

Environment Agency
In partnership with



enhancing... improving... cleaning... restoring...
changing... tackling... protecting... reducing...
create a better place... influencing... inspiring...
advising... managing... adapting...

Pagham to East Head Coastal Defence Strategy Consultation Report

Consultation Report A01
October 2008

Document History

| Project : Pagham to East Head Coastal defence Strategy | | | | | |
|--|-----------|--|-------|--------|-------|
| Jacobs Ref: B0354200 | | | | | |
| Rev | Date | Description | Orig. | Chk'd | App'd |
| R01 | 12 /09/08 | Initial draft for Strategy team Review | RT | TWF/DL | |
| R02 | | Partial inclusion of Team comments | RT | | |
| R03 | | Working draft between JP and RT | RT | | |
| R04 | | All team comments addressed | RT | JP | |
| A01 | | For general release | | | |

Intentionally blank for double-sided printing

Table of Contents

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION | 5 |
| 1.1 | Consultation Activities..... | 6 |
| 1.1.1 | Consultation document..... | 6 |
| 1.1.2 | Consultation Draft of Pagham to East Head Coastal Defence Strategy..... | 6 |
| 1.1.3 | Consultation Website..... | 6 |
| 1.1.4 | Exhibitions..... | 7 |
| 1.1.5 | Meetings..... | 7 |
| 1.1.6 | Community activities..... | 7 |
| 2 | SUMMARY OF CONSULTATION RESPONSES | 9 |
| 2.1 | Public Responses..... | 9 |
| 2.1.1 | Consultation process..... | 9 |
| 2.1.2 | Funding..... | 10 |
| 2.1.3 | Flood and Coastal Erosion Risk Management Policy..... | 12 |
| 2.2 | Statutory Body Responses..... | 14 |
| 2.2.1 | Arun District Council..... | 14 |
| 2.2.2 | Chichester District Council..... | 14 |
| 2.2.3 | West Sussex County Council..... | 15 |
| 2.2.4 | English Heritage..... | 15 |
| 2.2.5 | Natural England..... | 16 |
| 2.3 | Community Group Responses..... | 16 |
| 2.3.1 | Manhood Peninsula Partnership..... | 16 |
| 2.3.2 | Manhood Peninsula Steering Group..... | 16 |
| 2.3.3 | Save Our Selsey..... | 17 |
| 2.4 | Going Dutch II workshop..... | 17 |
| 2.4.1 | Issues raised..... | 18 |
| 2.4.2 | Response from the strategy team..... | 18 |
| 2.5 | Utility companies..... | 20 |
| 2.5.1 | Portsmouth Water..... | 20 |
| 2.5.2 | Southern Water..... | 20 |
| 2.5.3 | Scottish and Southern Energy and Southern Gas Networks..... | 21 |
| 3 | SUMMARY OF SPECIFIC FRONTAGE RESPONSES | 22 |
| 3.1 | Pagham..... | 22 |
| 3.1.1 | Issues raised..... | 22 |
| 3.1.2 | Response from the strategy team..... | 24 |
| 3.1.3 | Outstanding Issues..... | 25 |
| 3.2 | Selsey..... | 27 |
| 3.2.1 | Issues raised..... | 27 |
| 3.2.2 | Response from the strategy team..... | 28 |
| 3.2.3 | Outstanding Issues..... | 28 |
| 3.3 | Medmerry..... | 30 |
| 3.3.1 | Issues raised..... | 30 |
| 3.3.2 | Response from the strategy team..... | 33 |
| 3.3.3 | Outstanding Issues..... | 35 |
| 3.4 | East Wittering and Bracklesham..... | 36 |
| 3.4.1 | Issues raised..... | 36 |
| 3.4.2 | Response from the strategy team..... | 37 |
| 3.4.3 | Outstanding Issues..... | 37 |
| 3.5 | Cakeham..... | 38 |

Pagham to East Head Coastal Defence Strategy – Consultation Report

| | | |
|----------|---|-----------|
| 3.5.1 | Issues raised | 38 |
| 3.5.2 | Response from the strategy team..... | 38 |
| 3.5.3 | Outstanding Issues..... | 38 |
| 3.6 | West Wittering | 40 |
| 3.6.1 | Issues raised | 40 |
| 3.6.2 | Response from the strategy team..... | 42 |
| 3.6.3 | Outstanding Issues..... | 43 |
| 4 | CONCLUSIONS | 45 |
| 5 | REVISED STRATEGY PREFERRED OPTIONS | 46 |
| 5.1 | Pagham..... | 46 |
| 5.2 | Selsey..... | 47 |
| 5.3 | Medmerry | 48 |
| 5.4 | East Wittering and Bracklesham..... | 49 |
| 5.5 | Cakeham | 49 |
| 5.6 | West Wittering | 50 |
| 6 | WHAT HAPPENS NEXT | 51 |

Appendices

Appendix A – Consultation document and FAQs

Appendix B – Key responses

Chichester District Council
Manhood Peninsula Partnership – Going Dutch II
Manhood Peninsula Steering Group
Natural England
Save Our Selsey
West Sussex County Council
HR Wallingford Review of Going Dutch II proposals for beach recharge
Malcolm Bray Review of Going Dutch II proposals for beach recharge

Abbreviations and notation

| | |
|----------------|--|
| BAP | Biodiversity Action Plan. A national plan for a key habitat or species approved by Government as part of the UK Biodiversity Action Plan. |
| CPRE | Campaign for the Protection of Rural England A charitable organisation which campaigns for a sustainable future for the English countryside. |
| Defra | Department for Environment, Food and Rural Affairs the Government department which has overall policy responsibility for flood and coastal erosion risk in England. |
| EHWG | <p>East Head Working Group</p> <p>The group has been formed of key stakeholders to consider the issues and develop an agreed approach to managing East Head and the adjacent coastline. The group is composed of the following members:</p> <ul style="list-style-type: none"> • Chichester District Council; • Chichester Harbour Conservancy; • Environment Agency; • F.G. Woodger Trust • National Trust (landowner); • Natural England; • West Wittering and Cakeham Manor Estates (landowners); • West Wittering Parish Council. <p>This group has now become the East Head Coastal Issues Advisory Group.</p> |
| EHCIAG | East Head Coastal Issues Advisory Group evolved from the East Head Working Group to develop the Adaptive Management Plan. |
| Going Dutch II | A three day workshop was organised by the Manhood Peninsula Partnership. The MPP, which includes local authorities and agencies involved in the Peninsula and local representatives, invited 22 Dutch and British coastal spatial planners, engineers and environmentalists to consider and comment on the coastal issues over the strategy area. Going Dutch II followed an earlier Going Dutch workshop held in 2001. |
| ICZM | Integrated Coastal Zone Management is the term often used to describe the way in which the diverse activities and interests in the coastal and marine environment are co-ordinated, managed and delivered. The objective is to establish sustainable levels of economic and social activity in our coastal areas whilst protecting the coastal environment. |

| | |
|-------------|---|
| MPP | Manhood Peninsula Partnership. The Manhood Peninsula Partnership is a community group established following the initial 'Going Dutch' workshop that took place in March 2001. The MPP aims to involve the local community of the Manhood Peninsula in shaping the long term future of the area, especially in the light of Climate Change and rise in sea level. The Partnership Steering Group consists of representatives with statutory responsibilities within the Manhood Peninsula area and two project leaders who have close links with the local community. Chichester District Council and West Sussex County Council are both represented on the Steering Group and support the initiative. |
| MPSG | Manhood Peninsula Steering Group, The Manhood Peninsula Steering Group is a community group formed in July 2007, at the suggestion of Andrew Tyrie MP. It brings together a wide audience of representatives such as local residents groups, businesses and land owners from across the peninsula. It's aims are to consider alternative options for sea defences and engage with the authorities to find the most appropriate form of defence for a sensible timeframe. |
| NRG | The National Review Group. The formal group set up in the Environment Agency charged with reviewing all flood and coastal erosion risk management submissions nationally. The group makes recommendations for their formal approval. |
| Ramsar Site | Wetland habitat adopted following the Ramsar Convention on Wetlands of International Importance. |
| RSPB | Royal Society for Protection of Birds |
| SAC | Special Area of Conservation: Internationally important nature conservation site, designated in accordance with the EC Habitats Directive 1992. |
| SOS | Save Our Selsey is a community group formed in January 2007 in response to public concerns regarding the long term future of sea defences around urban Selsey and the surrounding and interconnected coastal frontages. The group exists to act as a public voice in consultation with the planning authorities (for sea defences) and now represents over 1,450 residents or members of the community. |
| SPA | Special Protection Area - Internationally important nature conservation site especially for birds; designated under the European Community Wild Birds Directive 1979 (79/409/EEC). |
| SSSI | Sites of Special Scientific Interest (SSSI): land notified under the Wildlife and Countryside Act 1981 (as amended, especially by the Countryside and Rights of Way Act) as being of special nature conservation interest. SACs, SPAs and Ramsar sites are also classified as SSSI. These are a national level designation. |

1 INTRODUCTION

This report summarises this recent consultation and the responses received. It goes on to identify how the strategy is being modified to accommodate the issues raised in developing the final strategy. This report will be used to present the feedback from the consultation to the Operating Authorities to enable them to approve the modified strategy recommendations

The Environment Agency working in Partnership with Arun and Chichester District Councils (collectively referred to as the Operating Authorities) is developing a Flood and Coastal Erosion Risk Management Strategy for the West Sussex coastline between Pagham and East Head. The Operating Authorities recognised early on that wide community engagement was required. The main objectives were:

- To raise community awareness and understanding of the flood and erosion risks on the coast both now and in the future;
- To explain the policy framework under which flood and coastal erosion risk management is undertaken; and
- To outline the potential solutions available to manage the risks and also to obtain local knowledge to help inform the appraisal process.

This engagement was particularly important as some of the proposed options could result in a significant change in how the area is managed. A structured approach to this consultation was planned involving two public consultation exercises

Between 15th November 2006 and 31st March 2007 the Operating Authorities held an initial consultation with the local community and key stakeholders to raise awareness of the local flood and erosion risks. Feedback was sought on the indicative preferred options, that had been identified by a technical review of the risks and possible options. During the consultation members of the strategy team met over 1,200 people at exhibitions and workshops and received almost 2,000 responses. Many of these responses opposed the indicative preferred options, in particular at East Head.

Responses and reaction to the initial consultation and the messages it brought, highlighted areas and activities where the project team needed to focus further effort in engaging communities. During the initial consultation the East Head Working Group was formed of key stakeholders in the area to consider the issues at East Head and West Wittering. Community action groups such as Save Our Selsey (SoS) also formed to encourage community involvement in the development of the draft strategy

In the months that followed the initial consultation, the Operating Authorities used community responses to develop the draft strategy. The formal responses helped to shape the draft strategy and develop frontage options. As the draft strategy was developed, the strategy team continued to meet with a number of community groups and mailed a newsletter to all residents in order to keep the local community informed of strategy progress.

The draft strategy was issued for public consultation from 29th May 2008 to 29th August 2008.

1.1 Consultation Activities

The consultation ran for twelve weeks between 29th May 2008 and 29th August 2008. It involved a variety of activities to promote public discussion of the draft strategy and was advertised widely in the local media.

1.1.1 Consultation document

The main tool for initially engaging with local residents and key stakeholders was the draft strategy summary document. Community feedback during the initial consultation highlighted how people valued the document that was issued in 2006. At the start of the draft strategy consultation, the Operating Authorities produced over 4,000 copies of the strategy summary document and made them widely available from venues across the strategy area. Copies of the document were also available as a download from the consultation website.

The document was designed to inform people of the key issues and to explain the recommendations of the draft strategy. The strategy team attempted, wherever possible, to make the document clear and plain English with as much detail as the public requested. It provided details of how to obtain further information, listed dates and venues for the four exhibitions and encouraged feedback to the draft strategy. A copy of the document is included in Appendix A to this report.

1.1.2 Consultation Draft of Pagham to East Head Coastal Defence Strategy

The draft strategy is a much larger document (200 pages excluding the appendices). This full strategy document provides a summary of the appraisal undertaken, placing it within a strategic context, and sets out the technical, environmental and economic basis for the strategy recommendations. The document was supported by several technical appendices including, an economic summary, coastal processes overview and a formal Strategic Environmental Assessment (SEA).

Although the draft strategy summary was made widely available for consultation, the strategy team recognised that some people and groups would want to read the full text. Hard copies were made available for viewing during the consultation exhibitions, at local libraries and at the Operating Authority offices in Littlehampton, Chichester and Worthing. Electronic copies were also available on disk for anyone on request. The full draft strategy and appendices were available as a download from the consultation website.

1.1.3 Consultation Website

The consultation was also advertised on the Environment Agency website under 'Current consultations'. There were links to this website from both the partner websites at Chichester and Arun District Councils. In addition to encouraging the public to participate in the draft strategy consultation, the website contained downloadable copies of:

- the consultation document
- the full draft strategy including appendices
- a set of Frequently Asked Questions with answers, which were updated periodically throughout the consultation period.

The website also listed details for all four exhibitions. The consultation document and list of Frequently Asked Questions with responses are included within Appendix A.

1.1.4 Exhibitions

Four public exhibitions were held across the strategy area. Strategy team members were on hand to discuss any issues raised by the draft strategy and answer residents' questions. The exhibitions were open from 1pm to 8pm to allow residents with a variety of personal schedules a chance to attend. Over 1,000 people attended the exhibitions, as shown in the table below. At the exhibition we asked people to mark a map showing where they lived. Figure 1 shows the combined attendance from all four exhibitions.

| Exhibition Location | Attendance |
|---|---------------|
| 19 th June – St. Ninians Church Hall, Pagham | 414 attendees |
| 20 th June – Selsey Town Hall, Selsey | 172 attendees |
| 4 th July – West Wittering Cricket Pavilion, West Wittering | 294 attendees |
| 6 th August – Selsey Town Hall, Selsey | 158 attendees |

1.1.5 Meetings

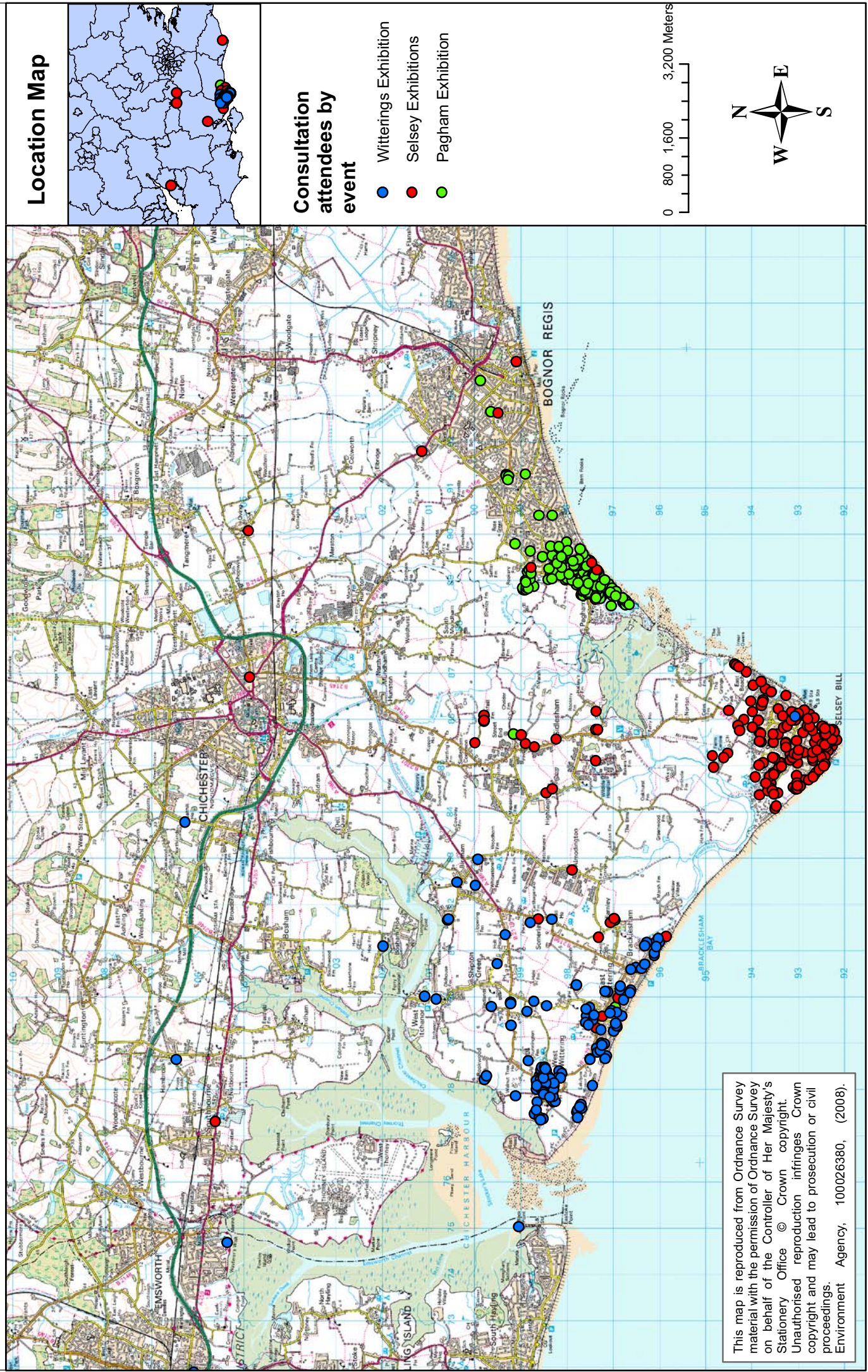
Meetings and workshops were arranged with local Parish, Town, District and County Councils, and community groups, such as the Manhood Peninsula Steering Group, Save Our Selsey and the Manhood Peninsula Partnership. The strategy team held meetings with residents and landowners at Medmerry and Ham to discuss the implications of the draft strategy recommendations.

1.1.6 Community activities

The strategy team would like to acknowledge the efforts made by the District, Town and Parish Councils who, along with various community groups and individuals within the study area, actively encouraged residents to participate in the consultation. Both of the area's local MPs, Andrew Tyrie and Nick Gibb have been actively involved in the issues raised by the draft strategy including chairing community groups.

The Manhood Peninsula Partnership organised a three day conference involving Dutch engineers and spatial planners to review the strategy and consider potential solutions (Going Dutch II). This is discussed in section 2.4 of this report.

Figure 1 - Strategy Consultation Attendees



This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
 Environment Agency, 100026380, (2008).

2 SUMMARY OF CONSULTATION RESPONSES

This section covers the general responses received from the public during the draft strategy consultation period. The strategy team received responses by post, by email and at exhibitions. These responses are listed below under the following headings related to:

- the consultation process
- funding for future works
- flood and coastal erosion risk management policy, the appraisal process and scheme implementation.

Under each heading there is a summary of the responses received and issues raised, as well as an explanation of how the strategy team have taken them into account in finalising the strategy. Any outstanding issues are also identified.

Responses relating to specific strategy frontages have been included within Section 3 of this report, which considers each frontage in turn.

This section also summarises responses received from the statutory bodies, community groups and utility companies. Where these groups have made comments on particular frontages this feedback is included within section 3. The final part of this section looks at the issues raised by the Going Dutch II workshop organised by the Manhood Peninsula Partnership. We have aimed to represent the responses received as accurately as possible in Sections 2 and 3 below. Where possible we have reproduced the actual text we received but with longer responses we have summarised but kept in mind the need to maintain the sense and context of each response.

The following sections begin with a selection of comments drawn from the responses received. These are intended to give readers an indication of the range and types of consultation comments received.

2.1 Public Responses

2.1.1 Consultation process

| Consultation extracts |
|---|
| <p><i>... The consultation on the Draft CDS has been a great improvement from the earlier Initial Draft consultation.....</i></p> |
| <p><i>...We were interested to attend your presentation at Selsey Town Hall and to discuss these plans, thank you for making this possible....</i></p> |
| <p><i>... From the current document it would seem that the original views expressed have actually been listened to...</i></p> |
| <p><i>...I attended the exhibition at the West Wittering Cricket Club and consultation meeting at the Memorial Hall. Both were first class and your recommendation made complete sense - something sadly missing these days....</i></p> |

... I find the process of repeating the consulting with exhibitions etc, a waste of public money that would be better spent on maintaining the existing defences.....

....Beautifully laid out strategy document.....

Issues raised

Many of the responses showed that the community and key stakeholders viewed the draft strategy consultation as a vast improvement over the initial consultation. People voiced their appreciation in seeing many of the issues raised during the initial consultation brought forward and included within the draft strategy. Residents were also positive about the information given in the consultation document and the opportunity to engage with the strategy team at the various exhibitions and meetings that took place during the consultation period.

A few comments were received from people who felt that consultation was a waste of both time and money and that the resources could have been better spent on providing defences.

Finalising the strategy

The Operating Authorities believe that the consultation has been important in raising public understanding of flood and erosion risk across the peninsula. It has also highlighted the real difficulties associated with funding future works. Public responses demonstrated how the community wants to be involved in future decision making. The Operating Authorities are mailing a newsletter to all local residents so that they will know what consultation responses were submitted, how they have helped to shape the final strategy and future opportunities for involvement when the strategy is implemented.

2.1.2 Funding

Consultation extracts

... We still feel strongly that central government should contribute more to funding.....

.... It is a pity that we have to wait for some major flooding disaster before the government decides to spend some serious money on flood defences, especially as prevention is nearly always cheaper than the aftermath.....

.... it is not acceptable that Government funding is unlikely....

...I would therefore suggest that if local funding is needed to fund any works then income tax etc. paid by local people is kept locally and not passed through to Central Government...

....England's shore is a national responsibility not a local one....

...We pay our community charges and we don't seem to get the services we pay for!...

...We continue to be very concerned about the funding situation that you have outlined, which appears to leave communities like Selsey, unlikely to receive funding. However we recognise that without an agreed strategy in place, there is a much reduced chance of funding being forthcoming for any areas....

... It is vital that there is comprehensive community involvement in the discussions over future funding of Selsey's coastal defences...

... As for the cost, this has to be met by central government and not funded by Selsey residents....

Issues raised

Funding concerns were voiced during the draft strategy consultation, as they were in the previous initial consultation. Many of the respondents felt that central government should contribute more to funding, and that it was a national issue rather than a local problem. Many questioned the Government's priority for funding allocation to coastal defence compared to large expenditure elsewhere. There was also felt to be a lack of clarity over how funding was allocated to individual schemes.

It was noted that there is an average benefit cost ratio of 3 to 1 for undertaking the works, and felt that this should provide sufficient justification for government expenditure on defences here.

In addition, a few respondents raised concerns over whether funding was being prioritised towards environmental gains rather than for providing flood and erosion risk management solutions to protect people and their property. They stated that social justice should be placed at the front of the appraisal process.

Many respondents strongly supported community involvement in the discussions over future funding of coastal defences and some offered to participate in discussions.

Finalising the strategy

Throughout the consultation process, the Operating Authorities recognised funding as one of the main barriers to the implementation of the strategy. For this reason the strategy team highlighted this message in both the initial and draft strategy consultations. The current position with regard to funding is that the Department for Environment, Food and Rural Affairs (Defra) provides grant aid to support the implementation of projects that are needed to support the Government's flood and coastal flood and erosion risk management policy. Grant aid is available when proposals for projects to manage flood and coastal erosion risk are shown to be technically, economically and environmentally sound and sustainable, subject to the availability of funds. Strategy recommendations have not been decided on the basis of what was likely or unlikely to be funded. The strategy recommends options that will maintain or improve upon the current standard of protection for the great majority of houses and property in the strategy area. The strategy will not allocate funds for works nor design them in detail. It does however provide outline estimates of the costs, benefits and environmental and social effects that will determine the priority for schemes to get national funding.

Despite large increases in funding provision in recent years, there is still insufficient funding to support all the capital projects across England that Operating Authorities might wish to promote. The Environment Agency, working with Defra, has developed a prioritisation system known as 'outcome measures' to ensure that the funds available are invested in the most beneficial way. The purpose of the outcome measures is to ensure that the projects that will make the greatest difference in terms of flood and erosion risk protection to people and their property and deliver the most for the environment with the greatest benefits per unit cost are carried out first to allow authorities to devote resources to those projects.

Under this funding prioritisation approach, as identified in the draft strategy, many of the frontages currently achieve a relatively low priority for current investment, including those at Selsey West Beach and East Wittering & Bracklesham, where works are required in the immediate future. The Operating Authorities must work within the existing funding constraints. In order to implement such schemes, the strategy recommends that the Operating Authorities work together with local communities to investigate possible alternative funding possibilities.

Funding issues are by no means unique to this strategy area. There may be scope for learning from other areas of the country faced with similar issues. Possibilities for and implications of a variety of ways to provide funding may need to be investigated with some urgency for new schemes to be developed and built before the existing sea walls and groynes reach the end of their lives.

Approval of the Pagham to East Head Coastal Defence Strategy will provide a framework against which the funding of options can be explored. Both Arun and Chichester District Councils are aware of the need for the investigation of alternative funding, which was identified in the draft strategy recommendations. The Operating Authorities will need to explore all possible opportunities to fund the options. This will entail the exploration of local community contributions as well as considering all potential outside sources. The Environment Agency is currently developing a policy relating to contributions in relation to funding works which may mean that schemes could be promoted on the basis of combining local with national funding. The Government's Making Space for Water initiative is currently considering measures that will be needed for communities to adapt to the effects of climate change and rising sea levels which may also influence possibilities for action. It is already recognised that engagement with the local community will be important to achieving this outcome. The draft strategy consultation responses have reinforced this and have identified the community's willingness to participate. The Going Dutch II workshop identified some ideas that could be pursued further in terms of generating necessary investment.

2.1.3 Flood and Coastal Erosion Risk Management Policy

| Consultation extracts |
|---|
| <p><i>... We have serious concerns about the methodology for undertaking the Coastal Defence Strategy that is prescribed by Defra...</i></p> <p><i>... The current approach (dividing the coastline into frontages based on coastal processes) would have failed the community of Selsey and will fail other coastal communities unless it is changed to a more holistic, socio-economic approach...</i></p> <p><i>... Social Justice should be at the centre of all appraisal...</i></p> |

... The 100 year time frame for the strategy is not a reasonable basis for decision making, most other planning horizons are much shorter...

We consider that the Benefit Cost Analysis should not exclude transfer payments, so as to realistically assess the socio-economic impact on economic entities such as Selsey Town and the Chichester District...

...The CBA does not take account of blight on properties "directly affected" by flooding/erosion.....

... Operating Authorities should continue to maintain and repair existing coast defences in a timely fashion until such time as alternative policies are executed...

Issues raised

Since the initial consultation there has been a significant level of discussion with community groups on how Defra policy is applied and the guidance that is used in the appraisal process. Some responses received during the draft strategy consultation continue to highlight perceived failings within the current Defra guidance. Respondents requested that these 'failures' were passed up to the Environment Agency's national policy team and on to Defra. The issues raised include:

- The economic appraisal was undertaken from a national rather than a local perspective. Local losses were considered as transfer payments and did not form part of the benefit cost analysis.
- Regeneration investment already made at Selsey should be considered as public capital and added to the value of the benefits for Selsey.
- Respondents called attention to the guidance on the way blight is considered both for those properties directly and indirectly affected.
- Social justice should be at the centre of all appraisal and this should incorporate high level policies, government acceptance of past decisions, a compensation mechanism to be established, Government intervention where market forces fail to provide a solution, and greater involvement of the community in the decision-making process.
- Some respondents discussed the approach to the valuation of farmland and the long term need for food security.
- A few respondents queried the division of the frontages. It was raised that the boundaries should be drawn on a socio-economic basis rather than by considering coastal processes. They believe that the current approach fails coastal communities such as Selsey.
- People voiced concerns about uncertainty over future maintenance activities: will these be undertaken and will there be funding for these?
- The 100 year time frame for the strategy is not a reasonable basis for decision making; most other planning horizons are much shorter.

Finalising the strategy

The strategy appraisal has been undertaken using the existing guidance for flood and coastal erosion risk management. This approach has been developed to reflect government policy and is applied in a consistent manner for all scheme and strategy

submissions around the country. This standardised approach is required to enable decisions to be applied equally on a national basis. The first 6 bullet points above relate back to national policy. The strategy must be completed using current guidelines to gain necessary acceptance nationally.

However, Government policy for flood and coastal erosion risk management is under continuous review and currently Defra is undertaking a formal consultation on the "Defra Policy Statement on appraisal for flood and coastal erosion risk management". Details of this consultation can be found on Defra's website at:

<http://www.defra.gov.uk/corporate/consult/flood-appraisal/index.htm>

The strategy team has also forwarded policy comments raised through the draft strategy consultation to the Environment Agency's national policy team for their consideration.

Under existing legislation, the Operating Authorities cannot guarantee to commit to future maintenance expenditure. Flood and coastal erosion risk management works are undertaken under permissive powers. There is no right to protection under this policy. Consequently works can only be undertaken within the available budgets. In developing the option costs within the strategy, allowance for maintenance costs for the full 100 year appraisal period has been included.

Using a 100year appraisal timeframe enables solutions to be tested against short, medium and long-term policy issues. The management of flood and coastal erosion risk must be considered in the context of the resilience of local communities, the needs of the natural environment and how adaptation to external factors such as climate change, which brings a risk of increased storminess and sea level rise can be factored into investment decisions.

2.2 Statutory Body Responses

2.2.1 Arun District Council

Arun District Council is a partner in developing the strategy. The Council's responsibility in the strategy is confined to the Pagham frontage. The Council is currently undertaking a study to look at specific issues currently affecting Pagham Beach. This study will help to inform the development of the Adaptive Management Plan. The Council has elected to make no formal comments as part of the consultation but will submit a report to the Council's Cabinet in October, which will seek to formally agree the Council's position on the Pagham to East Head coastal defence strategy.

2.2.2 Chichester District Council

Chichester District Council is a partner in developing the strategy. The Council works closely in partnership with Arun District Council and the Environment Agency on this strategy.

The Council, via its members, has taken the opportunity to respond formally to the draft strategy. The response results from the public exhibitions as well as three formal meetings with members:

- Presentation to Members and site visit 27th May 2008
- Policy Development Committee (special meeting), 25th June 2008
- Executive Board, 7th July 2008
- Full Council, 22nd July 2008

The Council expressed their appreciation for all the work put in by the strategy team in enabling its members to understand the issues and reach their decisions from a well informed base. The Council's response stated that from their experience the consultation and engagement with the public has been well received and feedback to members from their constituents has generally been more positive during the second round of consultation.

The Council was keen to acknowledge the difficulties in respect of obtaining Government funding for future schemes and stated that the public should not be misled in this respect.

The Council wanted to express to Defra its concern over the approach prescribed to calculate the benefits and costs under current guidance. The Council challenged how existing guidance allocates the benefit of coastal defences to the local economy and community well-being.

In general terms, the Council response was supportive of all the preferred options indicated in the draft strategy but has some reservations and has made comment in respect of specific issues for the frontages. These are included within Section 3 of this report.

2.2.3 West Sussex County Council

West Sussex County Council acknowledged and supported many of the strategy changes since the initial consultation. In particular the County Council supported the decision to combine all of the Selsey urban frontages into a single unit.

The County Council recognised the importance of having a strategy in place to provide the necessary framework for coastal management actions. They noted that without an agreed strategy in place, there is a much reduced chance of funding being forthcoming for any areas. The County Council recognised that the potential limited availability of funds remains a major issue for communities like Selsey, which are unlikely to be a priority for national funding in the foreseeable future. The Council were concerned that outputs of Going Dutch II raised concerns with them that the existing national processes and funding mechanisms for flood and coastal erosion risk management, which the Operating Authorities work within, do not facilitate 'Integrated Coastal Zone Management' as used in the Netherlands and promoted during the Going Dutch II event.

The County Council also drew attention to the number of significant archaeological discoveries that have been made within the strategy area. They would expect to see potential impact on historic environment assets and palaeo-environmental/geo-archaeological deposits thoroughly investigated and any impacts mitigated. Where protection in situ is not feasible, the County Council encouraged that measures should be taken to record such assets before their destruction by marine incursion or coastal erosion.

Detailed comments were provided for all units and these are included within Section 3.

2.2.4 English Heritage

In their draft strategy consultation response, English Heritage drew attention to the Scheduled Ancient Monument and Grade I listed building at Church Norton and the scheduled monument to the north of Pagham Lagoon. They do not want to see plans that would increase the risks to these heritage assets. English Heritage also identified that any

works on the area of the scheduled monument would need scheduled monument consent. Other than this they raised no comments.

2.2.5 Natural England

Natural England is the Government's advisor on the natural environment and as such, has been working closely with the strategy team throughout the preparation of the draft strategy. They are a member of the East Head Working group (now East Head Coastal Issues Advisory Group). Natural England provided a formal response as a consultee to the strategy (Appendix B) and supported the strategy recommendations. Detailed comments were provided for all units and these are considered within Section 3.

2.3 Community Group Responses

Community groups already existed to consider the effects of changes on the manhood peninsula prior to preparation of this strategy. Consultation in 2006-7 prompted formation of new groups which have also been active in promoting public awareness of the issues and involvement in shaping the strategy options. The groups described below provided considered and detailed responses to the draft strategy consultation. These responses are included in their entirety in Appendix B.

2.3.1 Manhood Peninsula Partnership

The Manhood Peninsula Partnership (MPP) is a community group established following the initial 'Going Dutch' workshop that took place in March 2001. The MPP aims to involve the local community of the Manhood Peninsula in shaping the long term future of the area, especially in light of climate change and rising sea levels. The MPP Steering Group consists of representatives with statutory responsibilities within the Manhood Peninsula area and two project leaders who have close links with the local community.

The MPP response communicated their appreciation for the level of public engagement undertaken for this consultation. The MPP wished to highlight the work of the East Head Working Group as an excellent model of how to bring together interested parties and through joint working come to a resolution. Given the success of this working group, the MPP suggested that this model be used at Pagham as a way forward with the adaptive management proposal. They also stated that the model might be appropriate for the stakeholder group to develop the managed realignment proposed at Medmerry.

The MPP also noted that the draft strategy deals with climate change issues sensibly, tying in with regional government and educational requirements.

A major element of the MPP input to the consultation was the Going Dutch II workshop, which is discussed in section 2.4.

2.3.2 Manhood Peninsula Steering Group

The Manhood Peninsula Steering Group (MPSG) was formed in July 2007, at the suggestion of Andrew Tyrie, the Member of Parliament for Chichester, whose constituency includes the Selsey Peninsula. It brings together a wide audience of representatives such as local residents groups, businesses and landowners from across the peninsula and has also sought to engage Parish, Town, District and County Councils and the strategy team. MPSG aims to consider alternative options for sea defences and to engage with the authorities in identifying the most appropriate form of defence for a sensible timeframe.

The general issues raised by MPSG in their draft strategy consultation response have been considered in section 2.1. The limitations of Government funding and the effect of using a national economic perspective, as opposed to one that fully accounted for local economic impacts, were seen as important issues. MPSG believe that social justice should be placed at the centre of the appraisal process.

The MPSG response also called on the Operating Authorities to continue to maintain and repair the existing coastal defences until such times as alternative policies are executed.

MPSG made specific comments on each of the frontages, which are considered within section 3.

2.3.3 Save Our Selsey

Save Our Selsey (SOS) was formed in January 2007 during the initial consultation, in response to public concerns regarding the long term future of sea defences around urban Selsey and the surrounding and interconnected coastal frontages. The group exists to act as a public voice in consultation with the planning authorities (for sea defences) and now represents over 1,450 residents or members of the community. Through its activity and interaction with the community, the committee of SOS believes the group still represents the majority view of the local community on this subject.

Their stated overriding policy for coastal defences anywhere in the UK is 'Hold the Line – Sustain' where homes, businesses and farms are at risk. SOS believe that any realignment of the UK coastline inland is dangerous and will be difficult, maybe even impossible, to reverse.

The main issues raised by SOS in their draft strategy consultation response have been considered in section 2.1. SOS believe that coastal defence is a national issue and should be funded on a national basis. They were also concerned that sufficient funding should be given to the maintenance of the defences whilst the strategy options are implemented. They felt that social justice should be seen as the prime consideration. SOS also had concerns that the appraisal approach does not fully reflect local issues. SOS also commented specifically on the Selsey and Medmerry frontages. These comments are considered within section 3.

2.4 Going Dutch II workshop

The workshop was organised by the Manhood Peninsula Partnership at the suggestion of the local community. Going Dutch II followed an earlier Going Dutch workshop held in 2001, which looked at flood risk and erosion management options for the area. In both workshops the participants, leading experts in their professional fields, charged nothing for their involvement.

The Going Dutch II workshop took place in June 2008. The MPP invited a group of 22 Dutch and British coastal management specialists to attend. The workshop spent three days examining the future of the Manhood Peninsula.

The workshop participants reviewed the Operating Authorities' Draft Coastal Defence Strategy for the area and examined other flood and erosion risk management options put forward by local residents.

Community observers were appointed to the workshop to provide an assessment on four criteria: balance, evidence, fair play and thorough debate. In their report on the

proceedings they were unanimous in stating that “in our view all four criteria have been met, particularly with the time constraints available”.

2.4.1 Issues raised

The main issues raised by the Going Dutch II workshop are summarised below:

- The Draft Coastal Defence Strategy prepared by the Environment Agency and Chichester and Arun District Councils could form the basis of a sustainable solution for the area, as well as providing a compensatory mechanism for some landowners and greater security for property owners. But more consideration needs to be given to landscaping and to ensuring long-term safety and economic viability for surrounding communities.
- Feeding the coastline with additional material offshore should be considered and tested as this could help ‘buy time’ and allow a greater understanding of the coastal processes as well as creating more recreational opportunities for the coastline. One of the approaches suggested by the workshop was the use of offshore shingle reefs, where dredged material was deposited offshore (This reducing the delivery costs) and then moved ashore by the naturally occurring coastal processes.
- The coastal strategy must be tied in with a long-term economic and planning strategy for the whole peninsula. With a vision of the future of the area, which maximises the area’s potentials you have a better judgement about the type of coastal defence and management necessary for the area’s economy and environment.

2.4.2 Response from the strategy team

Integrated Coastal Zone Management

The Dutch approach to managing flood and coastal erosion risk is different from that in the UK. In the Netherlands, defence is a matter of principle, there is a legal coastline and anyone living behind that is entitled to be protected or compensated. This is funded using local as well as national taxation. The Dutch approach to planning and funding flood protection is much more integrated with spatial planning, i.e. integrated coastal zone management.

The difference perceived by the strategy team can be summarised as the Dutch approach being ‘ what do we want to see there in future?’ and managing the coastline together with the inland area affected to enable that plan to be achieved. In England, planning is separate from but informed by the flood and erosion risk management policies through the wide scale Shoreline Management Plans and at a more local level in strategies for managing flood and coastal erosion risks. In defining coastal flood and erosion risk management policies in this country, we are guided to take account of the developments there now rather than those that may be planned in future.

Integrated Coastal Zone Management (ICZM) provides a way of balancing social and economic demands on the coast with the protection of coastal ecosystems. The objective of ICZM is to establish sustainable levels of economic and social activity in coastal areas while protecting the coastal environment. ICZM seeks to reconcile the different policies that have an effect on the coast whilst bringing together stakeholders to inform, support and implement these policies.

ICZM has not formally been adopted in the UK where the current coastal management framework reflects the sectoral nature of decision making. However Defra in its response to the European Parliament in May 2006 states:

“The Department for Environment, Food and Rural Affairs is currently preparing proposals on how ICZM might be promoted throughout England. These proposals will be published shortly for consultation with the public. The proposals will look at how a strategic and integrated approach to coastal management might be achieved more consistently around the coastline, and how the current management systems on land might be harmonised with any new proposals at sea. The development of these proposals are being taken forward in the context of wider work to consider new primary legislative proposals for the marine area.”

Feeding the Coastline

Beach recharge options were included within the draft strategy for both West Beach, Selsey and the East Wittering and Bracklesham frontages. These schemes also included works to both the sea walls and the groyne. Recharge on the existing defence line at Medmerry had been discounted in the initial technical review for Medmerry as the increasing exposure over the strategy appraisal period made this option unsustainable without ever increasing importation of recharge material. The review concluded that moving the bank landward to offset the changes in coastal processes brought about by the erosion of the foreshore and the effects of sea level rise was the sustainable way of maintaining a shingle bank here. This became the Managed Realignment - Bank Realignment option as presented in the draft strategy.

The interest raised at the workshop by this approach warranted further consideration and in order to gain an independent view of this, Chichester District Council commissioned Alan Brampton of HR Wallingford and Malcolm Bray of Portsmouth University to provide comment upon the concept. HR Wallingford are a leading consultancy specialising in analysis, advice and support in engineering and environmental hydraulics, and in the management of water and the water environment. They had previously studied this concept in 1974 (HR Report EX643) specifically looking at beach feeding off Medmerry. Alan Brampton and Malcolm Bray have significant experience of this section of the coast and both were members of the Expert Panel which informed the works at East Head. These reviews were presented as short reports and are included in Appendix B.

Alan Brampton's review built upon the previous study undertaken in 1974 which considered various methods of recharging the beach at Medmerry. This study included field trials which included the placement of material both offshore (similar to the offshore reefs proposed by the workshop) and in much shallower water (around the low water mark). The placement of material offshore proved to be ineffective during the trial, but some of the material placed around the low water mark did migrate on to the beach, however as noted at the time the onshore movement of material was very slow.

Alan Brampton's review concludes that this has the potential to form a sustainable solution over the strategy appraisal period, as the techniques could be adjusted to cope with the consequences of climate change. But noted that the main concern was affordability and recommended that this as investigated further. The report also provided details on potential cost effective methods for the delivery of material, either by the use of small dredgers, with the ability to pump shingle from the bow (rainbow method, as recently used on Hayling Island)) or by the use of split bottom barges.

Malcolm Bray in his review broadly agreed with Alan Brampton noting that the volumes of material proposed at the Going Dutch II were likely to be a significant underestimate of that material actually required to achieve reasonable standards of defence.

The strategy team has undertaken a comparative cost exercise and has part of this has considered the differences in the rates used by the Going Dutch team and those used previously within the strategy. It is important to note that in all their considerations the workshop was not constrained by cost. The draft strategy had used a construction rate for delivery and placement of shingle on the beach of £22/m³. This rate was based upon recent rates for similar works. Since the workshop we have investigated potential rates for the placement of material in the nearshore either by split bottom barges or by rainbowing (following HR Wallingford's report). The rates for this ranged between £16-£19/m³. Using this as a cost base, the cost of recharge over the appraisal period, based upon the quantities identified from the workshop would make this option significantly more costly than the approaches compared to the existing preferred option. Works to the existing defences would also be required to provide an appropriate standard of protection in advance of the shingle recharge becoming effective. This could entail works to the existing structures or the initial placement of material on the beaches. There were also concerns over the long term fate of the material and whether some of this would end up adding to the siltation of the Chichester Harbour channel.

Mechanisms for long term economic funding

The draft strategy already recognises that the Operating Authorities, specifically the District Councils will need to develop mechanisms to explore alternative funding sources. The strategy itself will provide the framework for further discussions in respect of funding. It remains a fact that responsibility for the provision of coast protection rests with central government and Maritime Local Authorities can use powers conferred under the Coast Protection Act to execute the works. There is no statutory duty on the District Councils or other local authorities to provide defences. Defining a vision for the area as discussed in Going Dutch II may assist the community in identifying and exploring potential funding opportunities.

2.5 Utility companies

The Pitt Review following the summer floods in England in 2007 highlighted the importance of considering the impacts of flooding on local infrastructure. During the strategy consultation the infrastructure companies were contacted and their responses are listed below.

2.5.1 Portsmouth Water

Portsmouth Water is the water supply company for the area. Their response was based on the assumption that the strategy will ensure that the main road infrastructure to Selsey is protected as set out in the draft strategy. The key trunk mains supplying the town are in close proximity to the B2145 road at its lowest point adjacent to the edge of Pagham Harbour at Ferry. The response stated that area has no water resource implications and so provided that road and housing infrastructure is maintained, no difficulties are expected in maintaining public water supplies.

2.5.2 Southern Water

Southern provide wastewater services to the area. The main concern for Southern Water in this area is the security of the two wastewater treatment works at Sidlesham and Pagham. Flooding of these two works would prevent the works from operating effectively, and could be a source of pollution in the event of a severe flood.

Additionally flooding of the works is likely to inundate the sewerage network, which could cause flooding in areas remote from the works, or could result in unusable sanitation for low-lying properties.

The strategy proposed appears to safeguard Sidlesham wastewater treatment works by the managed realignment and construction of new defences to the seaward side of the works, and by ensuring that flooding from Pagham harbour cannot affect low-lying land behind these defences.

The adaptive management plan at Pagham needs to take account of the potential flood risk to Pagham wastewater treatment works. The options identified in the draft strategy appear to satisfy this need. Southern Water will need to be involved in the development of these plans.

2.5.3 **Scottish and Southern Energy and Southern Gas Networks**

Both of these organisations were made aware of the strategy consultation, although neither made a formal response they have indicated verbally their desire to be kept informed of future developments.

3 SUMMARY OF SPECIFIC FRONTAGE RESPONSES

This section covers responses received for specific frontages during the consultation period including those from residents, statutory bodies, community groups and the utilities companies.

The structure of the section is similar to section 2. It summarises the responses received followed by comments by the strategy team in response to the issues raised, setting out how these have been taken into account in finalising the strategy. Any outstanding issues are also identified.

3.1 Pagham

3.1.1 Issues raised

| Consultation extracts |
|---|
| <p><i>....: all deserve protection from the prime threat - storms from the sea....</i></p> <p><i>.... As to the recommended option of adaptive management, we can see the logic of this proposal, provided it really is proactive as well as reactive.....</i></p> <p><i>...The beach erosion is making the launching and recovery of boats extremely difficult and hazardous.....</i></p> <p><i>...Even though attempts were made to explain the meaning of "adaptive management" we still believe that it is evasive, fosters a feeling of uncertainty and appears only to underline indecision by the authorities...</i></p> |

Over 400 people attended the exhibition at Pagham on 18 July 2008. People came to talk to the project team and ask questions about concerns over the recent changes to the harbour-mouth spits. People were worried that the growth of the spit that extends easterly from Church Norton would cause further erosion at Pagham Beach. People feared that such erosion could affect houses during and after the first large spring tide at the start of the winter. A specific concern was that a channel could be washed through from the coast causing flooding to houses inland.

Concerns were also reflected in people's written responses to the draft strategy consultation. There was a clear desire from those responding to see action undertaken to manage this risk now in advance of winter storms.

There was also a perception that the local wildlife interests were placed above those of the local community. The recent fencing on the spit to protect the Little Tern breeding areas over the summer was often cited as an example. Many people also raised concerns over the role of Natural England.

People were generally unaware of the activities being undertaken to address the current flood and erosion issues at Pagham and this lack of information was adding to peoples concerns. People mostly did not know of the ongoing monitoring undertaken by Arun District Council.

In the longer term there may be a need for the creation of compensatory habitat to offset any damage which may occur to the internationally designated areas. It was identified that appropriate compensation measures should be put in place for those landowners affected. They also stressed the importance of good community involvement in the development of any schemes.

It was also noted that there was a potential flood risk through the Church Norton area towards Selsey and additional defences to those included within the draft strategy would be required in the future.

It was stated that the beach erosion is making the launching and recovery of boats extremely difficult and hazardous.

Pagham Parish Council are concerned that the definition of adaptive management provides no clear policy commitment. The Parish Council also commented upon the initial findings from the study, currently being undertaken by Arun District Council into the management of floods and erosion risk on Pagham Beach.

Sidlesham Parish Council has resolved to support the current Pagham to East Head coastal defence strategy.

Chichester District Council supports the adaptive management approach expressing its concerns over the difficulties in respect of obtaining Government funding for future schemes.

West Sussex County Council supports the recommended preferred policy of Adaptive Management for Pagham. They believe that the key to good decision making for this frontage is a much better understanding of the coastal processes that are dominant in this area. The County Council also recognised that Pagham Beach is a high priority for action with decisions being needed quickly to ensure a satisfactory standard of defence is maintained at Pagham Beach. They also offered their services to the adaptive management group as managers of the Local Nature Reserve.

Natural England supports the adaptive management approach. They did raise the concern that keeping the harbour entrance open for the next 20 years may be too prescriptive and would prefer something along the lines of 'to maintain Pagham Harbour as an intertidal system at least in the short term by keeping the harbour entrance open while we gain a better understanding of how coastal processes are operating on this frontage and how things may change in the future'.

They noted that an adaptive management approach as set out is not likely to have a significant effect on the nationally and internationally designated sites. This was fully detailed within their response to the consultation which concluded that no Appropriate Assessment is required at this stage, but it is important to recognise that future proposed actions triggered by the adaptive management principles could result in the need for an Appropriate Assessment if they are deemed to have a likely significant effect on the SPA.

3.1.2 Response from the strategy team

The finalised Pagham to east Head Coastal Defence Strategy will recommend preferred options for managing the risks of coastal flooding and erosion over the next 100 years. Although the recent erosion issues at Pagham Beach must be considered in any management recommendations, this strategy will not plan the detailed action needed to manage this risk for the winter of 2008/2009 and immediately afterwards. For this reason, Arun District Council is completing a separate investigation looking at what can be done to manage risk at Pagham and Pagham Beach.

The District Council plans two ways of dealing with the issues. The immediate risk will be managed with an emergency protocol. This will enable fast action to safeguard homes if the situation does get much worse during the coming winter. The investigation will be completed by the end of 2008. A detailed plan will be produced for dealing with the current problems in the next two years. Necessary approvals including planning permission will be sought with a view to completing works before winter 2009.

Although the actions for Pagham and Pagham Beach are separate from the strategy, they will be planned in accordance with the adaptive management approach. The actions will be planned together with the adaptive management plan by the same group of community, landowner and authority representatives.

Regarding people's concerns over the priority that is given to birds, Pagham Harbour is internationally designated because of its importance for nature conservation; breeding Little Terns at Pagham are a feature of this Special Protected Area. The fencing at Church Norton Spit is temporary and has been erected specifically to protect Little Terns from being accidentally trampled or disturbed by beach users whilst they are nesting on the shingle. This is its sole purpose. It should not prevent any shingle being moved outside of this year's Little Tern breeding season (April to August) and does not inhibit access along the beach to the end of the spit.

The recent changes to the spits at Pagham Harbour and their impacts upon the adjacent coast highlight the dynamic nature of the coast here. It is because of this complexity and future uncertainty that adaptive management has been proposed at Pagham. Given the complexity of the processes and uncertainty over the future development of Pagham Harbour, there is currently not a sufficient understanding to determine a single fixed strategic option. The adaptive management approach proposed seeks to balance the environmental and flood and coastal erosion risk management objectives, whilst developing a better understanding of the system. This will allow flexibility in the promotion of the necessary short term actions to manage the flood and erosion risk whilst meeting with the requirements of the internationally designated site. With increased understanding it may be possible in the future to define management options and planned actions more clearly, however, if the system remains naturally dynamic this may not be possible.

A key part of the approach proposed is the formation of an adaptive management group to include local representatives in shaping the future management. With the right members, this will assist the community in understanding the flood and erosion risk here and how it is being addressed. This will also help to improve communication and enable representatives of the various interests to work for plans and actions acceptable to all.

In developing management solutions at Pagham, Natural England, the Government's advisor on nature conservation has a statutory duty to ensure that any effect on the special conservation interests are taken into account and will consider each proposal on its own merits. Natural England is involved in the steering group for the Pagham coastal

defence issues study and will assist Arun District Council and in the future the Adaptive Management advisory group on nature conservation issues throughout the development of the plan. Solutions can be developed which meet the need to manage flood and erosion risk and environmental requirements.

In the future, there will be potential for extreme floods to flow from Church Norton towards eastern Selsey which was not covered in the draft strategy. Appraisal costs for an additional bund have now been included to address this (if required). This is shown in Figure 2. The consideration of flood bunds will form part of the adaptive management approach

In order to gain a better understanding of the tidal flooding issues within Pagham Harbour the Environment Agency currently has proposals for a detailed study to consider this. This is scheduled for the financial year 2010 to 2011 and the outputs from this will assist in developing the Adaptive Management plan.

3.1.3 Outstanding Issues

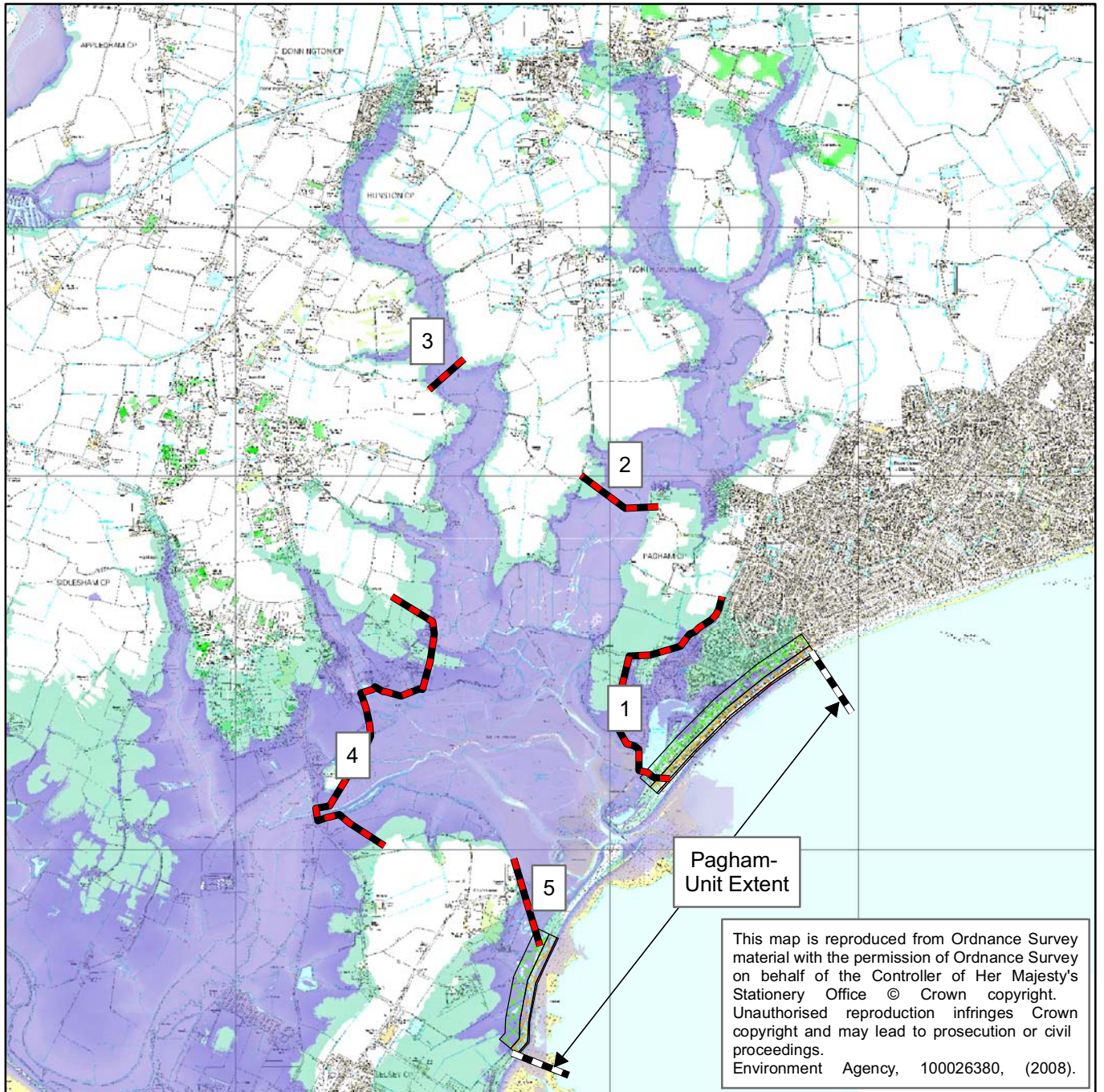
A group needs to develop the Adaptive Management plan for Pagham has been initiated by Arun District Council which held its inaugural meeting on 17th September 2008 and it will be known as the "Pagham Harbour Coastal Issues Advisory Group". This group includes the Operating Authorities (Arun and Chichester Councils and the Environment Agency), Natural England, West Sussex County Council, landowners, Parish Councils, community representatives and other key partners.

In parallel to the strategy consultation Arun District Council has commissioned a study to better understand the potential risks posed by the changes in the spits at Pagham Harbour and identify the best way to manage them. The final report from this study is due by the end of November 2008. Arun District Council will communicate the outcomes of the study via a local newsletter. This report will assist the newly formed group in developing the Adaptive Management Plan. The development of the plan forms part of the implementation of adaptive management.

Arun District Council is also developing an Emergency Protocol to facilitate any actions in the coming winter whilst the Adaptive Management Plan is being developed. This will set out triggers for intervention and methods of working such that works can be undertaken with the cooperation of parties involved.

The Environment Agency is proposing to undertake a study in 2010 to consider in detail the future flood risk within the harbour, this study will be used to inform the development of the adaptive management approach.

Figure 2 - Flood and Erosion Risk Outlines to Pagham and Possible Defences



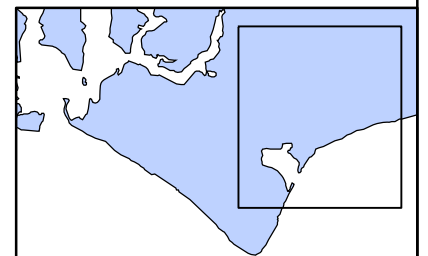
Legend

- Erosion Areas in 0-20 years
- Erosion Areas in 20-50 years
- Erosion Areas 50-100 years
- Land below 3.9 m AOD - 1 in 200 (0.5%) annual chance WL 2008
- Land below 5 m AOD - 1 in 200 (0.5%) annual chance WL 2108
- Potential Flood Defence Bund

0 1,000 2,000 4,000 Meters



Location Map



3.2 Selsey

3.2.1 Issues raised

| Consultation extracts |
|--|
| <p><i>...I am pleased to see that Selsey East Beach, Selsey Bill and Selsey West Beach is now being considered as one...</i></p> |
| <p><i>...East Beach defences should be maintained and money MUST be found for this....</i></p> |
| <p><i>...Who will fund Selsey's Sea Defences?...</i></p> |
| <p><i>...Could you please clarify how Coastguard Cottages and the access road will be defended?...</i></p> |
| <p><i>...we must ADAPT AND MODIFY as life has done for millions of years...</i></p> |
| <p><i>...The recent success in obtaining funding for the improvements at West Beach is very much welcomed.....</i></p> |

All responses received supported the Hold the Existing Defence Line- Sustain policy for Selsey. The combination of the three Selsey units into a single unit was welcomed as a positive change from the initial consultation. The key area of concern raised was the low priority for national funding to implement the policies.

Concern was raised over the erosion risk on the adjacent Medmerry cliffs which if unchecked could lead to the loss of the Coastguard Cottages at the western end of Selsey. It was suggested that the Medmerry cliffs section be included within the Selsey urban frontage.

Concern was raised that the strategy had used average erosion rates and believed these should be adjusted to show a much greater initial loss in line with the recent experiences following the collapse of the sea wall at Clayton Road, Selsey.

Chichester District Council supports the Hold the Existing Defence Line policy and expressed its concerns over the difficulties in respect of obtaining Government funding for future schemes. It also noted its concern that the protection of the Grade 2 listed Coastguard Cottages terrace and their access needs to be addressed. Members were concerned that the area fell between the Hold the line Policy for Selsey and the Managed Realignment policy for Medmerry.

West Sussex County Council supports the integrated approach to the Selsey unit and proposed Hold the Existing Defence Line policy at Selsey.

Natural England acknowledged that the preferred option of Hold the Existing Defence Line on this frontage is the only realistic option considering the infrastructure that would be at risk under a No Active Intervention. They also re-iterated that the implementation of the policy would need to ensure that any proposed works should not cause immediate loss of any of the geological exposure, for example by extending the footprint of any future works so that they directly cover the exposures.

3.2.2 Response from the strategy team

At the boundary between the frontages of Selsey West Beach and Medmerry our recommended management option changes from hold the line (at West Beach) to managed realignment (at Medmerry). At this boundary we will need to manage the transition between the two frontages. In developing the defences for West Beach consideration will be given to how this links in with the Medmerry cliffs frontage and how this boundary is likely to change over time. The existing defences at West Beach do afford this area some protection and we expect this to continue as and when replacement defences can be built.

Historically the Medmerry cliffs have eroded at an average rate of between one and two metres per year. Using this erosion rate, the access road and properties at the western end of Selsey could be affected between 20 and 50 years time without any intervention.

As we develop our recommended managed realignment option for Medmerry in more detail, we will consider the impacts on the cliffs. Although our recommended options do not provide improved protection for the cliffs we will need to take into account the effects on erosion rates. Proposals to construct private defences to protect the West Sands Holiday village could potentially reduce the erosion rates. Similarly, if and when realignment is implemented at Medmerry, we expect that the tidal flow in and out of the realigned area to the west of the holiday park could lead to a reduction in shingle movement, reducing the rate of erosion in front of the cliffs. We will consider all these issues in detail when we design the works for Medmerry and Selsey's West Beach.

To assess erosion risk within the strategy we have used average erosion rates based upon historical information. Erosion does not occur in a linear fashion and although we give annual rates, the erosion will occur in a periods of erosion, followed by period of very little movement. The long term average takes all this into account and provides an overall picture of what may occur over the 100 year strategy appraisal period. There may be local variations on this dependent upon local ground conditions etc. If when developing the detailed scheme, ground investigation works indicate a locally softer material adjustments to the local rates could be made in the more detailed scheme appraisal.

3.2.3 Outstanding Issues

In developing schemes for West Beach, consideration needs to be given to the transition with the Medmerry cliffs frontage and how this will be managed over time. Consideration will also need to be given during scheme development to the geological designations on both sides of Selsey Bill.

The key to the implementation of these options will be the availability of funding. Chichester District Council will need to explore all possible opportunities to fund the options and this will entail the exploration of local community contributions as well as considering all potential outside sources.

Engagement with the local community will be important to achieving this outcome. The Going Dutch II workshop identified some ideas that could be pursued further in terms of generating necessary investment. These ranged from local measures to the consideration of much wider investment strategies for the area. One example of this was a suggestion for East Beach where they proposed to combine the construction of a hard sea defence with the building of a friendly small scale harbour with a mixture of fishery-activities and tourism. The additional recreational amenities provided being used to fund the investment in the sea wall.

Whilst funding options are being explored Chichester District Council will continue to maintain the existing defences using available maintenance budgets. Funding for additional repairs to the defences at West Beach was agreed in June 2008 and these works should commence on site in October 2008.

If funding (from any sources) to undertake the above approach cannot be obtained there will be a need to reconsider the strategy approach with the possibility of the Operating Authority (Chichester District Council) developing an Exit Strategy to advise all stakeholders over the future withdrawal of maintenance leading to a No Active Intervention scenario. In this case the Exit Strategy would inform affected landowners, occupiers of the land and the other interested parties of the proposed withdrawal of maintenance. This information would help the affected parties to plan how they could deal with the change in circumstances.

3.3 Medmerry

3.3.1 Issues raised

| Consultation extracts |
|--|
| <p><i>...The proposal seems a workable and fair suggestion. Might I suggest that access is improved in the Manhood / Wittering area for walkers, cyclists and horse riders.</i></p> |
| <p><i>...I am writing to object to the proposed flooding of the farmland which is good arable land and in this current climate of more and more mouths to feed it is more important to preserve the land than to flood it...</i></p> |
| <p><i>... We still doubt that realignment will create a stable tidal inlet given the ferocity of the seas at Medmerry during a south westerly storm...</i></p> |
| <p><i>... I agree with the proposal for managed realignment at Medmerry.....</i></p> |
| <p><i>...Drainage of sea water could find its way behind the embankments and may ruin farmland.....</i></p> |
| <p><i>...Ensure that proposals for the other sections of the strategy, and in particular those proposed for Medmerry, do not have an adverse impact upon sediment movement patterns and supply westwards towards East Head so as to affect the morphological development of the feature or cause erosion levels to increase...</i></p> |
| <p><i>...the scheme has the potential to deliver fantastic wildlife benefits....</i></p> |
| <p><i>....It is essential to protect the B2145, as well as essential services to Selsey...</i></p> |

The potential changes to the management approach for the Medmerry frontage has promoted a large amount of discussion throughout the consultation and the responses received have raised a large number of issues and local concerns. Comments were received both for and against the preferred option, with many people raising similar issues. These are summarised below.

The technical viability of Managed Realignment was questioned by some respondents, who felt that opening a breach in the defences here would lead to longer lengths of defences inland being exposed to waves, similar to those already affecting the existing bank, particularly in a south westerly storm. Concerns were also raised over the impacts upon the local drainage system and the potential for saline intrusion caused by the creation of new inter-tidal areas. There was a belief among some that habitat creation

was the prime reason for the managed realignment rather than the provision of flood protection to the area and these decisions had already been made.

People had concerns that the permissive powers through which flood and coastal erosion risk management is undertaken do not enable compensation to those who will be adversely affected by any changes. There was a belief that any significant change should be accompanied by compensation to provide an equitable solution. This approach was often referred to as social justice. Affected landowners should receive adequate financial recompense for the loss of their assets and livelihoods. It was noted that the creation of compensatory wildlife habitat identified within the draft strategy has the potential to provide payment for the land taken by the Medmerry realignment. It was felt that decisions should be made quickly to identify and purchase land so that those affected can plan for their future livelihoods as soon as possible.

The loss of agricultural land, particularly given the current world food shortages was also questioned by some respondents and there were concerns that the lines shown are indicative and much larger areas may be included within the final design. It was also noted that the recent changes in Defra guidance (May 2008) to the way agricultural land is valued was not included in the draft strategy. This would raise the economic values applied to agricultural land.

Attention was drawn to the wider impacts upon sediment movement patterns and supply westwards when developing the proposed management options for each section of the strategy, and that each section should not be viewed in isolation.

It was noted that the Environment Agency have been in discussion with Bunn Leisure over their own proposals. This was seen very positively as maintaining tourism here is important for the community.

Managed realignment was seen as an irreversible change with considerable uncertainty and it was suggested that an approach based upon small incremental change may be better. Concern was also raised over the commitment in the medium to long term to maintain these new inland defences.

The construction of inland banks was also seen as an opportunity to create new access routes and cycle routes along the new alignments. This could include access arrangements for emergency vehicles. These should be fully considered as part of any scheme development.

Concern was also raised about the loss of the lowland wet grassland within and outside of the SSSI and a belief was expressed that this interest should be recreated or restored elsewhere to avoid net loss of Biodiversity Action Plan (BAP) priority habitats through flood risk schemes.

There was concern that the realignment option does not provide protection for those properties on the sea front at Medmerry. And in the longer term the potential for the erosion of the Medmerry Cliffs to affect property and access around the Coastguard Cottages at the western end of Selsey

The overriding comment was that if managed realignment solution is to be implemented here, this will form a significant change and the community needs to be involved with this process being able to influence the scheme development.

There are still many people who believe that a Hold the Existing Defence Line approach is still a better option. Suggestions included developing the shingle reefs approach identified in the Going Dutch II workshop. Others were keen to see the construction of reefs further offshore, beyond the tidal limits, which they felt had not been adequately addressed within the draft strategy.

It was suggested by some that a Hold The Line approach should be adopted in the short term whilst a better understanding of how a realignment option would perform and then in the future decisions could be made.

The community could be encouraged to support realignment at Medmerry if, and only if key conditions were met, these included community and landowner agreement, compensation for losses to those affected, access arrangements being suitable and a commitment to long term maintenance.:

Landowners in the areas potentially subject to inundation have reiterated the need for their close involvement with any proposals and that they can only support the approach if fair compensation is made available. Failure to provide this would lead to the complete loss of cooperation and those landowners affected may seek to construct their own defences, this would significantly reduce the potential for habitat creation in the short to medium term.

There was support for the alternative alignment as shown by the dashed line in the consultation document which some felt should be promoted as the preferred option as this would help to address concerns over the impacts on the local economy.

Earnley Parish Council would have preferred to see the existing defence line maintained. However, with the likelihood of government funding for a managed realignment, the council conditionally support this recommendation provided that the proposed embankments will be fit for purpose, and will be maintained as such throughout their useful life. That satisfactory compensation will be paid to landowners who lose their livelihood, or suffer a reduction in income, as a consequence of the realignment and that there will be no adverse effects on the existing land drainage in the area.

East Wittering and Bracklesham Parish Council raised concerns over the cost effectiveness of moving to a longer inland defence line. They also flagged up the importance of managing the land drainage impacts of any proposed changes. Also they felt that consideration should be given to the potential impacts upon the adjacent East Wittering and Bracklesham frontage, particularly with respect to the risk of flooding to Bracklesham from the adjacent Medmerry frontage.

Sidlesham Parish Council has resolved to support the current Pagham to East Head coastal defence strategy.

Chichester District Council supports the Managed Realignment policy and the Council requested that the Environment Agency work with the local community and businesses to achieve the desired outcome.

They noted that the flood bank alignment should incorporate privately funded defences which would offer protection for major local tourism business to go with that provided for the residential properties at Ham together with their access. They also stated that the fresh water drainage issues need to be fully investigated before finalising location of retreated flood banks.

As already mentioned in section 3.2.1 Council Members were concerned that the Coastguard Cottages terrace area fell between the Hold the line Policy for Selsey and the Managed Realignment policy for Medmerry.

West Sussex County Council recognised that the managed realignment options are becoming better understood by the community and that the implementation of this policy would result in a major new landscape feature. This has the potential to have a very positive impact on the area for generations to come. However they recognise that for the residents and businesses of the area to adopt the dramatic changes to their landscape and community, it is essential that they are involved in shaping a vision for how their area will look and could be used, and how such a new feature will be integrated into their landscape and fit alongside their existing facilities and infrastructure.

The County Council would be very keen to offer its landscape and heritage expertise to ensure the design of the scheme takes full account of the character of the Manhood Peninsula and its archaeological heritage.

Natural England supports the preferred option of managed realignment for this frontage, acknowledging that this will result in changes to the Bracklesham Bay SSSI. They consider this to be an acceptable change to the SSSI as it will be as the result of allowing this section of coastline to become more naturally functioning and sustainable in the face of sea level rise and climate change. They also have no objections, in principle, to private defences being utilised to provide continued protection to the Bunn Leisure complex, providing that it is compatible with the overall objectives of this strategy, does not impact on coastal processes on adjacent coastlines and does not have a significant effect on the interest features of Bracklesham Bay SSSI.

The Going Dutch II workshop also commented upon the Medmerry frontage, recognising the opportunities for salt marsh creation. They suggested that the lines should follow the natural floodplain boundaries, but would need to take into consideration infrastructure, landowners, drainage and the morphological development of the tidal inlet.

3.3.2 Response from the strategy team

The Environment Agency recognises that implementing a managed realignment at Medmerry will lead to significant changes and the importance of involving the local community in the development of the scheme. The Environment Agency has proposed the establishment of a stakeholder group which would have a key interest and links within the community. The main objective of the group would be to assist the Environment Agency and its partners in the design and implementation of the recommended option for the Medmerry frontage.

Liaison has commenced between the Environment Agency and the local landowners regarding what could happen to their land. Discussions have included exploring the possibilities of land purchase to create new habitat. Close liaison with landowners will continue as we seek to implement strategy recommendations. Both those with land that could be directly affected through realignment and those with land adjacent to and nearby this area will be included.

It should be stressed that the lines for potential new flood embankments shown both in the consultation document and the draft strategy are indicative only. This will remain the case for the final strategy. The determination of the location of the new inland defences

will be determined during the detailed development of the scheme as we set out in the consultation document. This will involve close working with the landowners affected, including Bunn Leisure. The Environment Agency is already engaged in discussion with Bunn Leisure as to how it can work with its proposals.

There is a large amount of work required in developing the realignment scheme and this will take time to deliver. It is likely to be up to five years before the realignment can be fully implemented. In the interim the Environment Agency will continue to exercise its permissive maintenance powers and continue the beach management activities as long as it remains possible

The design work will need to identify the locations of the new inland defences, undertake the design of these and how they will perform. We appreciate that many people have concerns over how these defences will work. As part of their design, detailed analysis will be undertaken to confirm the performance of the defences and how these will need to adapt to sea level rise. The flood banks will be designed to provide a standard of flood defence of between 1 in 100 and 1 in 300 (1% - 0.3%) change of flooding occurring in any given year. Sharing the outcomes of this work with the stakeholder group should help to allay some of the concerns over the future performance of the scheme. Drainage assessments and ground investigation will also be required. During the design process consideration will be given to what enhancements may be possible to improve local leisure facilities and infrastructure as well as the environment. The role of the stakeholder group will be important in developing these.

The current standard of protection provided on the Medmerry frontage is currently low with a breach to the shingle bank expected to happen frequently. The storms on March 10th 2008 showed how vulnerable the coast is here. It is important that improved defences are implemented here as soon as is practical as the existing shingle bank will remain vulnerable, despite the ongoing maintenance. Therefore it is important to act soon to develop the proposed new defence options now rather than delaying them until later

One of the main issues arising out of the initial consultation and again highlighted in the current consultation was compensation. Under permissive powers, through which flood and coastal erosion risk management legislation is implemented no compensation is payable to those affected by flooding or erosion. This includes those cases where it is decided not to defend a particular area, except in limited circumstances. During the draft strategy consultation, respondents continued to demand that payments should be made to affected landowners and businesses, particularly where a managed realignment solution was implemented.

The primary purpose of a realignment scheme would be to improve defences for areas inland including Selsey's only access road. In developing the draft strategy the Environment Agency has considered the opportunity offered to develop compensatory habitat as part of a realignment scheme. Compensatory habitat is needed as a direct requirement of flood and coastal erosion risk management schemes elsewhere across the Solent. The creation of new habitat will be needed to offset losses to internationally designated sites caused by such schemes. Using inter tidal land that would be created as part of a realignment scheme for compensatory habitat, would provide a mechanism for making payments to land owners either through land purchase or long term leases. This approach will be pursued in defining the detailed design for the scheme at Medmerry enabling the improved defences to be built, payments for landowners and environmental benefits.

The Environment Agency nationally is working with English Heritage to develop guidance for undertaking archaeological investigations when proposing managed realignment works. In scheme development the Environment Agency would carry out an assessment and seek to define the relative significance of known heritage assets within any areas of proposed managed re-alignment. The information gained would be used to inform the design of the scheme. Mitigation works in relation to the direct effects from carrying out engineering works would also be undertaken.

The implementation of breach realignment with flood bunds to provide the inland defence does not easily lend itself to a gradual approach. In developing the realignment design, sufficient flow must occur on the incoming and outgoing tides to allow the breach to remain open. This places a minimum size constraint on the option. Construction of flood bunds is such that these cannot be moved easily, so that a single construction is desirable.

The risk to the residential properties on the Medmerry frontage has long been recognised and this was identified within the draft strategy. The Environment Agency has been in discussion with the owners of these properties during the consultation period to ensure that they are aware of the strategy implications.

The issues raised regarding the properties at the western end of Selsey adjacent to Medmerry cliffs have already been discussed in section 3.2.2 of this report.

Offshore Breakwaters were considered within the draft strategy these were based around construction at the low water mark and had high costs associated with them. The draft strategy also noted that moving these further offshore would lead to the construction of potentially larger more costly structures. Further comments on the use of shingle reefs as proposed during Going Dutch II are included in Section 2.4 of this report. Following the discussion over differences in the rates of shingle procurement between England and the Netherlands at Going Dutch II this has been investigated and the findings are discussed in section 2.4.2 of this report.

The strategy team have updated the economic analysis in preparation for finalising the strategy. The latest guidance has been followed and resulting valuations incorporated. New guidance used included the revised economic evaluation of agricultural land. There has also been a significant change in agricultural land values. Updating the appraisal has increased the value of the land used in the appraisal from £6,285 in the draft strategy to £12,234 per Hectare, an increase of 95%. This change will affect the economic analysis but will not alter the preferred option.

3.3.3 Outstanding Issues

Establishing the stakeholder group and a means of maintaining effective communication with the community will form early strands of the development of the strategy option. Obtaining their involvement of those affected landowners and those with a major interest in the area will form part of the early stages of this work.

The Environment Agency will seek to work with Bunn Leisure on their private defence proposals to ensure coordination with the strategy implementation.

Maintenance works will continue to the existing shingle bank while proposals are developed.

3.4 East Wittering and Bracklesham

3.4.1 Issues raised

| Consultation extracts |
|--|
| <p><i>...Please prioritise the East Wittering & Bracklesham sea defences (groynes & wall). As they have significantly deteriorated over the past few years...</i></p> <p><i>...We are relieved however that you are now recommending that East Wittering frontage as "hold the line (sustain)...</i></p> <p><i>... Changes to management practice at Medmerry will lead to a change in the shingle supply to the East Wittering and Bracklesham frontage....</i></p> |

All responses received supported the Hold the Existing Defence Line- Sustain policy. The key areas of concern raised are the poor condition of the defences at the western end of the unit and the low priority for national funding to implement the policies.

It was also noted that there are currently large quantities of shingle on the eastern end of the frontage and whether this material could be used to help improve the defences at the western end. Some people were concerned that high beach levels here would allow waves to run up over the shingle into their properties.

West Wittering Parish Council supports the Hold the Existing Defence Line noting that any further erosion to the sea wall at the end of Shore Road will threaten properties particularly in Seagate Court. The frontage should be prioritised for repairs to not only hold the line but secure and sustain the line for the future.

West Wittering Parish Council also had concerns that the changes to management practice at Medmerry will lead to a change (reduction) in the shingle supply to the East Wittering and Bracklesham frontage. MSPG also raised this concern suggesting that the costs for additional beach recharge should be set against the cost of the Medmerry scheme rather than at East Wittering and Bracklesham.

East Wittering and Bracklesham Parish Council are concerned over the poor condition of the existing defences. They believe that these should be maintained and that the responsibility for funding should lie with central Government. They also have concerns that managed realignment at Medmerry will bring the sea closer to the house, and the need to manage the land drainage will be critical. They also raised concerns that the proposals from the going Dutch II workshop had not been given sufficient consideration.

West Sussex County Council supports the proposed Hold the Existing Defence Line policies at East Wittering and Bracklesham.

Natural England acknowledged that the preferred option of Holding the Existing Defence Line on this frontage is the only realistic option considering the infrastructure that would be at risk under a No Active Intervention. They also re-iterated that the implementation of the policy would need to ensure that any proposed works should not cause immediate loss of any of the geological exposure.

3.4.2 Response from the strategy team

Chichester District Council is aware of the poor state of the existing defences at East Wittering and Bracklesham. Works on developing and implementing the Hold the Existing Defence Line - Sustain, reconstruct as similar and raise option is already at the outline design stage (the scheme was prepared in 2003). The Council as yet has not been able to secure funding to implement this option. It is important this progresses whilst there is time for necessary design and planning before the existing defences, particularly at West Bracklesham and Shore Road deteriorate beyond repair or suffer catastrophic failure.

Chichester District Council has been encouraging the beach to move along with some of the existing groynes being lowered. This active management of the shingle combined with local monitoring will continue to maximise the defences protection provided here, whilst ways of implementing major capital works are explored.

It has long been recognised that future changes to the management approach at Medmerry are likely to impact upon the shingle feed to the East Wittering and Bracklesham unit. The additional material supplied by import of extra shingle on to the Medmerry frontage most winters has had a beneficial impact on East Wittering and Bracklesham but it is not sustainable to continue this over the full strategy appraisal period. Consequently in designing their scheme in 2003, Chichester District Council's consultants allowed for this and included it within the scheme development. It is this scheme that is now promoted by the strategy as the means of implementing the preferred option.

3.4.3 Outstanding Issues

The key to the implementation of these options will be the availability of funding. Chichester District Council will need to explore all possible opportunities to fund the options and this will entail the exploration of local community contributions as well as considering all potential outside sources. Engagement with the local community will be important to achieving this outcome. Whilst funding options are being explored Chichester District Council will continue to maintain the existing defences using its available maintenance budgets.

If funding (from any sources) to undertake the above approach cannot be obtained there will be a need to reconsider the strategy approach with the possibility of the Operating Authority (Chichester District Council) developing an Exit Strategy to advise all stakeholders over the future withdrawal of maintenance leading to a No Active Intervention scenario. The Exit Strategy will inform affected landowners, occupiers of the land and the other interested parties of the proposed withdrawal of maintenance. This information will help the affected parties to plan how they will deal with the change in circumstances.

3.5 Cakeham

3.5.1 Issues raised

| Consultation extracts |
|--|
| <p><i>...I am writing to support the coastal defence strategy preferred option to Hold the line on the Cakeham frontage....</i></p> <p><i>... The option of holding the line on the Cakeham frontage is correct...</i></p> |

Generally there was support for the strategy approach here, with the existing defences being maintained for the first 20 years, then consideration being given to whether a Hold the Existing Defence Line - Sustain or Minor Realignment option should be implemented beyond this.

It was noted that the change of management practice at Medmerry has the potential to impact on shingle supply at Cakeham.

West Wittering Parish Council also supported the Hold the Existing Defence Line approach and drew attention to the fact that the repair of breastwork between groynes 14 to 16 is urgent.

Both Chichester District Council and West Sussex County Council support the Hold the Existing Defence Line policy. The District Council also expressing its concerns over the difficulties in respect of obtaining Government funding for future schemes.

Natural England acknowledged that the preferred option of Hold the Existing Defence Line on this frontage is the only realistic option considering the infrastructure that would be at risk under a No Active Intervention. They also re-iterated that the implementation of the policy would need to ensure that any proposed works should not cause immediate loss of any of the geological exposure.

3.5.2 Response from the strategy team

The potential for alterations to the sediment supply was recognised in the draft strategy and ongoing monitoring will help to develop a better understanding of this. This information will help to inform the design when replacement works is required in about 20 years.

3.5.3 Outstanding Issues

Chichester District Council as the operating authority for this frontage will continue to maintain the existing defences using its available maintenance budgets.

Major works on this frontage are unlikely to be required before 2028. It will be important to consider how the material supply to the frontage is changing to inform scheme design when considering the replacement of the structures. This may well determine whether it is better to maintain the defences on the existing line or look for an alternative alignment. Changes to the management of frontages both down drift at West Wittering, and up drift

at East Wittering and Medmerry have the potential to significantly alter the available sediment supply, monitoring of beach levels will help in gaining a better understanding.

3.6 West Wittering

3.6.1 Issues raised

| Consultation extracts |
|---|
| <p><i>... The proposal 'adaptive management' appears to be the way forward....</i></p> |
| <p><i>... I write in support of the CDS preferred option for West Wittering. It is most important to protect East Head and Snowhill Creek; the adaptive management approach seems acceptable as presented...</i></p> |
| <p><i>...The recommendations to re-cycle material from the northern tip of East Head and to create a breach prevention sill are welcomed as interim measures....</i></p> |
| <p><i>...The raising of the existing roads to form a flood defence barrier for West Wittering is an excellent solution...</i></p> |
| <p><i>...We attended a meeting in the West Wittering Memorial Hall on then 18th July 2008 to hear a report by the various concerned with the Draft Coastal Defence Strategy and the Adaptive management group and their SEA to assist in the protection of East Head. This was the most sensible meeting we have attended in the 20 plus years we have lived in West Wittering...</i></p> |
| <p><i>...We support these proposals as we feel it is time to start the long term preservation of this unique area which gives so much pleasure not only to us but people from all over the country....</i></p> |
| <p><i>...Whilst believing that hard engineering is a completely practical way forward for East Head, I am pleased to endorse the proposed strategy and in particular the 'adaptive management' concept in regard to defending East Head...</i></p> |

As part of the strategy consultation West Wittering Parish Council had organised a public meeting where all the members of the East Head Working Group gave a short presentation on the draft strategy and then answered questions from the floor. The meeting was attended by about 120 people.

Adaptive Management option as presented was well supported; however there were still a large number of people who felt that a Hold the Line option was more appropriate for this frontage. There was also a high level of support for the local flood defences to protect West Wittering Village with some expressing a preference for road raising, whilst others preferred the construction of flood bunds. It was noted by some respondents modest local measures in some areas could have significant benefit.

The importance of the area to the local and wider community was clear from the responses with concern that the recreational and amenity value of the area including Snow Hill Creek was maintained. Concerns were also raised about the potential for changes to impact upon the wider harbour and in particular impacts on navigation and mooring.

Previous strategy information had included the consideration of four properties at the northern end of Ella Nore Lane these had not been included within the draft strategy put out for consultation.

The importance of community involvement in the future management was highlighted by several parties, including the Manhood Peninsula Steering Group. It was noted that some consultees were unaware of the works undertaken by the East Head Working Group.

West Wittering Parish Council stated their support for Adaptive Management at East Head subject to the following conditions being met:

- Hold the line continues to be supported until the adaptive management framework is formally adopted this to include repairs to existing breastworks;
- Planting of marram grass is to be permitted;
- Replenishment of material (sand) in front of and behind the existing line is permitted and CDC to remain responsible for recharging the material as necessary; and
- Urgent repair of breastwork to the east of the Hinge (groynes 14 -21 – Car Park frontage) is permitted.

They noted that objectives of Adaptive Management should clearly include retaining East Head as an accessible (save for rare storm high tides) spit, and protecting Snow Hill Creek as a valuable habitat. West Wittering Parish Council is a member of the East Head Coastal Issues Advisory Group.

West Wittering Parish Council also supported the recommendation for local flood defences to protect West Wittering Village. They also drew attention to the overtopping of the existing defences at Snow Hill creek by the storms of the 10th March 2008 and recommended that this issue should be addressed with some urgency.

Chichester District Council supports the Adaptive Management approach for East Head and local flood defences for West Wittering. The Council acknowledged its continuing support for the (now) East Head Coastal Issues Advisory Group and expressed the hope that the Environment Agency will promote and execute the local flood defences at West Wittering. The Council also expressed its concerns over the difficulties in respect of obtaining Government funding for future schemes.

Natural England have worked closely as part of the East Head Working Group support the principle of adaptive management that is recommended for this frontage. This is on the understanding that adaptive management here is primarily concerned with facilitating the natural evolution of East Head by natural processes, while reinforcing the hinge with a natural sand recharge which will prevent a permanent breach in this location and allow continued public access here. They identified the importance that the recharge should be of an appropriate height so that it overwashes during severe weather events and 'rolls back' rather than 'cliffing' on the front edge. In this way the breadth of the dunes at the

base will be preserved and the recharge will perform its primary function of preventing a permanent breach more efficiently.

They noted that an adaptive management approach as set out is not likely to have a significant effect on the nationally and internationally designated sites. This was fully detailed within their response to the concluded that no Appropriate Assessment is required at this stage, but it is important to recognise that future proposed actions triggered by the Adaptive Management principles could result in the need for an Appropriate Assessment in the future if they are deemed to have a likely significant effect on the SPA and SAC. They also stated their willingness for ongoing involvement with the East Head Coastal Issues Advisory Group.

West Sussex County Council acknowledged its support for the proposed Adaptive Management policies at East Head.

The Going Dutch II workshop commented upon the West Wittering proposals suggesting that it was better to defend West Wittering Village rather than the car park. They also suggested that it would be better to work with the natural processes around East Head and The Hinge.

3.6.2 Response from the strategy team

The properties at the end of Ella Nore Lane had been omitted from the draft strategy, but will be included within the revised Strategy. These properties currently lie above the 1 in 200 (0.5%) chance of an event occurring in any particular year. However in the long term flood defences will be required. These are probably easiest constructed in the form of a local flood bund to the area (around 450m in length) or individual protection to the properties. These works would not be priority for funding currently, but the works are not required until the medium to long term.

In developing the strategy the strategy team was very aware of the strength of feeling about East Head and that there were many different and often opposing views as to how it should be best managed. The East Head Working Group was set up to involve all parties with an interest in East Head, including the local community, represented by the Parish Council. The Group has worked together to understand the issues at East Head and come up with a viable management approach, Adaptive Management that all parties can support. The approach is probably best summed up by the statement in West Wittering Estate's press release on the draft strategy which stated:

"The directors feel the plans 'offer the best compromise solution to an intractable problem' and have urged their shareholders and season-ticket holders to follow their lead."

Adaptive Management provides the opportunity to assist in the management of flood risk to West Wittering residents, sustain the economic, environmental and recreational interest of East Head. This approach will seek to avoid adverse impacts on navigation in Chichester Harbour and support the economic and commercial activities in West Wittering and Chichester Harbour. The ongoing monitoring and involvement of the group will help to increase our knowledge of the area and ensure a common understanding for all parties. This knowledge and understanding should be shared with the wider community.

The strategy team would like to acknowledge the work undertaken by the Group since its formation and their contribution in developing the strategy option. The Group will continue

to function (as the East Head Coastal Issues Advisory Group) in developing the Adaptive Management Plan for East Head.

The Environment Agency has in its programme a feasibility study to develop a scheme for managing the flood risk for West Wittering village, commencing following the strategy approval in 2009.

3.6.3 Outstanding Issues

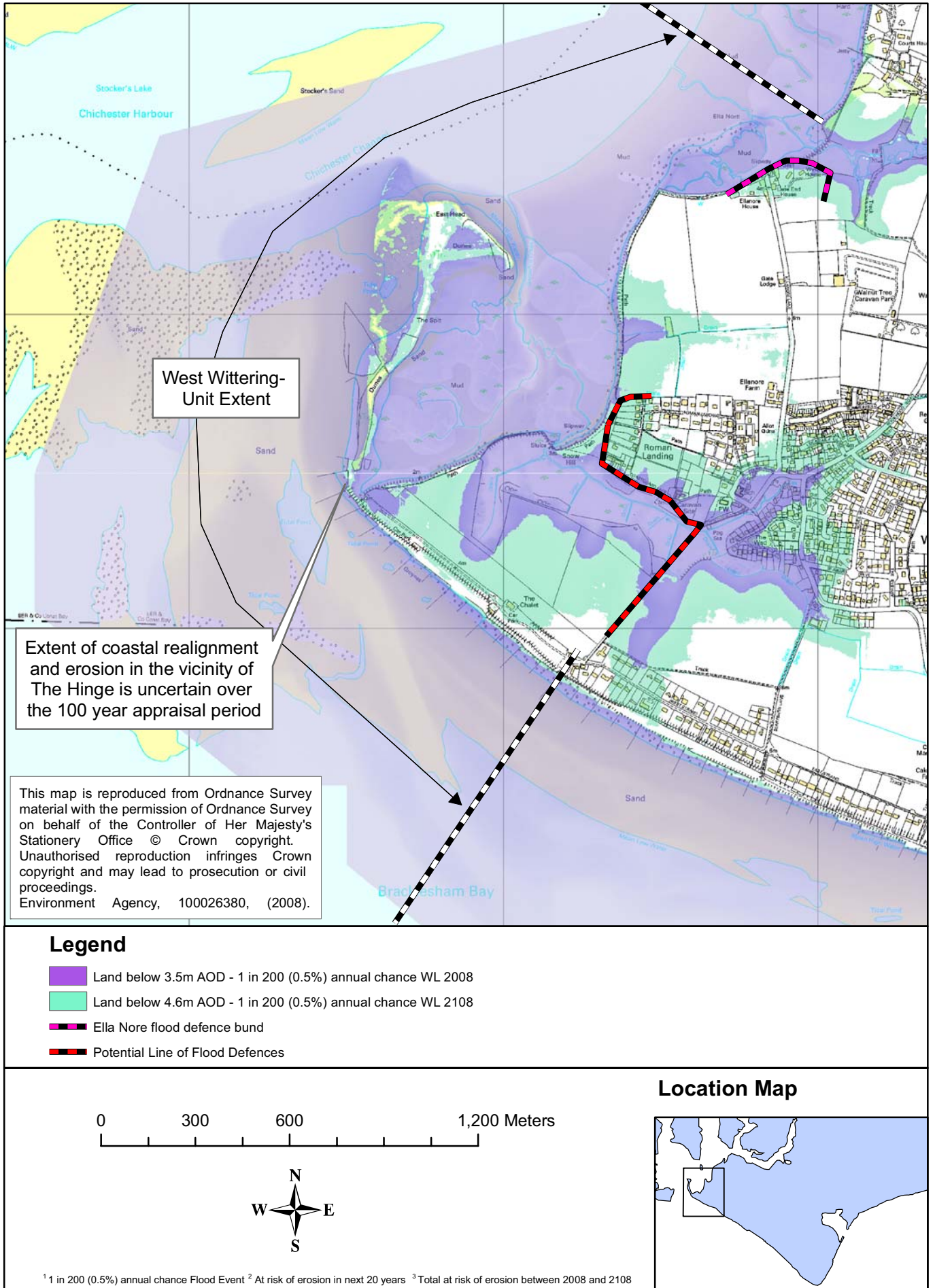
The development of the Adaptive Management plan will need to be progressed by the East Head Coastal Issues Advisory Group. All members of the Group have agreed to continue their works in delivering the Adaptive Management Plan. Chichester District Council will take the lead for this group. The initial phase of works is anticipated to be the recharge of the beach behind the Neck and Hinge. It is hoped that this could be undertaken during 2009, providing funding can be secured. The group will also need to further the development of the adaptive management plan including consideration of the design of the proposed geotextile sill. Ongoing monitoring of East Head will be important so that the understanding and knowledge of how the system behaves develops over time.

One of the group's objectives as stated in its terms of reference was for the group to communicate its common understanding as widely as possible. This will help to maintain community involvement and understanding of the future management.

The Environment Agency will seek to commence the scheme development of the local flood protection to West Wittering village in 2009 following the approval of the strategy.

It is anticipated that new flood defences will be required to the northern end of Ella Nore Lane in the future but it is unlikely that these would attract Government funding.

Figure 3 - Flood Risk Outlines to West Wittering and Possible Defences



4 CONCLUSIONS

Generally there was a very positive community response to the consultation process. There were a good number of well thought out discussions and responses both from the public and community groups, which showed that even if they could not agree with all of our recommendations, they understood the issues and how the work has finished up with our recommendations. People demonstrated an increased recognition of the level of flood and erosion risk that exists now and how future climate changes are likely to increase this risk.

A key concern for many people was the limited availability of funding for flood and coastal erosion risk management schemes. This remains a pressing issue for the community. Exploration of funding options will be made possible following approval of the Coastal Defence Strategy and as schemes are developed. The Operating Authorities are aware of the need to investigate alternative funding sources and have committed to working with the local community and businesses in this exploration.

The responses to the consultation have reinforced the importance of undertaking good local engagement and have demonstrated residents' willingness to take part in funding and other discussions as the strategy is implemented. Community exercises like the Going Dutch II workshop can provide forums to develop ideas that could be pursued further in terms of generating the necessary investment.

Many consultees including Chichester District Council, West Sussex County Council and the some of the community groups raised concerns over the existing policy and guidance and requested that these issues were raised up to Defra. These views have been forwarded onto the Environment Agency's national policy teams and on to Defra.

The consultation also provided a great deal of feedback on the individual frontages. The details of these responses are discussed in section 3 of this report. These responses are helping to shape the development of the final options for each of the frontages. The feedback from the consultation in general has not altered the preferred option selections for the frontages, although the West Wittering frontage has now been extended to include the properties at the end of Ella Nore Lane. The Environment Agency has recognised the need for community involvement in the development of the realignment proposals for Medmerry. The potential for problems caused by the transition from a Hold The Existing Defence Line policy at West Beach, Selsey and a Managed Realignment policy at Medmerry has been highlighted. This will be addressed as part of the detailed scheme design. Community involvement with the adaptive management group at Pagham has also been endorsed. Details of the preferred options are summarised in section 5 of this report.

The most important message learned by the Operating Authorities from this exercise is the community desire to be involved in the development of the strategy options and to be kept informed as this progresses.

5 REVISED STRATEGY PREFERRED OPTIONS

This section sets out the revisions to the strategy recommendations following the consultation. Although the draft recommendations have not greatly changed, the consultation responses have significantly influenced some of the detailed consideration for the individual frontages, which will be incorporated into scheme development. The sections below set out the strategy recommendations along with any revisions (shown in red) to the option being put forward by the strategy for approval.

5.1 Pagham

The parallel work being undertaken by Arun District Council to understand and manage the issues at Pagham Beach will help to develop the Adaptive Management plan. The Council is also looking at ways to disseminate the outputs from its study into the local community. Arun District Council has held an initial meeting to start to establish a stakeholder group to assist in the development of the plan. This work will be ongoing. The Environment Agency has included proposals to undertake a study into the flood risks inside the harbour to commence in 2010. The preferred option for this frontage has not changed from that put forward in the draft strategy for consultation.

| | |
|---|--|
| The preferred option for the Pagham frontage, based upon the overall appraisal of technical, environmental and economic criteria is: | |
| Short Term 0 - 20 Years | Adaptive Management |
| Medium Term 20 – 50 Years | Adaptive Management unless understanding is sufficient that a more definitive option can be endorsed. |
| Long Term 50 – 100 Years | Adaptive Management unless understanding is sufficient that a more definitive option can be endorsed. |

5.2 Selsey

People were happy to see that we have amended some of the recommendations from the initial consultation. Funding and Selsey's lack of priority for national funding is still the critical issue for this frontage, particularly given the urgency for works at West Beach. The preferred option for this frontage has not changed from that put forward in the draft strategy for consultation. Chichester District Council has included the West and East Beach schemes in their Medium Term Plan (2008/09) submission to the Environment Agency and awaits the outcome of the bid for funding. In developing the proposals for works at West Beach consideration will need to be given to the transition between the defences at West Beach and the adjacent Medmerry cliffs.

| | |
|---|--|
| The preferred option for the Selsey frontage, based upon the overall appraisal of technical, environmental and economic criteria is: | |
| Short Term 0 – 20 Years | Hold the Existing Defence Line - Sustain |
| Medium Term 20 – 50 Years | Hold the Existing Defence Line - Sustain |
| Long Term 50 – 100 Years | Hold the Existing Defence Line - Sustain. |

5.3 Medmerry

Given the poor existing standard of protection provided by the Medmerry defences, the Environment Agency will begin to develop the strategy preferred option as soon as the strategy is approved. To facilitate this, the Environment Agency is already developing the outlines of the approach required to undertake this. Separate works in identifying the requirements for compensatory habitat will also be undertaken in parallel to the Medmerry scheme development to enable Scenario 2 (deliberate breach of existing defences and habitat creation) to be implemented.

Establishing the stakeholder group and a means of maintaining effective communication with the community will form early strands of the development of the strategy option. Obtaining their involvement of those affected landowners and those with a major interest in the area will form part of the early stages of this work.

Bunn Leisure's proposals for its private defences have not yet been fully determined; the Environment Agency will look to work with Bunn Leisure to ensure coordination with the strategy implementation and in developing its own proposals for Medmerry.

Maintenance works will continue to the existing shingle bank whilst proposals are developed.

| | |
|---|---|
| The preferred option for the Medmerry frontage, based upon the overall appraisal of technical, environmental and economic criteria is: | |
| Short Term 0-20 Years | Managed Realignment – Breach Realignment Scenario 2 |
| Medium Term 20 – 50 Years | Hold the Existing Defence Line - Sustain (on the new alignment) |
| Long Term 50 – 100 Years | Hold the Existing Defence Line - Sustain (on the new alignment) |

5.4 East Wittering and Bracklesham

Funding and the lack of priority for national funding is still the critical issue for this frontage, particularly given poor state of the existing defences. The preferred option for this frontage has not changed from that put forward in the draft strategy for consultation. Chichester District Council has included the East Wittering Beach scheme in their Medium Term Plan 2008/09 submission to the Environment Agency and awaits the outcome of the bid for funding.

| | |
|---|--|
| The preferred option for the East Wittering and Bracklesham frontage, based upon the overall appraisal of technical, environmental and economic criteria is: | |
| Short Term 0 – 20 Years | Hold the Existing Defence Line - Sustain , reconstruct as similar and raise (Option A in Chichester District Council PAR revision 2006) |
| Medium Term 20 – 50 Years | Hold the Existing Defence Line - Sustain |
| Long Term 50 – 100 Years | Hold the Existing Defence Line - Sustain. |

5.5 Cakeham

Chichester District Council will continue to maintain the defences along this frontage. Funding and the lack of priority for national funding may still be a critical issue for this frontage, when replacement works are required in 20 years time. The preferred option for this frontage has not changed from that put forward in the draft strategy for consultation.

| | |
|--|---|
| The preferred option for the Cakeham frontage, based upon the overall appraisal of technical, environmental and economic criteria is: | |
| Short Term 0 - 20 Years | Hold the Existing Defence Line - Maintain |
| Medium Term 20 – 50 Years | Consider whether a Hold the Existing Defence Line - Sustain or Minor Realignment of the existing defence line is more appropriate. |
| Long Term 50 – 100 Years | Consider whether a Hold the Existing Defence Line -Sustain or Minor Realignment of the existing defence line is more appropriate. |

5.6 West Wittering

The frontage has been extended to include consideration of the flood risk issues at the northern end of Ella Nore Lane. Although works here are not anticipated to be required in the short term the preferred option for this frontage now includes consideration of local defences.

The Environment Agency has in its programme a feasibility study to develop a scheme for managing the flood risk for West Wittering village, commencing following the strategy approval in 2009.

The East Head Coastal Issues Advisory Group is continuing its works in developing the Adaptive Management plan for East Head and it is anticipated that the initial works to place shingle at the rear of the Neck and Hinge will be undertaken in 2009 providing funding can be secured.

| | |
|---|---|
| The preferred option for the West Wittering frontage, based upon the overall appraisal of technical, environmental and economic criteria is: | |
| Short Term 0 – 20 Years | Adaptive Management for East Head and the construction of new local flood defences to protect West Wittering Village and consideration of the need for local flood defences to four properties at the northern end of Ella Nore Lane. |
| Medium Term 20 – 50 Years | Adaptive Management unless understanding is sufficient that a more definitive option can be endorsed. Hold the New Defence Line on the flood banks at West Wittering village Local flood Defences to four properties at the northern end of Ella Nore Lane. |
| Long Term 50 – 100 Years | Adaptive Management unless understanding is sufficient that a more definitive option can be endorsed. Hold the New Defence Line on the flood banks at West Wittering village. Hold the New Defence Line on local defences at the northern end of Ella Nore Lane. |

6 WHAT HAPPENS NEXT

There are several steps to progress before the strategy is formally approved. Initially the recommendations as set out in section 5 need to be approved by both Arun and Chichester District Councils. It is anticipated that these approvals will be sought in October and November 2008. The Environment Agency's Regional Flood Defence Committee will also need to endorse the recommendations, it is anticipated that this will occur in November 2008. During this period the draft strategy will be revised, taking into account the consultation responses and revised economic guidance.

Once the endorsements have been received the draft strategy will be submitted for review by the Environment Agency's National Review Group (NRG). This group reviews all flood and coastal erosion risk management submissions nationally and subject to the appraisal criteria being met recommends the strategy for formal approval. It is anticipated that submission to the NRG will be undertaken in December 2008, with formal approval of the strategy anticipated by spring 2009. Defra can also call in a strategy for their own formal review; this would add an additional step into the formal approval process.