



Manhood Peninsula Steering Group

The Pagham to East Head Coastal Defence Strategy

(PEHCDS/CDS)

Formal Consultation Response

August 2008

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1. INTRODUCTION

The Manhood Peninsula (from Pagham to East Head, including the Chichester Harbour area) needs adequate coastal defence, to safeguard the future of the community. Manhood Peninsula Steering Group (MPSG) is a voluntary alliance of residents, businesses and elected representatives jointly chaired by Roland O'Brien and Andrew Tyrie, MP which considers it has a legitimate claim to ownership of this issue and to influence outcomes.

The views expressed here have been agreed by all MPSG members. Members have, though, reserved the right to individually reply to the consultation since they may have specific concerns related to their business/other interests which are not the focus of the wider group.

MPSG remains convinced that it is both economically and socially justifiable to continue a policy of "hold the line" along the Pagham to East Head frontage. However, since change is being forced on us, at the very least it should incorporate the amendments outlined below.

1.1. MPSG Contact

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1.2. Abbreviations used

CDC – Chichester District Council	CDS – Coast Defence Strategy
DCLG – Department for Communities and Local Government	DEFRA – Department for Environment, Food and Rural Affairs
EA – Environment Agency	MICE – Member of the Institute of Civil Engineers
MR – Managed Realignment	NAI – No Active Intervention
NE – Natural England	NFU – National Farmers' Union
PEHCDS – Pagham to East Head Coast Defence Strategy	PV – Present Value
SMP – Shoreline Management Plan	SEA – Strategic Environmental Assessment
FRM - Flood Risk Management	SEEDA – South East England Development Agency

2. THE DRAFT CDS

2.1. Consultation

The consultation on the Draft CDS has been a great improvement from the earlier Initial Draft consultation. We commend the Environment Agency (EA) team for this improvement, particularly the efforts made to engage with business and community representatives (including the MPSG) through correspondence, meetings and by distributing electronic copies of the CDS and some of the CDS reference material.

2.2. Planning for the Future

The summary document circulated to the public understandably could not give the full details contained in the Draft CDS and SEA. Nevertheless, two key issues were not mentioned which should have been highlighted at the public exhibitions. These are:

- Medmerry – the preferred option (line A) would lead to the loss of 4 homes, without compensation.
- Medmerry Cliffs – the preferred option would lead to the loss of Coastguard Cottages (8 homes) and their access road, without compensation.

The EA should take extra note of any consultation feedback on these issues, as the lack of publicity means that interest in them may be under-represented.

2.2.1. Use of PV Costs

The document does not make clear that the costs used are “cash” costs as opposed to “PV” costs, which along with the use of the 20-year cost in the public summary but not in the full CDS, made comparing the summary with the full Draft CDS very difficult.

2.2.2. Correct Costs

The document does not indicate that PV costs for Selsey could be £41m rather than £31m, if more shingle replenishment is needed. The public may therefore underestimate the cost of coast defences by 33%, at a time they are being asked if local funding may be appropriate.

2.2.3. Outcome Measures

We note that calculations in the CDS have been modelled using Outcome Measures as well as the currently prescribed methods.

We welcome some of the suggestions made by DEFRA in the Draft Policy Statement on appraisal for flood and coastal erosion risk management. In particular, its suggested use of innovative materials and solutions to coastal defence, of widening the scope for third party funding, and the need for public engagement.

We will respond to the consultation on the Draft Policy Statement separately, but will copy this to the Project Team as we believe the comments will provide useful feedback in the context of the CDS.

2.2.4. Definition of Realignment Lines

Page 17 of Planning for the Future has an ambiguous graphic which states “land for future habitat creation”. We understand that in a conceptual document such as the CDS the line of the bunds are “indicative only” and that the level of definition is not going to be precise.

However, the implication of the “land for future habitat creation” graphic is that the future (or scheme stage) land take for habitat may be very considerable indeed and differ greatly from the proposed lines. We believe the difference between the potential land take and the situation shown on page 17 could be so great, that the diagram on page 17 becomes misleading and does not make the reader aware of the effects of flooding an increased area, such as

- Altering surface water drainage in North West Selsey
- Increased vulnerability of adjoining areas to erosion
- Potential loss of additional property
- Increased cost of building and maintaining a longer line

With the level of technical knowledge and existing data available to the PEHCDS project team, we believe that this map could have been more precise in highlighting likely land take or could have indicated a ‘land range’ in which the actual bunds would be built, including an idea of the actual land take for future habitat creation.

3. METHODOLOGY

We have serious concerns about the methodology for undertaking the CDS that is prescribed by DEFRA.

3.1. The Division of Frontages

This is undertaken based on coastal processes, without consideration of the socio-economic activity and land use of the immediate and wider hinterland. The resulting decisions can be technically inadvisable, economically damaging and socially divisive.

For example, in the Initial Draft CDS the application of the CBA to three Selsey frontages led to a proposal to let the central frontage, Selsey Bill, erode away. Avoiding end-scour at both adjoining frontages would have been technically challenging and expensive. The economic and social damage of permitting the central third of Selsey's coastline to erode away would have been extreme (although not counted by the CDS). Not only would individual homes be blighted (including some of Selsey's newest social housing), but the entire town would have been blighted by association. Community wellbeing would have suffered, as a result.

We argued that the town should be taken as a whole, and the CBA applied across the single frontage. This has since been done, but not because of the socio-economic perspective that we believe should be used in designating geographical units to which the CBA is applied.

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. The issue of frontages is linked to that of Social Justice, which is considered in section 3.5, below.

3.2. The Cost Benefit Analysis (CBA)

3.2.1. UK wide perspective

The UK-wide perspective is unjust. For example, at Medmerry it is accepted by the Draft CDS that Selsey's caravan parks are a major local employer and contribute hugely to the local economy (£50m p.a.), yet the loss of these assets is treated as a "transfer payment" so their benefit is excluded from the CBA.

This is inconsistent with Government policy towards Regional Development and coastal town regeneration in particular. On the one hand, it is considered acceptable that economic output moves away from coastal communities; on the other, public money is invested to increase their economic output and improve community wellbeing.

We consider that the CBA 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.

3.2.2. Public Capital

As a regeneration area with some of the highest levels of deprivation in the District, Selsey has received public investment from Government bodies such as SEEDA. This investment should be treated as public “capital” and should be added to the value being protected when considering the cost/benefit of coast defences.

3.2.3. Blight (property directly affected)

The CBA does not take account of blight on properties “directly affected” by flooding/erosion. The CBA assumes the value of property is only affected when the sea is within 5m (erosion), or when the frequency of flooding is so severe that the building is unusable. In reality, properties threatened by frequent flooding will be difficult if not impossible to sell or let, thus capital/rental values will fall even if the building is theoretically “useable”. Similarly, properties threatened by erosion lose value immediately the threat is apparent – an extreme example is the £1 house at Happisburgh, but in general the effect on value is similar to changing the title from a freehold to a term-certain leasehold (with an expiry date when the occupier has to vacate).

3.2.4. Blight (property indirectly affected)

The CBA does not take account of the more widespread blight which abandonment of coast defences (or lack of public funding to maintain them) entails. Entire settlements may be “tainted” if part of the town is left to erode, as investors avoid the area altogether because of uncertainty: uncertainty over which properties will physically be at risk; over the costs and funding mechanisms for local coast defence; over the damage to community wellbeing (social deprivation; anti-social behaviour) if individual properties or whole neighbourhoods are abandoned to the sea.

3.2.5. 100 year timeframe

The 100 year timeframe is peculiar to coastal planning (it was adopted after the Government's acceptance of sea level rise predictions related to global warming). However, sea level rises cannot be predicted with great certainty over this period. Nor is technology likely to stand still – it is likely alternative measures and technologies for dealing with both global warming and coast defence will be discovered over the coming decades. Consider, for example, whether a coastal plan adopted in 1908 would still be relevant today.

The timeframe is longer than used in any other area of public investment, except nuclear power generation, and far longer than the typical private sector investment horizon. The associated guarantees required by the EA for maintenance of private coast defences for the 100 year period are a severe disincentive to private sector investment in this area (e.g. multi-purpose coast defences incorporating marinas or wind farms).

For these reasons we advocate a return to the 50 year maximum time horizon in the CBA. For indicative purposes the 100 year “do nothing” scenario could be described. However, investment decisions should be based on the 50 year timeframe, which is enough to buy this generation (and their children) coast defences appropriate to their circumstances.

3.3. Farmland

The Government has indicated that food security is a concern, yet this is ignored in DEFRA's guidance on coast defence strategies. DEFRA guidance should be issued on the relative importance of farmland against natural habitat and other land uses.

We support many of the concerns raised in the NFU South East Region's consultation response, which specifically concentrates on farming issues (e.g. loss of farmland, undervaluing of farmland, need to compensate affected landowners and implications of managed realignment on future drainage).

3.4. Habitat creation

3.4.1. Weighting Mechanism

The EA has pointed out that "there is no formal weighting mechanism to decide the relative importance of natural habitat against houses and other land uses" (initial Draft PEHCDS, Frequently asked questions, March 2007). A weighting mechanism should be formulated by DEFRA in consultation with DCLG, so as to guide the EA in this area.

3.5. Social Justice

CoastNet, technical adviser to The All Parliamentary Group on Coastal Affairs, defines social justice in the context of coast defence as:

A readily understood and open decision-making process, which

1. Sits within a wider policy framework for coastal management, which reflects the wider sustainable development context
2. Acknowledges and quantifies the risks to the community from the inevitable impacts of coastal change
3. Acknowledges that past decisions may have had detrimental consequences
4. Involves the community in issue identification and problem-solving
5. Does not allow mistakes to be repeated by any level of government
6. Protects the community from issues that individuals cannot easily resolve themselves, such as social and market pressures (especially in relation to housing)
7. Encourages the community to take responsibility for its own future

MANHOOD PENINSULA STEERING GROUP – PEHCDS CONSULTATION RESPONSE

We believe Social Justice should be an integral part of the CDS and all coastal planning. CoastNet considers that translated into policy implications this definition implies the following:

1. A higher level policy framework for coastal management, based on an inclusive vision for the coast to integrate policy through all arms of government
2. An adequately resourced, long-term research programme, its outputs communicated to the public
3. Government accepting responsibility for past decisions
4. Significantly more resources and expertise dedicated to community engagement
5. A compensation mechanism put in place now, with associated spatial policies, which will remove the problem for the future
6. Government intervention where market and other economic and social forces have failed, as they clearly have in this instance, and properly fund the solution
7. The community should themselves acknowledge, as a response to 5 above, the likely future impacts of erosion and flooding, and take responsibility for planning and for making contingency for future change.

4. FUNDING

The CDS does not attempt to fully address the funding issue. It notes that out of the estimated £73m PV needed to fund the preferred options, only £11m PV funding is “likely”. Funding will therefore become one of the biggest issues and is deserving of substantial treatment.

We expect to be involved in that debate. Meanwhile, we believe that coast defences (where the B:C ratio exceeds unity), should be considered as public/community infrastructure. Classing them in this way will facilitate funding from the widest variety of sources, including the public, charitable and private sectors (e.g. through planning gain).

5. FRONTAGES

5.1. In general

We have some overriding comments which relate to most or all frontages and specific comments on each.

5.1.1. Benefit Cost Ratio

The overall B:C ratio for preferred options across all frontages (excluding Pagham) is 2.94:1. Our view is that a B:C ratio of almost 3:1 justifies public expenditure to undertake the works outlined in the Draft CDS.

5.1.2. Exit Strategy

The costs of an Exit Strategy for each frontage, under the No Active Intervention scenario, should be published, in order to properly inform all stakeholders.

Such costs are likely to fall upon the District and Parish/Town Councils and thus ultimately be paid for by local residents. As local authorities and residents are being asked to consider if & how policies should be funded, they need to understand the true cost to them of following a “Do Nothing” scenario.

A poorly conceived Exit Strategy (or reliance on permissive powers to withdraw public funding of coast defences) could lead to litigation on a number of issues, including Human Rights. The likelihood of litigation should be factored into the estimated cost and timescale of the Exit Strategy. The expense of the Exit Strategy cost estimation should be met by the CDS, rather than being left to the individual Operating Authorities.

5.1.3. Adaptive Management

Adaptive Management (AM) is defined in the CDS as a means to “promote flexibility with an emphasis on sequential decision making in the face of uncertainty. It provides the opportunity for improved management as more understanding of the system is obtained over time”. The EA has indicated that it will set up AM Groups, incorporating stakeholders, to oversee AM over the 100 year Strategy period.

We welcome this approach but believe its principles should be followed on all frontages. Firstly, the community has a legitimate claim to ownership of the coastal management issue. Secondly, there is no absolute certainty when it comes to forecasting coastal processes, particularly over a 100 year timeframe, or when a radical change in management practice (e.g. MR) is proposed. AM provides a flexible and inclusive mechanism for dealing effectively with our coastal management over the long term, which should be adopted across all frontages.

5.1.4. Interim Management of Frontages

Operating Authorities should continue to maintain and repair existing coast defences in a timely fashion until such time as alternative policies are executed. Should defences fail during the interim period:

(a) there is the potential for damage to life and property, and

(b) the proposed new policies may cost substantially more to implement, or no longer be technically viable.

5.2. Pagham

We support the proposed policy of Adaptive Management but have concerns.

- There is uncertainty in the Draft CDS over the amount of land that will be taken for future habitat creation, on the financial arrangements with landowners that this would entail, on the affects on retained land in terms of agricultural production, and on the access arrangements for the public.
- Whilst adaptive management is a sensible solution, there is considerable concern over future habitat creation, and the involvement of the public throughout the scheme, from planning through implementation and ongoing management & review.
- During the later stages of the strategy period a further defence will be needed to the north of Selsey, to protect the town from extensive flooding via Pagham Harbour (through the gap between the northern end of the Selsey frontage and the eastern end of Bund 4). Details of this defence, including indicative location, cost, and any other relevant considerations, should be included in the full strategy.
- We consider it essential that the Adaptive Management Group is formed before detailed planning has commenced, and includes strong grass-roots community representation from all communities concerned, in the form of town/parish councils and resident groups such as SOS. The communities involved are Selsey, Sidlesham, Hunston, Mundham, Runcton and Pagham (all of whom will require protection by flood bunds). These and the landowners (all whose land could be affected by decisions taken by the AMG) should have representative parity with the other stakeholders.

5.3. Selsey

- We support the proposed policy (hold the line – sustain), but unless funding is provided the “do nothing” scenario will occur. It does not make sense to provide public funding for Medmerry in order to preserve Selsey’s £1bn asset value, yet not provide funding for Selsey’s urban coast defences. If blight were included in the CBA (see above) then there would be an economic rationale for public funding of Selsey’s urban coast defences.
- We share the concerns raised by Richard Armfield MICE in his report (attached as Appendix A) that the erosion rates in the Draft CDS may be greatly underestimated, and thus the benefit of defending Selsey’s urban coastline has also been greatly underestimated. The classification of funding for Selsey should be altered to “uncertain” while this remains in doubt and a recommendation made that further analysis be carried out as a matter of urgency.

5.4. Medmerry

- An offshore reef has not been costed (only offshore breakwaters), neither has a rock/concrete reef, nor a shingle reef option as suggested by the “Going Dutch II” event. These options should be fully considered before the strategy is finalised.
- The cost of shingle procurement should also be verified as the figure used in the “Going Dutch II” event was far less than the figure used in the Draft CDS. If a significantly different shingle cost emerges it should be run through the CBA calculations for all frontages, including Medmerry.
- The SEA overlooks the environmental advantages of an offshore reef, and of continuing to hold the line.
- There is uncertainty in the Draft CDS over the amount of land that will be taken for future habitat creation, outside the immediate scheme area, on the financial arrangements with landowners that this and procurement of scheme stage land would entail, on the affects of retained land in terms of agricultural production, on the access arrangements for the public.
- We are concerned that managed realignment (MR) is a virtually irreversible option, which increases the length of coastline that needs defending, carries with it considerable uncertainty, conflicts with Government statements regarding food security, may be heavily influenced by the exigencies of the EU Habitats directive, and that under a different decision-making framework alternatives of more benefit to the nation and local community (offshore reef, revetment) might be preferred.
- Even under the current decision-making framework, we believe Adaptive Management is more appropriate for this frontage. MR is a radical change of policy, the development of which is impossible to predict with certainty, carrying a strong possibility that changes of plan will be needed over time. It has the potential to significantly affect people and businesses in the district. The AM approach is the preferable way to tackle these issues effectively.

Medmerry Cont. - Nevertheless, given the framework under which the EA must operate we understand that it is likely MR will be the preferred option. For this reason we have outlined below how we believe an MR scheme could be effectively delivered in such a way as to give maximum benefit to the local community.

- A strong, broadly representative MR Group is vital. Its remit should be to facilitate delivery (and continued management) of a MR scheme that provides flood protection and attempts, where possible, to provide other community benefits. Community involvement is more likely to produce a MR scheme tailored to local needs, thus “adding value” to the public spending on MR and reducing the likelihood of legal challenge & adverse publicity.
- The MR Group must include landowners (those directly affected by flooding and those whose land may be affected by works or future management practices); community groups (Ham Residents; SOS); community representatives (Earnley, Bracklesham, Sidlesham parish Councils, Selsey Town Council). These groups should have equal status with other participants and will be key to identifying potential additional community benefits.
- The MR Group should be formed as soon as the Draft Strategy has been approved by the District Councils, allowing it to facilitate the scheme right from the planning stage. This is so the MR Group has the opportunity to add value to the scheme and by doing so, bring community buy-in. For example, it could promote an emergency vehicle & cycle track on top of the new bunds, which the EA on its own might be precluded from sponsoring because of its internal policies.
- The scheme should recognise the vital part that the caravan parks play in Selsey’s economy and seek to work with these businesses in order to avoid adverse impacts on the local economy and community wellbeing.

5.5. East Wittering and Bracklesham

- We support the proposed policy (hold the line – sustain), but unless funding is provided the “do nothing” scenario will occur.
- The cessation of beach recharge at Medmerry (under the MR option) will lead to a reduction in shingle supply to this and other downdrift frontages. It is normal for “downdrift” effects to be considered when FRM schemes are proposed, and for the costs of any mitigation measures to be set against the cost of the FRM scheme. We therefore believe the cost of future shingle replenishment at this frontage should be set against the cost of the Medmerry scheme and funding for Medmerry should include downdrift frontage shingle replenishment.

5.6. Cakeham

- We support the proposed policy (hold the line – sustain, or minor realignment after 20 years), but unless funding is provided the “do nothing” scenario will occur.
- The argument in section 5.5 regarding shingle replenishment costs applies to this frontage, too.

5.7. West Wittering & East Head

- We support the proposed policy of Adaptive Management (AM) but have concerns.
- It is essential that the AM Group includes strong grass-roots community representation from all communities concerned, in the form of parish councils and resident groups such as West Wittering Residents' Association. These and the landowners (all whose land could be affected by decisions taken by the AMG) should have representative parity with the other stakeholders.
- The hold the line policy proposed for Cakeham frontage should be extended from Cakeham frontage up to Groyne 21 (the start of East Head). AM proposals at East Head are calculated to preserve its amenity value, but this will be negated unless there is continued defence of the car park and its access road, in order that the public can continue to have vehicular access to the area.
- The favourable conservation status of the SPA may require a continuation of hold the line policies. In the absence of an "overriding public interest" argument, NE's preferred policy of preferring natural processes may lead to a contravention of the requirement to protect SPAs.

6. RELATIONSHIP OF CDS & SHORELINE MANAGEMENT PLAN (SMP)

The North Solent SMP is the higher level coastal plan for the Manhood Peninsula. Currently the new North Solent SMP is in the early stages of its preparation. In theory the SMP should be completed, then lower level Strategies and Schemes can be defined which follow its policies. In practice these lower level plans will be in place before the SMP is completed and will, in the EA's words "inform" the SMP.

This reversal of roles in the case of the PEHCDS suggests that SMPs are in some cases by-passed, and we question whether large sums of public money should be spent on developing such SMPs. Guidance should be issued permitting a less expensive, abridged form of SMP to be created in such cases as the North Solent SMP, where its policies will already have been partly determined by CDSs.

7. CONCLUSION

The policies proposed for the majority of frontages are supported by MPSG. However, without interim maintenance followed by scheme funding, these policies will not be put into practice. Community engagement is essential in dealing with the funding issue.

A more inclusive approach will also permit the input of local knowledge and expertise, resulting in more sustainable management measures, and wider public acceptance of the schemes that emerge.

We continue to have serious concerns regarding DEFRA's guidance for undertaking Coast Defence Strategies, which we have outlined above, in order that it can be passed on to the relevant section of DEFRA for consideration.

We look forward to continued engagement with the EA as the CDS is finalised and planning of underlying schemes commences, and wish to be kept fully informed of developments.

APPENDIX A - SELSEY DAMAGES UNDER NO ACTIVE INTERVENTION

(written by Richard Armfield MICE, August 2008)

We are concerned that the No Active Intervention (NAI) damages assessment for Selsey does not adequately reflect:

- The current knowledge on the rate of erosion in the event of failure of the sea walls.
- The impact of failure of the East Beach Outfall.

As a result the amount of damage is underestimated with a corresponding reduction in the Benefit Cost Ratio promoting the conclusion that funding is unlikely.

Whilst it is appreciated that a Strategy Study takes a broad brush type of approach it is a concern that subsequent more detailed scheme assessment may either:

- not take place (e.g. CDC officers/councillors conclude it would be fruitless and therefore not worthy of public expenditure),
- or will be overturned on application to the EA because it does not tally with the assumptions in the Strategy Study.

In addition the town will continue to suffer an unnecessary level of blight.

Our comments on the damages assessment are summarised below.

Erosion Rate

It is a matter of factual record that after the failure of the section of sea wall last year on West Beach the sea eroded 15m landward in 3 days. During this 3 day period the sea also managed to start undermining adjacent sections of the sea wall such that they also began to fail. During the 3 day period, and for some time after, CDC and their contractor fought to stabilise the situation.

The Strategy recognises these facts.

Under the NAI option the Strategy Study makes two assumptions about the residual life of the West Beach seawall. 1. That the Breached Section would fail again within 1 year and that 2. The remainder is failing now but is given a 5 year life. The Strategy also notes that once a section of wall has failed the adjacent ones will quickly unravel.

From this position the Strategy goes on to assume that on failure of a section of the sea wall the ground will erode landward at 3m per year for 5 years (=15m) and thereafter at 1.34m per year. The result is the loss of the sea wall and 5 houses in the first twenty years.

Conversely CDC's recent erosion assessment for the sea wall breach repairs concludes that erosion would be nearly 30m in year 1 slowing to 1.34m per year by about year 5. Adding in a buffer strip (when houses are presumed unsafe to occupy) leads to the loss 4 or 5 houses in the first year alone. Many more houses are lost over the following few years as the sea wall progressively collapses.

The CDC model seems a reasonable extrapolation of the facts surrounding the breach whereas the Strategy extrapolation would appear to be a gross underestimate.

We have done our own assessment of houses lost due to erosion along the whole West Beach frontage based upon the rates used by CDC and failure of the remainder of the sea wall at the end of year 5 (the residual life given in the Strategy). In summary for the length between the coastguard station and the east end of the car park off Hillfield Road 4 houses would be lost at year 1, 20 by year 5, 66 by year 10 rising to 210 by year 100.

In geographic terms all the seafront houses would be lost by years 6 or 7 and those on the landward side of Clayton Road by year 30. By year 100 all properties on a line running from approximately the junctions of West Road/Vincent Road, Vincent Road/Warner Road and Seal Road/Seal Square would be lost.

The above model gives damages of approximately £25 million when calculated using the £270k average house value and discount rates quoted in the Strategy. Obviously the houses on the seafront are worth considerably more than £270k and so the calculated £25m is an under estimate. Regardless, the calculated £25m loss for West Beach alone compares with the total erosion loss for the whole of Selsey quoted in the Strategy of £16 million.

The Strategy purports to use the same basic type of erosion loss model for parts of the Bill and East Beach which are protected by sea walls, although the erosion starts on failure of the first part of the wall in year 20. Whilst the 20 year assumption could be seen as reasonable the same type of erosion model with limited initial erosion will be similarly flawed as the high land will regress quickly in the first few years after wall failure as was seen at West Beach last year. As such it is not unreasonable for us to consider that the East Beach erosion losses are also underestimated in the Strategy. Of course this is compounded by the actual property value of the sea front houses.

East Beach Outfall Failure

It is understood that the East Beach outfall is in a poor state of repair with only 1 flap valve providing protection against tidal intrusion.

Prior to the construction of the sea wall and the outfall the land which comprises the car park, pond and a large tranche of surrounding housing was a marsh. Once the wall and outfall were built the land was drained and the housing foot print extended. The ponds were extended to accommodate the increased runoff from the recent housing to the north east of Selsey.

If the outfall or landward pipe work were to become blocked then under the NAI option the low land will once again flood leading to the loss of a number of houses. This scenario would be compounded by the regular sea wall overtopping that occurs along this section of East Beach. Given that the water would have no real way out the depth of the water trapped could be quite significant leading to flooding over a significantly greater footprint than the original marsh.

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The Strategy makes no mention of the outfall or its poor condition. It is entirely conceivable that the outfall could fail long before the Strategy assumed sea wall breach at year 20 resulting in early and increased damages.

Even if the outfall lasted the 20 years it is equally conceivable that a sill would be formed by the foundations of the failed sea wall which would also cause an artificially high trapped water level again increasing the damages both in quantum and at an earlier time in the life of the Strategy.