SAVE OUR SOUTH COAST ALLIANCE

WHY CHICHESTER NEEDS TO PLAN PROPERLY FOR CLIMATE CHANGE

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Evidence and sources

1. Sustainability

Locations need to be sustainable - environmentally, economically and socially - for the long term. Climate change forecasts are being continually revised, with sea level rise predictions increasing significantly in recent years. As a result, coastal biodiversity and flood risk is high on the sustainability agenda globally. In the UK, both the Environment Agency and the Committee for Climate Change are now urging local authorities to better prepare for climate change, particularly sea level rise, and the government has announced a review of flood risk planning policy. In light of this changing advice and knowledge, CDC needs to review both its 2018 Sustainability Appraisal and Strategic Flood Risk Management Assessments in order to accurately assess the long term sustainability of development on the coastal plain.[1]

In October 2019, the House of Commons Environment Food and Rural Affairs Committee concluded that local authorities need to take a much more proactive approach to planning in coastal areas and avoid inappropriate development in areas at risk from future flooding or erosion.[2] The EA's current advice is for local authorities to plan for flood and coastal risk up to at least 2065 and for global mean temperature increases of up to 4°C.[3] The Committee for Climate Change has also stated that

[1] http://www.chichester.gov.uk/CHttpHandler.ashx?id=31030
https://www.theccc.org.uk/wp-content/uploads/2019/07/CCC-2019-Progress-in-preparing-for-climate-change.pdf
https://www.gov.uk/government/news/environment-agency-chair-calls-for-new-approach-to-flood-and-coastal-resilience
https://www.gov.uk/government/publications/flood-and-coastal-risk-management-in-england-long-term-investment/long-term-investment-scenarios-ltis-2019
https://www.climatecentral.org/news/report-flooded-future-global-vulnerability-to-sea-level-rise-worse-than-previously-understood

[2] https://publications.parliament.uk/pa/cm201920/cmselect/cmenvfru/56/56.pdf

https://www.parliament.uk/business/committees/committees-a-z/commons-select/environment-food-and-rural-affairs-committee/inquiries/parliament-2017/coastal-flooding-and-adaptation-to-climate-change-17-19/

[3] https://www.gov.uk/government/news/environment-agency-chair-calls-for-new-approach-to-flood-and-coastal-resilience

"it is prudent to plan adaptation strategies for a scenario of 4°C, but there is little evidence of adaptation planning for even 2°C." [4] Even just 2°C increase in global mean temperature would create severe flood risk on land lower than 7m above sea level on Chichester's coastal plain, according to current scientific modelling.[5]

Scientific predictions of sea level rise vary but the vast majority show that long term planning for Chichester's coastal plain will have to account for materially increased flood risk by 2030 and significant inundation levels within the next 100 years.[6] Few climate scientists now believe that we can restrict the global rise in temperature to two degrees; virtually no one believes that the Paris target of 1.5 degrees is realistic; but 4 degrees, which the latest reports urge we should be planning for, threatens to be catastrophic.[7] CDC should not expose more people to serious, potentially catastrophic, flood risk and should adopt land use planning strategies to make existing communities more resilient to flood risk. No new major development should be permitted on sites which could be inundated due to rising sea levels within the next 100 years, as such sites are no longer considered sustainable by most scientists. Chichester District Council should use high climate change allowances (++) to evaluate housing developments which will face much higher risk in the future, such as those on the coastal plain.[8]

https://www.gov.uk/government/news/environment-agency-publishes-new-evidence-to-plan-for-flood-and-coastal-risk-up-to-2065

[4] https://www.theccc.org.uk/wp-content/uploads/2019/07/CCC-2019-Progress-in-preparing-for-climate-change.pdf

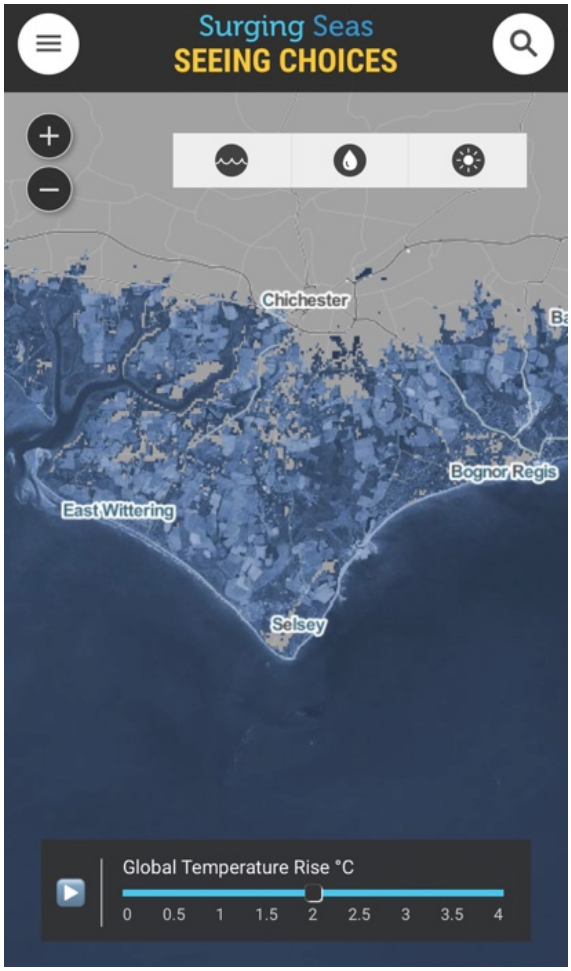
[5] https://seeing.climatecentral.org/#12/50.7830/-0.7689?show=lockinAnimated&level=4&unit=feet&pois=hide

[6] https://coastal.climatecentral.org/map/11/-0.8517/50.7747/?theme=sea_level_rise&map_type=year&contiguous=true&elevation_model=best_available&forecast_year=2030&pathway=rcp45&percentile=p50&return_level=return_level_1&slr_model=kopp_2014

[7] https://www.theccc.org.uk/publication/reducing-uk-emissions-2019-progress-report-to-parliament/

https://www.theguardian.com/commentisfree/2019/jul/10/the-guardian-view-on-the-climate-emergency-a-dangerous-paralysis
https://www.theguardian.com/environment/2008/aug/06/climatechange.scienceofclimatechange

[8] Joseph Lockwood, Department of Geoscience, Princeton University, USA; Department of Atmospheric and Oceanic Science, McGill University, CA, *Future Sea Level Rise and Flood Risk in Chichester District* *https://5d0e6579-f20c-40a0-acbf-8c4ac274613b.filesusr.com/ugd/dae4df_bc46d604a4ae4965a574ea0054fd1582.pdf*



1. NPPF

While presumption in favour of development is a key objective of the NPPF, the presumption in favour does not apply to development in areas subject to flood risk or coastal erosion, where policies in the NPPF suggest that development should be restricted.

NPPF core planning principles Paragraph 8 of the NPPF makes clear that 'mitigating and adapting to climate change' is a core planning objective. To be in conformity with the NPPF, local plans should reflect this principle, ensuring that planning policy clearly and comprehensively deals with climate change mitigation and adaptation.'

The NPPF also highlights climate change as a key part of strategic planning policy which local authorities are legally obliged to set out in their local plans (see paragraph 20 and footnote 12 of the NPPF).

Section 6 and 7 of the NPPF specifically mentions Sites of Special Scientific Interest; irreplaceable habitats, and areas at risk of flooding or coastal change.[9]

9 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

Due to the known vulnerability of the Chichester coastline to sea level rise, sites on land below 7m above sea level should be precluded from development until an updated Strategic Flood Risk Assessment of the Chichester District has been undertaken factoring in predicted sea level rise over the next 100 years.[10] The area's existing wetlands are of national and international importance both because of their biodiversity and their high capacity to absorb CO2.[11] Sea level rise will result in coastal squeeze and loss of irreplaceable wetland, development near to the coast or adjacent to coastal settlements will exacerbate coastal squeeze and hinder migration of species and settlements.[12]

NPPF paragraph 148 states that "*the planning system should support the transition to a low carbon future in a changing climate, **taking full account of flood risk and coastal change**. It should help to **shape places** in ways that contribute to radical reductions in greenhouse gas emissions, **minimise vulnerability and improve resilience.**"*[13]

NPPF paragraph 149 states that *"plans should take a **proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes.**" In addition, "policies should support appropriate measures to ensure the **future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.**"*[14]

NPPF paragraph 155 states that "***inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future).***" [15]

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[10] https://coastal.climatecentral.org/map/11/-0.8517/50.7747/?theme=sea_level_rise&map_type=year&contiguous=true&elevation_model=best_available&forecast_year=2030&pathway=rcp45&percentile=p50&return_level=return_level_1&slr_model=kopp_2014

[11] https://www.carbonbrief.org/restoring-soils-could-remove-up-to-5-5bn-tonnes-of-greenhouse-gases-every-year

[12] http://www.coastalwiki.org/wiki/Coastal_squeeze

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

[14] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

[15] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

The coastal and harbour settlements in Chichester District will face by far the most catastrophic flood risk in the district.[16]

2. Climate Change Emergency

As a council that has declared a **Climate Change Emergency**, CDC should be taking significant note of emerging planning policies and guidance and scientific advice relating to climate mitigation particularly regarding flood risk and CO2 emissions. The EA currently predicts sea level rise of up to 1.6 metres for the south east coastline by 2125 but it states that predictions will have to be constantly be revised. US based Climate Central predicts sea level rise of up to 3 metres by 2100 at current CO2 emission levels. Either of these predictions would result in continual inundation of sea water across the Manhood peninsula and in all the coastal and harbour settlements.[17]

Under current practice in developed countries, acceptable levels of coastal flood risk are often based upon specific flood return periods, such as the 100-year (with 1 % annual expected probability of occurrence [AEP]). Most developed countries build to protect against an AEP of 1%. The majority of coastal and tidal defences in the Chichester District, however, currently provide a standard of protection against an event with an AEP of 4% or 5%, lower than many international standards. A Swedish lidar study warns that future inundation in the coastal areas of the South East of England, including Chichester, needs to be factored into long-term planning strategies.[18]

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[16] Joseph Lockwood, Department of Geoscience, Princeton University, USA; Department of Atmospheric and Oceanic Science, McGill University, CA, *Future Sea Level Rise and Flood Risk in Chichester District,* 2020. *https://5d0e6579-f20c-40a0-acbf-8c4ac274613b.filesusr.com/ugd/dae4df_bc46d604a4ae4965a574ea0054fd1582.pdf*

[17] https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#table-3
https://ss2.climatecentral.org/#12/50.7693/-0.8715?show=satellite&projections=1-K14_RCP85-SLR&level=3&unit=meters&pois=hide
https://coastal.climatecentral.org/map/11/-0.8529/50.7595/?theme=sea_level_rise&map_type=coastal_dem_comparison&contiguous=true&elevation_model=coastal_dem&forecast_year=2100&pathway=rcp85&percentile=p95&return_level=return_level_0&slr_model=kopp_2017
https://www.google.co.uk/amp/s/www.carbonbrief.org/interactive-what-will-2c-and-4c-of-warming-mean-for-global-sea-level-rise/amp
https://www.nature.com/articles/s41467-019-12808-z
https://www.nytimes.com/interactive/2019/10/29/climate/coastal-cities-underwater.html
https://www.reuters.com/article/us-climate-change-sealevel/far-more-people-at-risk-of-rising-seas-than-feared-climate-study-idUSKBN1X81YV
https://www.scientificamerican.com/article/sea-level-could-rise-at-least-6-meters/

[18] http://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=8937311&fileOId=8937312

The Manhood Peninsula is at particularly high risk of flooding as topography in this region is typically less than 5 m above current mean sea level. Even under moderate carbon emission scenarios (known as the RCP4.5 emission projections), without adaption or wide scale defence infrastructure, by 2050, highly populated areas of the Chichester district will fall below mean sea level. By 2100, the Witterings, Bracklesham, Selsey, Birdham, Almodington and Sidlesham will be subject to permanent inundation. When the annual flood event is considered, most regions south of Chichester city will be inundated regularly by 2100. The main areas at risk are Pagham, Selsey and the Witterings with 20,000 permanent residents, and thousands of visitors each year. Additionally, standards of protection are low in the Chichester region and conditions of the current sea defences are described only as 'fair'.[19] Meanwhile, there is no guarantee of future increases in coastal defence funding for the Chichester coastline.

Table 1. Range of sea level estimates from EA

Area of England	Allowance	2000 to 2035 (mm)	2036 to 2065 (mm)	2066 to 2095 (mm)	2096 to 2125 (mm)	Cumulative rise 2000 to 2125 (metres)
Anglian	Higher central	5.8 (203)	8.7 (261)	11.6 (348)	13 (390)	1.2
Anglian	Upper end	7 (245)	11.3 (339)	15.8 (474)	18.1 (543)	1.6
South east	Higher central	5.7 (200)	8.7 (261)	11.6 (348)	13.1 (393)	1.2
South east	Upper end	6.9 (242)	11.3 (339)	15.8 (474)	18.2 (546)	1.6
South west	Higher central	5.8 (203)	8.8 (264)	11.7 (351)	13.1 (393)	1.21
South west	Upper end	7 (245)	11.4 (342)	16 (480)	18.4 (552)	1.62
Northumbria	Higher central	4.6 (161)	7.5 (225)	10.1 (303)	11.2 (336)	1.03
Northumbria	Upper end	5.8 (203)	10 (300)	14.3 (429)	16.5 (495)	1.43
Humber	Higher central	5.5 (193)	8.4 (252)	11.1 (333)	12.4 (372)	1.15
Humber	Upper end	6.7 (235)	11 (330)	15.3 (459)	17.6 (528)	1.55
North west	Higher central	4.5 (158)	7.3 (219)	10 (300)	11.2 (336)	1.01
North west	Upper end	5.7 (200)	9.9 (297)	14.2 (426)	16.3 (489)	1.41

Source: EA Flood risk assessments: climate change allowances (high ++)

[19] [13] R. E. Kopp, R. M. Horton, C. M. Little, J. X. Mitrovica, M. Oppenheimer, D. J. Rasmussen, B. H. Strauss, andC. Tebaldi, "Probabilistic 21st and 22nd century sea-level projections at a global network of tide-gauge sites," *Earth's Future* , vol. 2, no. 8, pp. 383-406; Chichester District Council Level 1 Strategic Flood Risk Assessment; M. Buchanan, R. Kopp, M. Oppenheimer, and C. Te-

baldi, "Allowances for evolving coastal flood risk under uncertain local sea-level rise," *Climatic Change* ,vol. 137, 10, 2016; Chichester SFRA, http://www.chichester.gov.uk/CHttpHandler.ashx?id=31030; Joseph Lockwood, Department of Geoscience, Princeton University, USA; Department of Atmospheric and Oceanic Science, McGill University, CA, *Future Sea Level Rise and Flood Risk in Chichester District*

3. Planning

Development proposals should be in accordance with the Council's declaration of a Climate Change Emergency. Chichester District's particular vulnerability to catastrophic flood risk from rising sea levels means that safety from future flood risk is a critical planning aspect which needs to be included in the Interim Housing Policy Statement, a new and separate Climate Change Development Policy, an updated Integrated Coastal Zone Management (ICZM) Policy and in the revised Local Plan.

In 2001 Dutch and British planners and water/coastal engineers described all land below 5 metres on Chichester's coastal hinterland as 'unsafe' for development due to fluvial and coastal flood risk.[20] A 'golden rule' in UK planning introduced in PPG25 (replaced by PPS25 in 2010) advised against planning for permanent structures below 5 m above sea level. In the last decade predicted sea level rise has increased significantly making 5 m a bare minimum threshold. In 2011 CDC adopted an ICZM (Integrated Coastal Zone Management) policy, one of the first local authorities in the country to do so. This policy states that development will only be permitted if it "*contributes to greater safeguarding of property from flooding or erosion and/or enables the area and pattern of development to adapt to change, including the relocation of current settlement areas, and vulnerable facilities and infrastructure that might be directly affected by the consequences of climate change*." The existing policy needs to be rigorously enforced using high ++ scenarios until it is replaced with an updated policy which reflects current climate change predictions.

Also, until a comprehensive and updated Strategic Flood Risk Assessment has been undertaken for the district in line with current predicted sea level rises and expected planning guidance changes, only sites above 7 metres above sea level should be considered as sustainable sites for new development.[21] Allowances for climate change over the lifetime of a proposed development must be made in line with the latest guidance for climate change. Chichester District Council's existing Strategic Flood Risk Assessment has separate high climate change allowances (referred to as high++) that only apply in assessments for developments that are very sensitive to flood risk, for example large scale energy generating infrastructure, and that have lifetimes beyond the end of the century.[22] However, The Town and Country Planning Association and the Royal Town Planning Institute advise that local authorities use High ++ scenarios for all vulnerable areas and the latest set of UK Climate Projections and Assessment (UKCP18) using the highest probabilistic projection scenarios.[23] Chichester's coastal plain needs an updated SFRA using high climate change allowances (high ++) as this is a very vulnerable location with communities expecting to have lifetimes beyond

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[20] *Going Dutch on the Manhood Peninsula,* West Sussex County Council and Nirov, the Netherlands Institute for Planning and Housing, 2001, p 27

[21] https://www.climatecentral.org/news/ipcc-predictions-then-versus-now-15340; https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/827611/Exploratory_sea_level_projections_for_the_UK_to_2300_-_report.pdf ;

[22] Chichester district council level 1 strategic flood risk assessment; Joseph Lockwood, Department of Geoscience, Princeton University, USA; Department of Atmospheric and Oceanic Science, McGill University, CA, *Future Sea Level Rise and Flood Risk in Chichester District.*

[23] https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=fd66dbe5-2b88-4acf-b927-256a82db9abe

2100. Until an updated SFRA is completed Chichester District Council should use these high climate change allowances to evaluate all proposed housing developments on the coastal hinterland.

The district's settlement hierarchy must take into account CDC's declaration of a Climate Change Emergency, recent advice from the Environment Agency, Parliament and the Committee for Climate Change about the need for long term flood risk planning, and the reduced sustainability of any settlements which face significantly increased flood risk this century.[24] A precautionary approach is needed to allow for variance in sea level rise predictions. New development should be avoided in areas at risk of inundation using regional standards of protection to levels approximating an annual expected probability of occurrence of 0.01%.

Until a strategic Local Plan has been produced which fully accounts for the latest sea level rise predictions on the south coast and in line with CDC's declaration of a Climate Change Emergency, sites close to Chichester, Pagham or Medmerry harbours, within two miles of the open coast and less than 7m above sea level should be considered inappropriate for development and avoided as not being sustainable in the long term.[25]

4. National and International Developments

Chichester's neighbouring city of Portsmouth has been advised by the Institution of Civil Engineers that it may need to migrate inlands and upwards unless it significantly upgrades its coastal defences

[24] https://www.gov.uk/government/news/environment-agency-publishes-new-evidence-to-plan-for-flood-and-coastal-risk-up-to-2065 https://www.gov.uk/government/publications/flood-and-coastal-risk-management-in-england-long-term-investment/long-term-investment-scenarios-ltis-2019

https://www.theccc.org.uk/uk-climate-change-risk-assessment-2017/

https://www.theccc.org.uk/publication/progress-in-preparing-for-climate-change-2019-progress-report-to-parliament/

[25] https://coastal.climatecentral.org/map/11/-0.8529/50.7595/?theme=sea_level_rise&map_type=coastal_dem_comparison&contiguous=true&elevation_model=coastal_dem&forecast_year=2100&pathway=rcp85&percentile=p95&return_level=return_level_0&slr_model=kopp_2017
https://www.google.co.uk/amp/s/www.carbonbrief.org/interactive-what-will-2c-and-4c-of-warming-mean-for-global-sea-level-rise/amp
https://www.nature.com/articles/s41467-019-12808-z
https://www.nytimes.com/interactive/2019/10/29/climate/coastal-cities-underwater.html
https://www.reuters.com/article/us-climate-change-sealevel/far-more-people-at-risk-of-rising-seas-than-feared-climate-study-idUSKBN1X81YV
https://www.scientificamerican.com/article/sea-level-could-rise-at-least-6-meters/

at a huge cost.[26] Chichester's coast is unlikely to attract the national investment required to upgrade its existing coastal defences in the future, so CDC will need to focus on land use strategies that ensure as few residents and businesses as possible are exposed to serious and continual flood risk. Building more homes on the low lying coastal plain will be storing up huge problems for the next generation.

"Multiple time horizons need to be considered to arrive at intergenerationally fair, affordable solutions towards sustainable resiliency. The tendency to deny current coastal flood risks and future rising risks due to sea level rise must be overcome. We must use the best available scientific, technical, and socioeconomic data and methods to inform a proactive instead of a reactive political process. Sustainable resiliency, climate change adaptation, and mitigation must become core principles of our collective behaviour."[27]

Sea-level rise is creating difficult choices for those affected by coastal change. Governments and communities have the information they need to face the difficulties ahead, but more must be done to manage the challenge of rising seas. Failing to address barriers today can lock-in dysfunctional outcomes, making it more expensive and disruptive to adapt later. In OECD countries, implementation of measures to support adaptation to sea-level rise is happening too slowly to match the pace and scale of the challenges ahead. While most countries are increasing investments to understand climate risks, there has been far less action in updating regulation.[28]

Because of the success of Medmerry, Europe's largest coastal realignment, Chichester District already has a growing reputation internationally as a forward looking local authority with a community willing and able to adapt to climate change.[29] Continuing to build on the coastal plain

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[26] https://www.ice.org.uk/getattachment/news-and-insight/policy/facing-up-to-rising-sea-levels/Facing-Up-to-Rising-Sea-Levels-Document-Final.pdf.aspx

[27]

https://journals.sagepub.com/doi/pdf/10.1177/0096340215599777

[28] http://www.oecd.org/environment/cc/policy-highlights-responding-to-rising-seas.pdf

[29] **http://jwcc.iwaponline.com/content/6/1/25**

http://repository.ubn.ru.nl/bitstream/handle/2066/139999/139999_1.pdf?sequence=1

http://www.icevirtuallibrary.com/doi/abs/10.1680/icocm2003.32552.0003

http://peninsulapartnership.org.uk/abd/wp-content/uploads/2012/12/Embracing-Climate-Change_Alarm.pdf

without a long term plan for this vulnerable area will undermine the council's credibility and will risk the social wellbeing and economic viability of the communities on the coast and harbour.

5. Environment.

Chichester district's wetlands are of national and international importance both because of their biodiversity and their high capacity to absorb CO2. The coastal plain to the south and west of Chichester contains Special Protection Areas, Special Conservation Areas and Ramsar sites. Sea level rise will result in coastal squeeze and loss of irreplaceable wetland without the ability for it to move inland. Development adjacent or close to coastal and harbour settlements will exacerbate coastal squeeze and hinder the opportunity for species and settlement migration.[30] The East Solent Coastal Partnership estimates that it will need to find between 400-500 hectares of additional coastal

wetlands this century and the Manhood Peninsula and Chichester Harbour areas offer great potential for compensatory habitat provision.[31]

http://www.chichester.gov.uk/CHttpHandler.ashx?id=5799&p=0

http://www.omicsonline.com/open-access/how-anglodutch-collaboration-produced-radical-longterm-integratedcoastal-planning-solutions-for-a-vulnerable-peninsula-on-britains-southcoast-jczm-1000S1-001.pdf

http://www.chichester.co.uk/news/local/coast-defence-experts-preparing-for-return-to-manhood-1-15046

https://issuu.com/aclegg/docs/manhood_dmp/12

http://peninsulapartnership.org.uk/abd/wp-content/uploads/2011/10/Towards-ICZM1.pdf

[30] https://www.carbonbrief.org/restoring-soils-could-remove-up-to-5-5bn-tonnes-of-greenhouse-gases-every-year

http://nora.nerc.ac.uk/id/eprint/505403/

[31] https://www.escp.org.uk/regional-habitat-compensation-programme

Chichester's coastal plain also contains some of the Best & Most Versatile agricultural land in the UK for growing crops (agriculture and horticulture), both Grade I and Grade II, due to its climate, topography, light conditions and soil quality. Recent events including Coronavirus and Brexit have made food security a growing political issue and highlighted the need for good growing land. [32] About 380,000 hectares of BMV agricultural land and 170,000 hectares of SAC, SPA and Ramsar sites in the UK are estimated to have a significant or moderate annual chance of flooding.[33]

NPPF Section 118 2b recognises that 'undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production."[34] The use of undeveloped land below 7m above sea level for a combination of wildlife migration, carbon sequestration, flood risk mitigation, food production and recreation is a much more productive use of land than for development, environmentally, socially and economically. Biodiversity loss and a lack of climate change response are highlighted among the major risks facing the planet.[35]

Chichester's coastal plain needs to be considered as a Special Habitat and Climate Change Mitigation and Adaptation Zone or as a Coastal Change Management Zone. By designating the low lying coastal hinterland as an area focusing on climate change mitigation, enhancement of wetland and coastal environment and enabling of species migration, agricultural and horticultural production and green tourism, CDC can provide a more positive environmental, social and economic future for its coastal and harbour communities.

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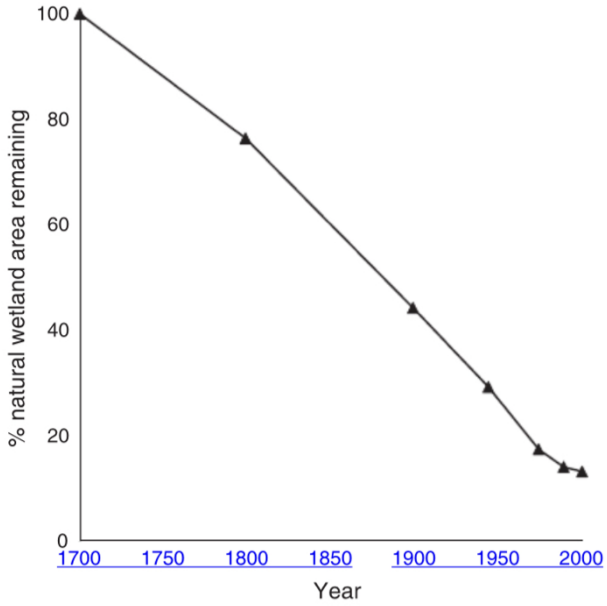
[32] https://www.foodsecurity.ac.uk/challenge/uk-threat/
https://foodresearch.org.uk/publications/feeding-britain-food-security-after-brexit/
https://blogs.lse.ac.uk/brexit/2020/05/21/covid-19-is-a-stark-reminder-of-how-deeply-the-uks-food-security-is-dependent-on-the-eu/
https://www.cisl.cam.ac.uk/resources/publication-pdfs/natural-capital-leaders-platform-the-best-use-of-u.pdf

[33] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/663885/Future_of_the_sea_-_sea_level_rise.pdf

[34] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

[35] https://www.marsh.com/uk/insights/research/global-risks-report-2020.html



Graph of disappearing wetlands worldwide [36]

6. Insurance

Coastal flooding is one of the greatest risks facing the UK and the rest of the world, according to insurers and reinsurers. Insurers are becoming more reluctant to insure homes built in vulnerable flood risk areas.[37] Flood Re was set up by the British government and insurance industry to help insure homes at risk of flooding but it does NOT provide cover for homes built after 2009, leasehold or rented properties.[38] There is a credible risk that homes built on the low lying coastal plain will be unable to obtain insurance or even mortgages in the future.[39]

7. Other considerations

[36] https://www.researchgate.net/publication/266388496_How_much_wetland_has_the_world_lost_Long-term_and_recent_trends_in_global_wetland_area

[37] https://www.marsh.com/uk/insights/research/the-global-risks-report-2019.html

[38] https://www.floodre.co.uk

[39] https://www.theguardian.com/news/2019/sep/18/weatherwatch-do-30-year-mortgages-make-sense-as-sea-levels-rise-faster-annually
https://www.cml.org.uk/news/news-and-views/homes-at-risk-of-flooding-what-next/

https://www.marketwatch.com/story/climate-change-could-impact-your-mortgage-even-if-you-live-nowhere-near-a-coast-2019-09-30
https://www.barrfoundation.org/blog/new-study-identifies-massive-risk-to-coastal-property-from-sea-level-rise

The district's **settlement hierarchy** needs to be adjusted to reflect the fact that Chichester's coastal and harbour communities will face materially increased, possibly catastrophic, flood risk by 2065. CDC may need to consider relocation of some communities in the future so should significantly restrict any expansion of coastal and harbour communities.

Density levels in the District should also reflect the physical ability of the site to absorb/drain flood water, whether ground water, surface water, fluvial or coastal flooding. Developers need to account for the fact that sud systems become compromised on sites where water tables are high.

Highways access needs to consider where residents likely will be working and/or seeking higher education/training and what other commuter choices are available including different road options, congestion issues, public transport and cycling facilities and distance. Settlements with no higher education/training facilities and low employment and accessed from only one direction (such as coastal settlements) should be considered as isolated and remote. This reflects the fact that the 2014-2029 CLP limited housing numbers due to traffic access and congestion issues on the coastal peninsula. These access constraints were confirmed as valid by the Government Planning Inspectors Report on the 2014-2029 Local Plan and have not changed.[40]

Contingency Planning is an important consideration for areas exposed to catastrophic flood risk. As a town surrounded by low lying land, and with only one B road in or out, an emergency plan has had to be drawn up for Selsey to help residents in the event of severe coastal flooding. Selsey has expanded significantly in recent decades and its resident population is now nearly half the size of Chichester, despite its vulnerable and isolated location. Including seasonal residents, Selsey has a larger population than Chichester. In the light of climate change the growth of this former small fishing village represents unsustainable and short term planning.[41] Further expansion of Chichester's coastal plain communities should be avoided to prevent more communities facing unacceptable levels of future risk and the need for emergency evacuation planning.

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[40] http://www.chichester.gov.uk/CHttpHandler.ashx?id=24307&p=0

[41] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/571572/LIT_5707.pdf