Great Wharf.'

Atkins, (2007). 'Bristol Channel wave-tide flood warning system'

Atkins (2009), 'Severn Estuary Flood Risk Management Strategy'

Blackdown Consultants Ltd, (1998). 'Gwent Levels Foreshore Management Plan. Project Appreciation, letter report to the Environment Agency – Wales.' February 1998.

Environment Agency, (2002). 'Uphill Sluice Flood Defence Scheme.'

EA (2006), 'Tidal Severn Flood Risk Management Strategy'

EA (2008), 'Wye and Usk Catchment Flood Management Plan'

Halcrow (2008), 'Tidal Usk Flood Risk Management Strategy'

HR Wallingford, (1991). 'Caldicot and Wentlooge Levels, Cardiff. A study of surface water drainage with urban development. Phase 1. Existing development.' Report EX2370.

HR Wallingford, (1992). 'Wentlooge Levels. Project Study Report (drainage, seawall overtopping and seawall stability).' Report EX2511. June 1992.

HR Wallingford, (2000). 'Gwent Levels Sea Defences. Joint Probability Analysis of Large Waves and High Water Levels.' Report EX4283. December 2000.

HR Wallingford, (2001). 'North Middle Grounds, Severn Estuary. Study of Effects of Proposed Dredging Report EX4374. June 2001.

HR Wallingford, (2003). 'North Bristol Deep (Area 470) Severn Estuary. Study of effects of proposed dredging. Final Report.' Report EX4669. February 2003.

HR Wallingford, (2003). 'North Middle Ground, Severn Estuary. Study of effects of proposed dredging: revised report.' Report EX4724. February 2003.

HR Wallingford, (2004). **Dredging Application: Areas 455 and 459 North Middle Ground, Severn Estuary. Environmental Assessment-Supplementary Report**. Report EX5059. November 2004.

HR Wallingford, (2004). **Dredging Application: Bedwyn Sands. Environmental Assessment-Supplementary Report**. Report EX5028. August 2004.

HR Wallingford, (2004). North Bristol Deep (Area 470) Severn Estuary. Study of effects of proposed dredging. Supplementary Report: Effects on Wave conditions. June 2004.

Hubbard J.C.E. and Stebbings R.L., (1967). **Distribution, Dates of Origin and acreage of Spartina Townsendii (.1) Marshes in Great Britain**. Proc. Bot. Soc. Br. Isles 7. pp. 1-7.

John Chatterton Associates, (2001). 'Caldicot Levels Sea Defence Strategy Plan: Benefit Assessment.'

Kirby R., (1990). Sediment Problems Arising from Barrage Construction in High Energy Regimes: An Example from the Severn Estuary. In: Developments in Tidal Energy, Proceedings of the Third Conference on Tidal Power, The Institution of Civil Engineers, November 1989. pp 233-244.

O'Brian D., (1998). **The Sediment Dynamics of a Macro Tidal Mudflat in Varying Timescales**. PhD Thesis held at UWCC Science Library, Department of Geology.

Parker W.R. and Kirby R., (1982). **Sources of Transport Patterns o Sediment in the Inner Bristol Channel and Severn Estuary**. Severn Barrage Proceedings of Symposium held at the Institution of Civil Engineers, London.

Posford Duvivier Ltd and ABP Research & Consultancy Ltd, (2000). **Bristol Channel Marine Aggregates: Resources and Constraints Research Contract. Final Report**.

Rippon S., (1996). **Gwent Levels: The Evolution of a Wetland Landscape**. Council for British Archaeology Report 105, pp.148.

Severn Tidal Power Group, (1989). **Severn Barrage Project, Detailed Report, Vol 1- Tidal Hydrodynamics, Sediments, Water Quality, Land Drainage and Sea Defences**. Department of Energy, ETSU TID 4060-P1.

Stride A.H. and Belderson R.H., (1991). Sand transport in the Bristol Channel East of Bull Point and Worms Head: A Bed Load Parting Model with Some Indications of Mutually

**Evasive Sand Transport Paths**. Marine Geology., 101: 203-207. Elsevier Science Publishers B.V., Amsterdam.

#### 1.4.3 Part C

ABP Research and Consultancy Ltd (2000), 'Gwent Levels Hydraulic Modelling Study.

Objective A: Joint Probability Surge Tide and Wave Analysis.' Volume 1: Text, Schedules, Figure and Flowcharts. Volume 2: Appendices. Report No. 818.

ABP Research and Consultancy Ltd, (2000). **Gwent Levels Hydraulic Modelling Study. Objective B: Spatial Mapping of Wave and Tidal Energy Dissipation along the Foreshore.**Volume 1: Text. Report No. 818.

ABPmer, (2000). Gwent Levels Delft3D model

ABPmer, (2006). 'Joint Probability Analysis of Waves and Water Levels Report.'

Allen J.R.L (1992), 'Tidally Influenced Marshes in the Severn Estuary, Southwest Britain.' Pp. 123-147. In: Allen J.R.L. and Pye K (1992), 'Saltmarshes: Morphodynamics, Conservation and Engineering Significance,' Published by the Cambridge University Press.

Allen J.R.L., (1990). Salt-marsh growth and stratification: A Numerical Model with Special Reference to the Severn Estuary, Southwest Britain. Marine Geology, 95 (1990) pp. 77-96.

Allen J.R.L., (1991). 'Fine sediment and its sources, Severn Estuary and Inner Bristol Channel, Southwest Britain.' Sedimentary Geology, 146, pp. 147-171.

Allen J.R.L., (1992). Large-scale Textural Patterns and Sedimentary Processes on Tidal Salt Marshes in the Severn Estuary, Southwest Britain.

Allen J.R.L., (1994). A Continuity-based Sedimentological Model for Temperate-zone Tidal Salt Marshes. Journal of the Geological Society, Vol. 151, 1994, pp.41-49.

Allen J.R.L., (1995). Salt-marsh Growth and Fluctuating Sea Level: Implications of a Simulation Model for the Flandrian Coastal Stratigraphy and Peat-based Sea Level Curves. Sedimentary Geology, 100 (1995) pp.2-45.

Allen J.R.L., (1998). The Occurrence, Character and Implications of Late Holocene Palaeo Channels on the Coast of the Gwent levels. Postgraduate Research Institute for Sedimentology, University of Reading.

Allen J.R.L., (1999). The Stratigraphy of the Holocene and Related Deposits in the Gwent Levels. I- The Wentloog Level. Postgraduate Research Institute for Sedimentology, University of Reading.

Allen J.R.L., (1999). **The Stratigraphy of the Holocene and Related Deposits in the Gwent Levels. II- The Caldicot Level**. Postgraduate Research Institute for Sedimentology, University of Reading.

Allen J.R.L., (2000). Holocene coastal lowlands in NW Europe: Autocompaction and Uncertain ground. In Coastal and Estuarine Environment: Sedimentology, Geomorphology and Geoarchaeology. Geological Society, London Special Publications 175.

Atkins W.S., (1999). 'Gwent Levels Foreshore Management Plan. Geological Database.' Report No. AW5762.410/SW-CW/RT-02.

Atkins W.S., (1999). 'Gwent Levels Foreshore Management Plan. Volume 1a: Analysis of Historic Foreshore Changes. Volume 1b: Figures: Volume 2: Historical O.S. Maps and Early Aerial Photographs: Volume 3: Aerial Photographs.' Report No. AW5762.410/SW-CW/RT-01.

Atkins W.S., (1999). **The Gwent Levels Foreshore Management Plan. Wave and Water Levels Recording**. Report No. AW5762.220/SW-CW/RT-02.

Atkins, (2001). 'North Middle Grounds (Areas 455 and 459), Severn Estuary. Coastal Impact Study Review.'

Atkins, (2003). 'Bedwyn Sands. Coastal Impact Study Review.'

Atkins, (2003). 'North Middle Ground Report. Coastal Impacts Study Review.'

Atkins, (2004). **Gwent Levels Foreshore Management Plan**. Benefits Assessment. AK4065/DG/RT-09.

Atkins, (2004). 'Gwent Levels Foreshore Management Plan. Holistic Analysis of Foreshore Evolution, Scheme and Monitoring Options.' Phase III Final Report. AK4065.500/DG/08. Atkins, (2004). 'Gwent Levels wave overtopping models.'

Atkins, (2006). 'Geomorphological Assessment of the Foreshore between the River Usk and River Wye'.

Atkins, (2006). 'Newport to Chepstow Tidal Strategy. Inundation Modelling report.'

Atkins, (2006). 'Newport to Chepstow Tidal Strategy. Strategy Report.'

BBC (2009), 'Spectators run from Severn Bore,'

http://news.bbc.co.uk/1/hi/england/gloucestershire/7882858.stm

Belderson R.H. and Stride, A.H., (1966). 'Tidal Current Fashioning of a Basal Bed. Marine Geology.' 4. pp. 237-257.

British Geological Survey (Coastal and Engineering Geology Group), (1998). 'Post Glacial History of the Lower Severn Estuary.' Report submitted to the Environment Agency Wales.

Burd, F., (1989). 'The saltmarsh survey of Great Britain. An inventory of British saltmarshes.'

Collins M.B., (1987). 'Sediment Transport in the Bristol Channel.' Proceedings of the Ussher Society, 7. pp. 107-111.

Countryside Council for Wales. Aerial Photographic Set of the Severn Estuary: Scale 1:1000; Colour Stereoscopic Pairs; (Captured in August, 1999).

Dargie T., (1999). '**NVC Survey** of Saltmarsh Habitat in the Severn Estuary 1998.' CCW Contract Science Report No. 341. CCW Contract No. FC 73-01-217. March 1999.

Dent, S., (2000). 'The current status and recent history of Spartina Anglica in the Severn Estuary between Newport and Cardiff.'

Dixon and Tawn, (1997). 'Estimates of Extreme Sea Conditions. Spatial Analyses for the UK Coast (POL112).'

EA Southwest Region, (2003). 'Report on Regional Extreme Tide Levels.'

Halcrow, (2002). FutureCOAST (1 Report CD, 1 South West coastline map).

Higgins, Russell (2007), 'The Severn Bore Pages,' http://www.severn-bore.co.uk/

Kirby R., (1992). Effects of Sea-level rise on Muddy Coastal Margins. Dynamics and Exchanges in Estuaries and in the Coastal Zone, D. Prandle, ed., Am. Geophys. Union, Washington, D.C. pp. 313-334

Kirby R., (1994). The Evolution of the Fine Sediment Regime of the Severn Estuary and Bristol Channel. Biological Journal of the Linnean Society, 51. pp. 37-44.

R. Kirby PhD, CGeol and T. L. Shaw PhD, FICE, FIWEM (2004), 'Severn Barrage, UK—environmental reappraisal,' ICE

Lee S. and Mehta, (1997). **Problems in Characterizing Dynamics of Mud Shore Profiles**. Journal of Hydraulic Engineering. April 1997.

Mettam, C., (1983). **An estuarine mud flat re-surveyed after forty-five years**. Oceanology Acta. Proceedings 17th European Marine Biology Symposium, Brest, France, 27th September – 1st October, 1982. pp. 137-140.

Murray et al., (1976). **Sediment in the Severn Estuary during the past 8000 – 9000 years**. Journal of the Geological Society of London, 150. pp. 385-398

Ian Shennan and Ben Horton (2002), 'Holocene land- and sea-level changes in Great Britain,' Journal of Quaternary Science,' 17(5-6) 511–526

### 1.5 Appendix D: Theme Review

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.' Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

#### 1.5.1 Reports

ABPmer, Royal Haskoning (2006), 'Severn Estuary Coastal Habitat Management Plan.'

Arup (2007), 'Bristol Urban Beach Flood Risk Assessment,'

English Heritage (2003), 'Coastal Defence and the Historic Environment: English Heritage Guidance.'

Environment Agency (2008), 'Severn Tidal Tributaries Catchment Flood Management Plan.'

English Heritage (2006), 'Shoreline Management Plan Review and the Historic Environments: English Heritage Guidance.'

English Heritage/Gloucestershire County Council (2008), Severn Estuary Rapid Coastal Zone

#### Assessment, Phase 1 Report

Gifford Associated Consultants, (2000), 'Severn Estuary SMP1 Second Formal Consultation Document 2.1 Lavernock Point to the Wye.'

Gifford Associated Consultants, (2000), 'Severn Estuary SMP1 Vol.1 Data, Issues and Objectives.'

Haycock Associates (2007), 'Westbury Court Garden: Future Challenges,' The National Trust, Dr Lindsay Ness, Tom Heath and Lucy Procter-

Nicholls

Natural England (2005), 'Our Coasts and Seas – Making Space for People, Industry and Wildlife'.

#### 1.5.2 Websites

Bristol City Council (accessed: 2009), www.bristol.gov.uk.

Cardiff City Council (accessed: 2009), www.cardiff.gov.uk.

Countryside Council for Wales (accessed: 2009), www.ccw.gov.uk.

English Nature (accessed: 2009), www.english-nature.org.uk.

GGAT (accessed: 2009), www.ggat.org.uk.

Gloucester City Council (accessed: 2009), www.gloucester.gov.uk/Home.aspx.

Natural England (accessed: 2009), http://www.natureonthemap.org.uk/map.aspx.

Newport City Council (accessed: 2009), www.newport.gov.uk/\_dc/index.cfm.

Wye Valley Area of Outstanding Natural Beauty (accessed: 2009), www.wyevalleyaonb.org.uk/

### 1.6 Appendix E: Issues, Features and Objectives

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

EA (2008), Severn Tidal Tributaries Catchment Flood Management Plan

English Heritage/Gloucestershire County Council (2008), Severn Estuary Rapid Coastal Zone

Assessment, Phase 1 Report

Gifford Associated Consultants, (2000). 'Severn Estuary Shoreline Management Plan. Phase II: Non-technical Summary.'

Gifford Associated Consultants, (2000). 'Severn Estuary Shoreline Management Plan. Phase II: Volume 1: Data, Issues and Objectives.'

### 1.7 Appendix F: Policy Development and Appraisal

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

EA (2008), Severn Tidal Tributaries Catchment Flood Management Plan

Environment Agency (2008), Severn Tidal Tributaries Catchment Flood Management Plan

Environment Agency (2008), 'Severn CFMP'

Environment Agency (2008), 'Avon Catchment Flood Management Plan,'

Environment Agency (2008), 'Wye Catchment Flood Management Plan,'

## 1.8 Appendix G: Preferred Scenario Testing

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

## 1.9 Appendix H: Economic Appraisal and Sensitivity Testing

Atkins (2006). 'Avonmouth to Aust Tidal Defence Scheme Coastal Inundation Modelling Report.'

Defra (2004), 'NADNAC National Appraisal of Defence Needs and Costs Study.'

Defra (2006), 'Shoreline management plan guidance, Volume 1: Aims and requirements.'

Defra (2006), 'Shoreline management plan guidance, Volume 2: Procedures.'

Defra (2008), 'Flood and Coastal Defence Appraisal Guidance Economic Appraisal Supplementary Note to Operating Authorities: Valuation of Agricultural Land and Output for Appraisal Purposes.'

EA (2007), 'Flood Risk Management Estimating Guide Unit Cost Database.'

Middlesex University, Flood Hazard Research Centre, (1993). **Wentlooge Levels Benefit Cost Analysis**, October 1993.

## 1.10 Appendix I: Strategic Environmental Assessment Report

ABPMer and Jacobs, Severn Estuary ChaMP 2007.

Atkins (2003) Gwent Levels Foreshore Management Plan Phase III

Byron, H. (2000). **Biodiversity Impact: Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes**. RSPB, WWF-UK, English Nature and the Wildlife Trusts. Sandv

CCW, EA, EN, UKCIP, Levett-Therivel sustainability consultants, CAG, ECI (2004) **Strategic Environmental Assessment and Climate Change: Guidance for Practitioners.** May 2004.

Defra (2004) Guidance on Water Level Management Plans for European Sites, Defra, London,

2004.

Defra (2006), 'Shoreline Management Plan Guidance, Volume 1: Aims and Requirements.'

Defra (2006), 'Shoreline Management Plan Guidance, Volume 2: Procedures.'

English Heritage/Gloucestershire County Council (2008), **Severn Estuary Rapid Coastal Zone** 

#### Assessment, Phase 1 Report

Gifford Associated Consultants, (2000). 'Severn Estuary Shoreline Management Plan. Phase II: Non-technical Summary.'

Gifford Associated Consultants, (2000). 'Severn Estuary Shoreline Management Plan. Phase II: Volume 1: Data, Issues and Objectives.'

Gwent County Council (1996) **Gwent Structure Plan 1991 – 2006: Adopted Structure Plan**, March 1996.

Monmouthshire Biodiversity Partnership (2005) **Monmouthshire Local Biodiversity Action Plan**, Monmouthshire County Council and the Countryside Council for Wales, co-ordinated, distributed, collated and edited by the Monmouthshire Biodiversity Partnership, Cwbran, July 2005.

National Audit Office (2001) **Inland Flood Defence: Report by the Comptroller and Auditor General** *HC 299,* Session 2000-2001: 15 March 2001. The Stationery Office, London, 2001.

National Assembly for Wales (2000) **Wales: Changing Climate, Challenging Choices – a Scoping study of climate change impacts in Wales**. Edited by Farrar, JF and Vase, P, University of Wales, Bangor, May 2000.

Newport County Borough Council (1999) **Newport Unitary Development Plan 1996 – 2011**; Deposit Plan, November 1999.

Office for National Statistics, 2004 (WWW)

http://www.wales.gov.uk/keypubstatisticsforwalesfigures/content/population/2003mye-la.htm

National Statistics (WWW): http://www.neighbourhood.statistics.gov.uk

Maclean, I.M.D., Austin, G.E., Rehfisch, M.M., et al. In press. Global warming causes rapid changes in the distribution and abundance of birds in winter. Global Change Biology.

Royal Haskoning (2003) *The North Wessex Proto-Champ.* Royal Haskoning, 2003 Babtie Brown & Root, River Severn Strategy A Flood Management Strategy For the River Severn Corridor Scoping Report January 2002 Project Ref. No. 5009

Thomas, C.D. and Lennon, J.J. (1999). Birds extend their ranges northwards. Nature, 399, 213. **Tidal Severn Flood Management Strategy Scoping Report** 7th November 2002 Babtie Brown & Root

'White Consultants (2008) **Regional Seascape Assessment for Wales, CCW Policy Research report** (08/03).

## 2. Part B: Mapped Data

Shape files for project-generated GIS layers can be obtained from the Members Area of the SECG website. To access this data, contact SECG via the Severn Estuary Partnership - Severn@cardiff.ac.uk

Metadata can be downloaded from the SECG website - www.severnestuary.net/secg

### 2.1 Main SMP Document – Policy Maps

**Basemapping (Communication, Topography and Coastline).** Map information based upon the Ordnance Survey, 1:50,000 & 1:250,000 Raster tiles (provided under licence, © Crown Copyright) Environment Agency Licence number 100026380, 20090901

Present Coastline. Defined from Ordnance survey mapping at 1:10,000

**Indicative Erosion Lines**. Data generated using Appendix C which contains the details of coastal dynamics, defence data and shoreline interactions that have supported the SMP2 development.

**Indicative Erosion Zones**. Data generated using Appendix C which contains the details of coastal dynamics, defence data and shoreline interactions that have supported the SMP2 development.

**Change in MHWS Outlines**. Data generated by calculating the change in MHWS using UKCIP02 predictions for sea level rise and information on the height of the land. More information on the figures used is contained in Appendix C.

**National Nature Conservation Sites**. For clarity of presentation, this combined datasets for National Nature Reserves & SSSI sites.

**International and National Nature Conservation Designation**. For clarity of presentation, this combined datasets for SPA, SAC & Ramsar sites.

**Important Heritage Sites**. For clarity of presentation, this included on Scheduled Ancient Monuments and Grade 2 listed buildings and above.

Policy Unit boundaries. These were defined as part of the SMP and mapped accordingly

## 2.2 No Active Intervention' Flood and Erosion Maps

Basemapping (Communication, Topography and Coastline)

Map information based upon the Ordnance Survey 1:10,000 Raster Tiles (provided under licence, © Crown Copyright) Environment Agency Licence number 100026380, 20090901

Present Coastline. Defined from Ordnance survey mapping at 1:10,000

**Indicative Erosion Lines.** Data generated using Appendix C which contains the details of coastal dynamics, defence data and shoreline interactions that have supported the SMP2 development.

**Indicative Erosion Zones.** Data generated using *Appendix C* which contains the details of coastal dynamics, defence data and shoreline interactions that have supported the SMP2 development.

**Change in MHWS Outlines.** Data generated by calculating the change in MHWS using UKCIP02 predictions for sea level rise and information on the height of the land. More information on the figures used is contained in *Appendix C*.

### 2.3 Theme Maps

**Data obtained from the MAGIC website.** A number of data sets were obtained from the government website MAGIC (Multi-Agency Geographic Information for the Countryside). These datasets were obtained in 2009. Copyright information is available on the website: <a href="https://www.magic.gov.uk">www.magic.gov.uk</a>

**Data obtained from Countryside Council Wales.** A number of data sets were obtained from Countryside Council for Wales (http://www.ccw.gov.uk/) These datasets were obtained in 2009:-

- ANOB;
- Country-Parks;
- Heritage Coast;
- Local Nature Reserves (LNR);
- National Parks;
- National Nature Reserves (NNR);
- Ramsar;
- Special Areas of Conservation (SAC);
- Special Protection Areas (SPA);
- Sites of Special Scientific Interest (SSSI).

**Data obtained from Natural England**. A number of data sets were obtained from Natural England. (http://www.naturalengland.org.uk/) These datasets were obtained in 2009:-

- ANOB;
- Country-Parks;
- Heritage-coast;
- Local Nature Reserves (LNR);
- National Parks;
- National Nature Reserves (NNR);
- Ramsar:
- Special Areas of Conservation (SAC);
- Special Protection Areas (SPA);
- Sites of Special Scientific Interest (SSSI);

## Data obtained from CADW (Welsh Assembly Government) & Glamorgan Gwent Archaeology Trust (GGAT)

- Heritage Environment Records (HERS) were provided by CADW & GGAT;
- (http://www.cadw.wales.gov.uk/) & (http://www.ggat.org.uk/);
- HER Listed Buildings (Grades I,II & II\*);
- Scheduled Ancient Monuments;
- Historic Parks & Gardens;
- Non scheduled archaeological sites;

#### **Data Obtained from English Heritage**

- English Heritage/Gloucestershire County Council (2008), Severn Estuary Rapid Coastal Zone Assessment, Phase 1 Report Datasets
- Heritage Environment Records (HERS) were provided by English Heritage (http://www.english-heritage.org.uk/);
- HER Listed Building (Grades I,II & II\*);
- Scheduled Ancient Monument;
- Historic Parks & Gardens;
- Non scheduled archaeological sites.