MATTER 3 - POLICIES - ENV1 & 2 and CC1 - submission by STOP350

Introduction
This Hearing Statement has been prepared by Stop350 and should be read in conjunction with the representations made to the Publication Draft Plan 2017.

Stop350 is a community based group that arose because of concerns about the CLP. Stop350 is authorised by individuals to act on their behalf. These representations come from over 1,100 people formed by a combination of residents of Mersea Island and close surrounding area.

We support sustainable development and recognise the need to plan for appropriate growth. We are engaging in the examination process in a constructive manner and appreciate that our role is to assist the Inspectors in deciding whether the CLP is Sound and, where necessary, to identify how the CLP could be made to be Sound.

In light of the regrettable significant passage of time between the consultation on the Publication Draft Plan and the Examination – some 4 years – we have updated the evidence which we rely upon in assisting the Inspectors in examining the CLP. This is set out where relevant in our statement.

Response to Inspectors Main Matters, Issues and Questions

The Inspectors have raised a single question in relation to Matter 3.

a ***Are the Environmental Assets Policies set out in CLP Section 2 justified by appropriate available evidence, having regard to national guidance, and local context, including meeting the requirements of the CS?***

As we set out below, the Environmental Assets Policies **are & are not** justified by appropriate evidence having regard to national guidance and local context.

We identify 9 key Issues in responding to this question when considering at Policies ENV1 to ENV5 & CC1.

Issue 1. Coastal Protection Belt (CPB).

Essex County Council first adopted this Policy in their Essex Coast Protection Subject Plan on 14th December 1984 as part of the Essex Structure Plan. It was reviewed in 2016 and has since then been adopted and updated by Colchester Borough Council, most recently adopted as Coastal Protection Belt in June 2017.

The entire undeveloped area of Mersea Island – without exception - falls within the scope of this policy. The update as recently as 2017 demonstrates the importance of this policy area.

CLP Section 2 recognises the importance of the CPB.

Paragraph 13.15 makes clear that the asset is “extremely rich” and “irreplaceable”.
Paragraph 13.16 notes that the area includes “internationally important habitats” whilst
Paragraph 13.19 sets out that the area has a “unique and irreplaceable character, which should be ***strongly*** (our emphasis) protected and enhanced”.

In this context we broadly support the provisions of Policy ENV2. This is a highly restrictive policy which reflects the importance of the CPB. As drafted, any development in the CPB must achieve each and all of the policy criterion. We support this approach.

Criteria (i) is fully supported. We object to Criteria (ii) since this permits harm within the CPB; this should be re-drafted to require enhancement to the CPB. For the same reasons we object to Criteria (iii). Criteria (iv) refers to sustainability benefits to the coastal communities only – and not the Borough as a whole which we support.

New development is proposed under policy SS12a which breaches the CPB but because it is on the edges of the settlement boundary, it is found to be acceptable. It is nevertheless in clear breach of Policy ENV1. There is thus a clear and deep tension and conflict within CLP Section 2.

We do not see how development into the CPB is both sustainable or meets the above criteria.

However should the CPB policy fail, then other protected areas surrounding Mersea Island must then be considered in their own right and the Policies of ENV1 and ENV2 come into play.

Issue 2 – Developing a Landscape for the Future

Colchester Borough Councils own commercial team highlights the importance of protecting and enhancing existing local landscape characters. It also states:

It is vital therefore that the Council makes sure an informed, local focused and inclusive approach is employed to continue to drive forward this landscape aspect of the Borough's planning. We will endeavour to deliver resilient and robust landscapes that remain true to local character and landscape traditions. We intend that our existing and future residents will be proud of their Borough as an attractive environment in which to live, work and invest, thereby helping to ensure it continues, through the ongoing development of locally inspired landscapes, to remain as somewhere all can enjoy and its residents will be proud to be part of as it matures.

We do not see how the development into the CPB is both sustainable or meets the above criteria.

Issue 3 Colchester Borough Landscape Character Assessment

This report by Chris Blandford Associates in November 2005 states in paragraphs 2.46 to 3.3.4 the importance of the Marshes and Mudflats surrounding Mersea Island and the need to conserve and enhance. Again in C1 Fingringhoe Estuarine Marsh/Mudflats which covers the eastern end of Mersea Island and in C2 Strood and Salcott Estuarine Marsh/Mudflats which covers the Strood approach to Mersea Island on the B1025 road way link to the mainland.

Again we do not see that the CLP policies are set out to conserve or enhance the important landscape character of the Island approaches or surrounding areas when it allows development to infringe upon these views.

Issue 4. Colchester Borough Council Landscape Capacity of Settlement Fringes.

In this report Colchester Borough August 2005 it states

5.0 WEST MERSEA FRINGES See Figure 11 (see below)

Character Area Profiles

E1, C2 and C3

Sensitivity and Value Landscape setting Area 1

Intrinsic Landscape Qualities	***SOME***
Contribution to Distinctive Settlement Setting	***VERY IMPORTANT***
Visual Prominence	***HIGH***
Intervisibility	***HIGH***
Landscape Sensitivity	***HIGH***
Landscape Value	***MODERATE***

Landscape Setting Area 1

Analysis

- *Topography slopes downwards from a high point/ridge just to the north of the settlement, towards the coastline (which is a designated SSSI);*
- *When approaching from the north across the Strood causeway, Colchester Road provides a distinctive approach to the setting area, with open views to the west across arable fields to the coastal channels and mainland coastal farmland;*
- *The landscape setting area comprises large open arable fields, across which, panoramic views of the Strood channel and coastal farmland to the north can be gained;*
- *The settlement edge is green in places to the north of Colchester Road, where vegetation frames views across the channel and coast;*

· *There are patches of harsh urban settlement edge to the north of Brickhouse Close and Whittaker Way;*
· *The open seascape (including salt marshes and mudflats) provides a distinctive southern backdrop area*

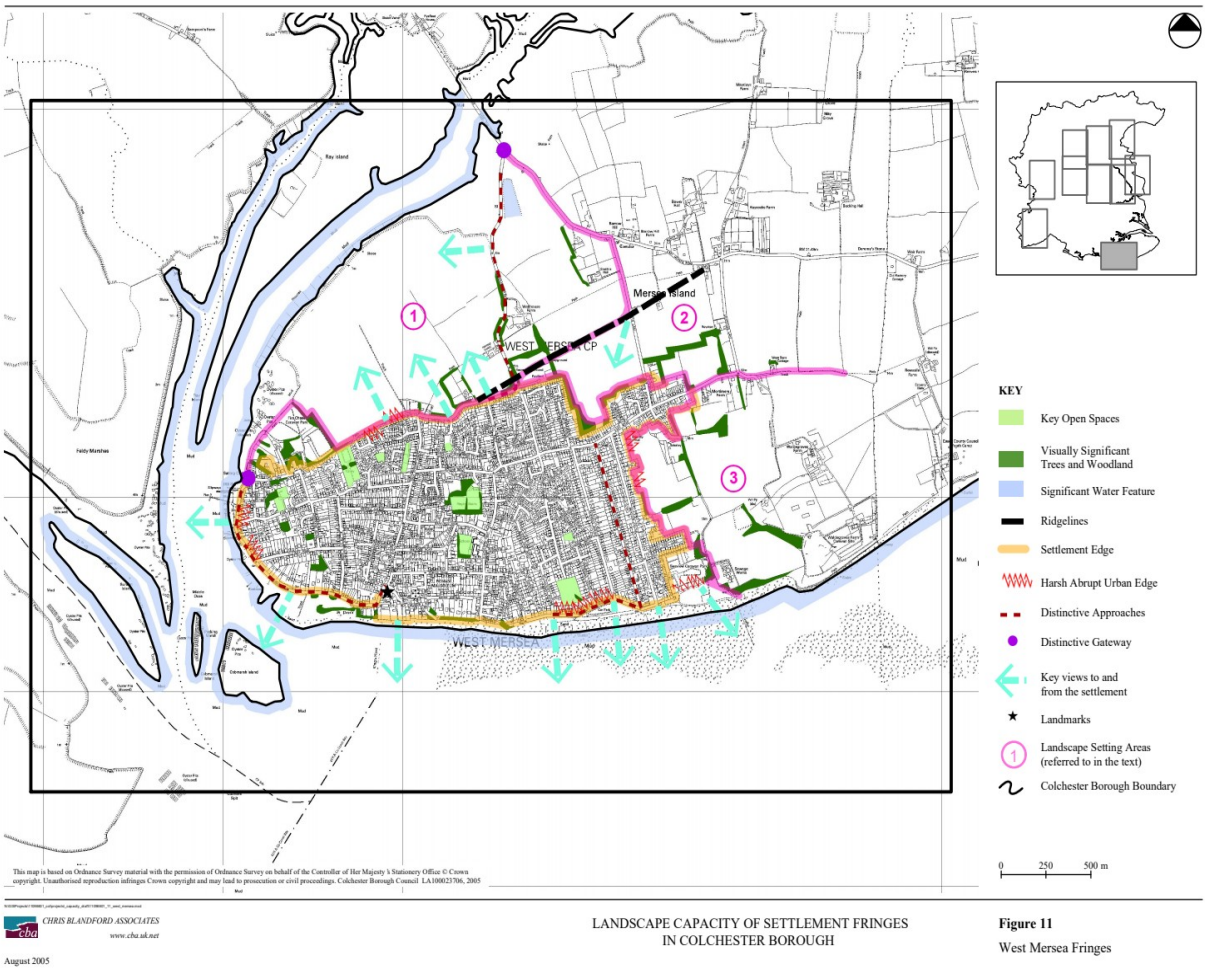


FIGURE 11

Also the European Landscape Convention (ELC) which came into force on 1st March 2007.

The ELC defines landscape as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. The ELC adopts a broad and inclusive definition of landscape embracing landscapes, seascapes and townscapes, as well as all forms of rural landscape. Article 2 states: 'the Convention...covers natural, rural, urban and peri-urban areas. It includes land, inland water and marine areas. It concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes.'

The NPPF in Para. 170 under Historic environment states:

> *Where appropriate, landscape character assessments should also be prepared, integrated with assessment of historic landscape character, and for areas where there are major expansion options assessments of landscape sensitivity.*

The CLP does not we believe consider the overall effect of development on Mersea Island.

Issue 5. Natural England Access and Sensitivity Appraisal

This report is part of Coastal Access Programme 28th June 2017 which covers Mersea Island. This document brings together in one place all issues relating to the protected sites in and around Mersea Island. Whilst concluding that the overall impact is likely to be seen as being capable of being mitigated by the adoption of the RAMS policy it does admit there are some unknowns.

The RAMS Policy of requiring £122.30 per unit dwelling to mitigate the potential impact of the extra dwellings upon the following areas and sites on and around Mersea Island namely:
SSSI - Ramsar Sites - NNR - SPA - SAC - CPB - MCZ.

However we have yet to see how a few wardens covering the whole coastline of this part of Essex can effectively police and monitor 24 hours a day all the activities of people using the Coastal areas around Mersea Island for recreation when arriving by vehicle, foot or in recreational waterborne craft.

Here again we do not believe the mitigation will anyway enhance the coastline and protected sites when considering the Island as whole.

The NPPF IN SECTION 11 covers in the following paragraphs: 109, 110, 114, &118 the important matters related to above.

We do not believe that full and proper consideration has been given to the intrinsic landscape values of the Island and the surrounding marshes or the protected sites around the Island.

Also we do not believe much enhancement is being proposed which is part of the policy ENV1 or NPPF policies listed above.

Policy ENV1 in its first paragraph states that:

> *The Local Planning Authority will conserve and enhance Colchester's natural and historic environment, countryside and coastline. The Local Planning Authority will safeguard the Borough's biodiversity, geology, history and archaeology, which help define the landscape character of the Borough, through the protection and enhancement of sites of international, national, regional and local importance.*

So we do not believe this policy is sustainable for Mersea Island.

Climate Change. Policy CC1

Since our original submission back in August 2017 more details and projections of Sea Level rise have come forward which indicate that the threats to Mersea Island have increased. Therefore we high light here some of the issues and support our submission with appendices and photos.

Issue 6. The increase in flooding times of the single road access the B1025 to Mersea Island.
Issue 7. The more frequent flooding of Coast Road.
Issue 8. The general erosion of the Island's sea defences.
Issue 9. The higher risk of a storm surges now over-topping the seawalls with the increased higher sea levels.

ISSUE 6. The increase in flooding times of the single road access the B1025 to Mersea Island.

The Colchester Borough Local Plan (CLP) did not ***"recognise that Mersea is an Island with restricted access due to it's single tidal road".***

At the time of the original research Back in July 2017 we did not have an actual accurate road count for vehicles crossing on and off the island and had used an accumulation of data on surrounding roads to compile an estimated value. We now have some more updated figures. These DETAILS can be found under Matter 18 DM20 & 21
The other change has been the climate change update on sea level rises expected till the end of the century, which now show a fairly dramatic increase in the predicted level of sea level rise. In Matter 3 CC1 -Appendix A it indicates the UK Mean Sea Level rise prediction till 2060 which is put at between 30mm to 370mm above present levels. Also if the present rise in temperature is kept below or well below 2^0 c to the end of the century, by 2100 the UK can expect a sea level rise above present levels of between 270mm to 670mm. If there is rise in temperature this would mean that by the end of the century the sea level rise would be between 270mm to 1120mm. [A]

The Strood roadway starts to be inundated at gutter level, which is it's lowest point, when the tide is predicted at (and actual makes a height of) 4.65m above chart datum (or approximately 2.0m above OD)[2] and the middle of the road this is 4.95m. i.e. the water meets across the road. Whilst this height of tide does not physically stop the traffic it does start uncertainty on whether to cross the Strood causeway and the inevitable slowing of vehicles with the consequence of the build up of queuing vehicles. (see vehicle traffic flow details later). This does have a knock on effect, not only to public transport, but also businesses on the Island in delayed deliveries and even cancelled deliveries.

The prediction of sea level rise to 2060 indicates that the gutter will flood, based on present levels, at between 4.28m to 4.52m and the middle of the road would this would be between 4.92m to 4.58m. However the land in this part of the UK is also sinking at a rate of approximately 1mm per year [ref] so one could anticipate a reduction of some 40mm from these figures up to 2060. So this would mean that the water would come into the gutter at between **4.24m** and **4.48m** by 2060

At present the water comes into the road gutter approximately **369** times a year in **2021** assuming 706 high tides a year as the high tides occur twice in a 24 hours period [1]. This potentially means that **52%** of the high tides come to the Strood gutters. However by 2060 the water would reach the gutter on between some 503 to 555 occasions equivalent **71% to 79%** of predicted high tides, an increase of some 36 to 52 % on the present state of affairs.

The issue of the Bus which is cancelled at times of high tide coverage of the Strood. This can be as many as five of the half hourly buses get cancelled, So in the worst case scenario there is a four hour gap in public transport on and off the Island.

The increase in development of Colchester Borough at the rate of 920 units per year will put further pressure on Island as the only local beach side resort. Colchester Council promotes in it's advertising Mersea Island and its Beach, Restaurants, Oysters and Fishing as very much a tourist attraction. Thereby increasing the number of vehicles coming to Island for day visits as well as holidays.

One other consideration is the latent damage to vehicles. Any vehicle crossing when the road is flooded will be going through salt water. Whilst the immediate effects of salt water may not show, there is a long term issue of seized brakes, corroded bearings and electrical wiring terminals corroding. Salt crystals continue to attract moisture which continues the corrosion process. It has long been a known fact that the local motor trade never willingly buy a vehicle from Mersea Island or if part exchanging move it on quickly!

Issue 7. The more frequent flooding of Coast Road.

The Coast Road along far Western end is liable to tidal flooding with the water reaching the road at about the same time/level as it reaches the Strood Road crossing onto the Island. This cuts off on the bigger tides the access to the public Toilets and Car park as well access to Firs Chase.

In event of a large Tidal Surge warning it is intended that temporary flood barrier will be erected at the bottom of The Lane at the extreme end of Coast Road. Also barrier across Carriers Close and adjacent properties. Details and photos in the appendix to these issues.

Issue 8. The general erosion of the Island and it's sea defences.

The southern and south-eastern foreshore of Island are being eroded at an increasing rate as can be seen from studies and pictures. Little if any plans are in place to defend the erosion of the Island. See Appendix covering this issue **Essex and South Suffolk SMP2 Final version 2.4- 155 -15 October 2010.**

The harbour area of Mersea is also under severe threat and it is hoped that a recharge of Cob Marsh Island from the dredging spoils from the new Felixstowe Dock Extension being undertaken by the Mersea Harbour Protection Trust will slow this process down. See Appendix for details.

Issue 9. Storm Surges associated with Sea Level Rise.

The height of the seawalls protecting low lying areas both on the Island and Mainland. This is an important issue on the mainland around the B1025 especially at the area of the Electricity sub station, which has now been placed within a coffer dam, as this area comes within some 450m of the seawall at end of Langenhoe Creek. The Mersea Road Peldon is also only some places only about 3m above OD and about 300m from the seawall. These seawalls were rebuilt after the floods of 1953 and raised to the height of the 1953 flood. The tidal surge in 1953 was a 1 in 100 years. However 60 years on the surge of the night 5/6th December 2013 at 4.40M ODN (came within 30mm of the height of the 1953 surge of 4.43m ODN.[5]). In the 1953 flood both these roads remains flooded for nearly two weeks and effectively cut Mersea Island off from the mainland.

A number of areas along the southern side of the Island will be effected with flooding from a large tidal surge. These include properties along the north-western end of Coast Road and some

properties on the old boating lake at Shears Crescent. A number of the Caravan sites will also be effected in there low level areas below the 5m OD line. See appendix for flood map.

The Tidal heights come with a **weather warning** as they are all worked out on **predicted tide heights** and these predictions are based on a barometric pressure [A] and moon phases.

Island status is not considered by NPPF but in section 10 in the following paragraphs: 94, 99, 100 &106 are relevant to our issues.

Conclusion

We do not believe proper consideration has been given to the Island status when the above issues are taken into account.

Therefore we contend that Mersea Island is not a sustainable Urban Centre because of the above stated short comings when considering the whole Island.

APPENDIX ISSUE 6 - The increase in flooding times of the single road access the B1025 to Mersea Island.

A .These are extracts from Essex County Council Climate Action Commission Interim Report published November 2020 [B]

We look at the latest science from the Intergovernmental Panel on Climate Change (IPCC) and the UK's Met Office, we can begin to put some bounds around the inevitable amount of future change. We have published these estimates in the table below.

https://www.theccc.org.uk/2020/04/21/how-much-more-climate-change-is-inevitable-for-the-uk

A	B	C	D	E	F
Measure	**What has happened so far?**	**What is likely to be inevitable by mid-century under most global emissions pathways?[i]**	**What could be the change by the end of the century and beyond, based on a low emissions pathway estimated to be consistent with keeping global warming 'well-below' 2°C?[ii]**	**What could be the change by the end of the century and beyond based on an emissions scenario broadly consistent with current global emissions trends?[iii]**	**What could happen by the end of the century and beyond in a very severe future climate change scenario?[iv]**
Time period	Present day	Mid-century	End-century	End-century	End-century
Global average surface temperature[v]	Over 1°C above pre-industrial levels.[vi]	By 2041-2060, +0.2-0.9°C over present levels.	By 2081-2100, -0.1-+1.1°C above present levels.[vii]	By 2081-2100, +1.2-2.5°C above present levels.	By 2081-2100, +2.4-4.2°C above present levels.
UK annual average temperature [viii]	About +1.2°C above pre-industrial levels.[ix] We have experienced a +0.8°C increase since 1961-1990.	Around +0.6°C from present level by the mid-2050s.	Around +0.7°C from present level by the mid-2080s.	Around +1.9°C from present level by the mid-2080s.	Around +3.0°C from present level by the mid-2080s.
Global mean sea level rise[x]	~21 cm increase from 1900.	+10–25 cm over present levels by 2050.	+22–52 cm over present levels by 2100 and 53–103 cm by 2300.	+26–56 cm over present levels by 2100.	+54–103 cm over present levels by 2100 and 220–530 cm by 2300.
UK mean sea level rise	~16cm since 1900.[xi]	+3 to +37 cm from present levels by 2060.[xii]	+5 to +67cm from present levels by 2100.	[Not available]	+27 to +112cm from present levels by 2100.
UK heavy rainfall[xiii]	Some indications of increasing heavy rain but difficult to quantify.[xiv]	+10% increase from today by 2050.[xv]	+20% increase from today by 2100.	[Not available]	+50% to +70% increase from today.
UK heatwaves – 'like 2018 summer'[xvi]	Now a 10 – 25% chance each year, compared to <10% chance each year a few decades ago.	50% chance each year by 2050.	50% chance each year by 2100.	[Not available]	90% chance each year by 2100.

Three messages emerge when we look at the results in the table above :

1. It is likely that the UK will experience at least another half a degree of warming by 2050. *Column C in our table shows a central estimate for the minimum temperature increase by 2050. Even with immediate, sustained, and very rapid reductions in greenhouse gas emissions globally, the latest UK climate projections (UKCP18) suggest the country will experience an additional warming of around 0.6°C between now and 2050. This is due to the fact that it will take time for the world to reduce emissions down to Net Zero even under the most optimistic scenarios. Along with this rise in temperature, by the middle of the century we can also expect around another 3 to 37cm of sea level rise for different parts of the UK, a 10% increase in heavy rainfall, and a 50% chance of each summer being hotter than 2018. These are the minimum levels of changes we must plan to adapt to. Our latest adaptation* progress report to Parliament *from 2019 suggests that in most sectors, this minimum level of planning is not yet happening.*

2. Reducing global emissions rapidly can still prevent further warming in the UK beyond this 'inevitable' level. *If global greenhouse gas emissions are brought rapidly to Net Zero in the second half of this century (expected to keep global temperatures below 2°C), UK temperatures (and rainfall) in 2100 (Column D) could be kept close to their level in 2050. However, sea levels in the UK would continue to rise, as they respond more slowly to changes in global temperature. The UK contribution to the global decarbonisation effort is through its target of reaching Net Zero greenhouse gas emissions by 2050 and the intermediate binding carbon budgets. You can read about our latest assessment of efforts to reduce UK emissions here. The message is the same as for adaptation; more needs to be done to meet our domestic mitigation goals.*

3. In the absence of large-scale actions to reduce global emissions, considerably more changes in the UK's climate will be seen beyond this 'inevitable' level.
For futures consistent with current global emissions trajectories through to a 'high-end' scenario (columns E and F), UK annual mean temperatures would likely increase by a further 2 to 3°C from today by the end of the century. The point at which sea level rise exceeds 1 metre for the UK will also come much sooner; this could even take place within the next 100 years.

What does all this mean?
It means that we have to adapt, whatever happens with UK or global emissions in the future. It also means that the success or otherwise of global efforts to reduce emissions will have a profound impact on the UK's climate in the second half of this century. And finally, it is clear that mitigation and adaptation together are needed to address the climate challenge. Neither on its own will solve the problem.

Essex County Council Report on *SPONGE 2020*

• Coastal flood resilience schemes in critical areas to be implemented by 2023
• The scale and impact of climate change is acknowledged by those with responsibility for the coast and communicated to the people who live there
• A new policy for coastal flood risk and erosion management is drawn up with clear, evidence-based outcomes
• SuDS is implemented in all new developments and enforced, with clarity over who adopts and maintains it
• A support service on adaptation for businesses is re-established – this could be at local or national government level

Economic benefits: *The UK experiences an average of £1,400 million in damages from flooding per year, even with the present flood and coastal defences on which it currently spends around £800 million per year. The Environment Agency estimates that every £1 spent improving protection from flooding and coastal erosion saves around £5 of property damages. As well as damages to property, there can also be significant disruptions through damage of vital amenities such as hospitals, schools, emergency services and*

transportinfrastructure, as well as longer term impacts on Essex's coastline as a tourist destination. In 2012, the UK Committee on Climate Change estimated that the annual expected costs of flooding could increase from £1 billion now to between £1.8 billion and £5.6 billion (present day prices) by the 2080s[1] . Essex faces significant risk through climate change and sea level rise; the areas at greatest threat from flooding and erosion in future will be along major estuaries and the east coast. [2]

1 *https://www.theccc.org.uk/wp-content/uploads/2012/07/CCC_ASC_2012_bookmarked_2.pdf*

2 *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/300332/04-947-flooding-summary.pdf*

Climate change – is the UK preparing for flooding and water scarcity? *Adaptation Sub-Committee Progress Report 2012*

Box ES.1: ASC advice for the National Adaptation Programme in relation to flooding and water scarcity:

Flooding

• Ensure robust and transparent implementation of planning policy in flood risk areas, so that local authorities consistently and explicitly take into account the long-term risks of flooding when deciding the location of new development.

• Support sustained and increased investment in flood defences from public or private sources, given that current spending plans will not keep pace with increasing climate risk; or in the absence of this, identify ways to manage the social and economic consequences of more frequent flooding.

• Enable greater uptake of property-level measures to protect against floods and encourage greater use of sustainable drainage systems to manage surface water.

Next steps

• Over the next two years, the ASC will apply its toolkit to other key climate risks and opportunities identified as priorities by the CCRA, including those affecting agriculture, forestry and the natural environment, impacts of heat and cold on human health and energy use, and changes to business supply chains and consumer demand. For each key risk or opportunity, we will aim to identify an appropriate set of indicators and use them to help assess how well each priority sector is preparing for climate change.

• This autumn we will also provide advice to inform early thinking on the second risk assessment, drawing on lessons from the first and from experience in other countries. This advice will also examine some of the important research gaps that need filling in the intervening years.

A different view of Climate Change from the Dutch!

Think it's bad now? Britain faces 6ft rise in sea level, warns Dutch expert

ST. Feb23/20

DEFENCES

Jonathan Leake
Environment Editor

Britain should be preparing for its seas and tidal rivers to rise by up to 6½ ft in the next 80 years, according to the scientist in charge of protecting Holland against flooding and sea level change.

Peter Glas, head of Holland's Delta Programme, which oversees long-term flood risk management, will tell a UK conference that the rise in the level of the North Sea may accelerate sharply from 2050, potentially reaching 2 metres (6½ ft) by 2100. That is nearly double the Met Office's worst-case predictions.

It follows research at Holland's Deltares centre, commissioned by the Delta Programme, into the impact of rising sea levels on northern Europe. "The rise could potentially accelerate with effect from 2050, entailing far-reaching consequences," said Glas's latest report to the Dutch government, which he will cite at this week's Floodex conference in Peterborough.

Such a rise could devastate UK coasts, which, unlike Holland's, have few defences against even a 3ft rise, let alone one of nearly 7ft. It could inundate towns along estuaries and wreck those that are miles inland on tidal rivers such as the Thames, Severn, Wye and Tyne.

Such floods would be in addition to the river flooding already being caused by surging winter rainfall.

Global sea levels are already 8in higher than in 1900 and rising by 0.13in each year. About half of the increase is because the world has warmed by about 1.1C, making seawater expand. The rest is a result of melting ice sheets and glaciers.

The Delta report added that effects of "the more rapid melting of Antarctic ice sheets" had not yet been incorporated into the programme's predictions.

Holland's record in flood protection stands in stark contrast to the UK's. The Delta Programme, set up in the 1950s, has covered the nation in a network of drainage channels, flood channels and sluice gates – since when no one has been killed by flooding.

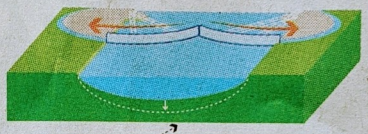
Last autumn Glas invited Ria Geluk, a survivor of the 1953 flood disaster that killed 1,835 people in Holland and 307 people on the east coast of England, to speak at the Delta Programme's annual conference. She had one message for the 1,000-plus delegates.

"The water will come," she told them.

HOW DOES HOLLAND STAY DRY?

While Britain faces repeated floods, Holland has been largely unscathed — even though much of the country is below sea level

River channels
Dredging channels and adding floodgates help keep Holland dry



Secondary channels
Some rivers have been given back-up channels to store water and take it away

Natural defences
Raised banks and flood plains along rivers and coasts can block or absorb surplus water

Dordrecht, Holland's oldest city, is built on a bog and lies below sea level but, unlike Britain, has been made largely safe from floods

ZGN ZGN

A view from the air looking south across B1025 The Strood towards Mersea Island. The main road branches at it's junction with Island with the B1025 going right to West Mersea and left towards East Mersea and Dawes Lane.
The tide is not actually on the road in this photo. Photo by Alan Brook.

A picture from the Sun by Stephen Huntley showing submerged cars and Kayaks on road!

morning.

Two cars got stuck in a High Spring tide at the Strood, Mersea Island, Essex

Credit: Stephen Huntley/HVC

A higher Tide showing flooded and floating cars. On this day all emergency services HM Coastguard with two search teams, two RNLI Lifeboats, Rescue Helicopter, several police vehicles and the Fire-brigade. All to look for a missing driver from one of the vehicles. The driver from the vehicle abandoned had walked home and informed no one.

The marker tidal gauge on the left of the photo is showing a depth of some 4 ½ feet.

It should be noted that Mersea Island has a large voluntary support groups who partake in a number of emergency services for the Island which are critical to support the residents and visitors. These groups are also very important to the Island at times when the tide covers the Strood and evacuation for medical reason is required. Also when the fire brigade have been unable to access the Island from the mainland.

Fire Service: There is a fire station and a team of retained firemen who have to live and work within 3 minutes of the station in Barfield Road.

Royal National Lifeboat Institution: There is a lifeboat station at the western end of Coast Road which is all run by volunteers who both man the station, launch the lifeboat and crew the lifeboat, normally about 20 individuals.

HM Coastguard: There is a team of volunteers who have a vehicle and are stationed at Rushmere Close industrial area. They are called out by Dover Coastguard to respond to any incidents in the local area. They coordinate all maritime and coastal incidents and are responsible for incidences such as the flooding at the Strood in th above photo.

Mersea Island Community First Responders: a team of volunteers who are called via the East of England Ambulance Service to respond to a medical emergency.

However this comes with a **weather warning** as this is all worked out on **predicted tide heights** and these predictions are based on a barometric pressure [A]

[A] (A low barometer pressure will allow the sea level to rise and a high barometer pressure will tend to depress it) :

Tidal predictions *are computed for average barometric pressure. The average barometric pressure for the United Kingdom varies between 1016mb along the south coast of the U.K. to 1011mb in the north of Scotland. A difference from the average of 1mb can cause a difference in height of about 10mm.* [2]

Wind effects: *The effect of wind on sea level - and therefore on tidal heights and times - is very variable and depends largely on the topography of the area in question. In general it can be said that wind will raise sea level in the direction towards which it is blowing. A strong wind blowing straight onshore will pile up the water and cause high waters to be higher than predicted, while winds blowing off the land will have the reverse effect. Winds blowing along a coast tend to set up long waves which travel along the coast, raising sea level where the crest of the wave appears and lowering sea level in the trough. These waves are known as "storm surges". They have a period of many hours and wavelengths measured in hundreds of kilometres.*[3]

Storm surges: *Storm surges are a rise above (positive surge) or fall below (negative surge) the normal predicted tidal level on the open coast caused by both static pressure and dynamic wind effects. A typical oscillation of sea level can be set up when a strong southerly wind is abruptly replaced by a strong northerly wind. For example when water which has been piled up in the north part of the North Sea is released and travels south as a wave or series of waves, it can be given added impetus and amplitude by the northerly wind. It should be noted that oscillations of sea level are not restricted to movement from north to south and vice versa; similar oscillations may take place from east to west and in other directions or could result from a combination of several different oscillations resulting in a complicated pattern of changes in sea level. The highest surges tend to occur when a deep depression, moving in This document is provided for information purposes only. It cannot be republished without prior permission. The National Oceanography Centre can accept no liability in relation to the use of this document. For further information please contact dataproducts@noc.ac.uk. from the Atlantic, travels slowly across the north of Scotland from west to east, causing strong and sustained north-westerly or northerly winds. A wave is set up which travels down the coast at approximately the same speed as the tidal wave i.e. if the wave's crest arrives at, say, Aberdeen near the time of high water, the same crest will arrive at the Tyne near high water and will also arrive further south at or near the time of local high water. Of equal importance to the time at which the crest of the surge arrives is the range of the tide on the day in question. Surges which occur at or near neap tides (i.e. tides of decreased range which generally occur just after the times of first and last quarter) seldom cause abnormally high levels, but relatively small surges occurring at or near spring tides (i.e. tides of increased range occurring just after full or new moon), especially equinoctial springs, can be dangerous. Large positive surges of this kind are fortunately rare but smaller surges which raise the height of high or low water between O.6m and 0.9m are not infrequent and may occur several times during a normal year in the North Sea. Negative surges of over 0.6 metres occur about 15 times a year in the southern North Sea, sometimes exceeding* ***1 metre****.* [3]

[1] *Because the Earth rotates through two tidal "bulges" every lunar day, coastal areas experience two high and two low tides every 24 hours and 50 minutes. High tides occur 12 hours and 25 minutes apart. This occurs because the moon revolves around the Earth in the same direction that the Earth is rotating on its axis.*

[2] *Chart Datum* [4] *is the most common datum for tide tables, although for engineering purposes, Ordnance Datum is more common as it is easier to relate the height of the water to levels on land.*

In the H R Wallingford report on Bradwell Power Station FED discharge document March 2014 it gave the following info:

The horizontal co-ordinates are referred to the British National Grid and vertical levels to Ordnance Datum Newlyn (ODN). ODN is approximately 0.2 m below mean sea level at Newlyn, and 2.68 m above Admiralty Chart Datum (CD) at Bradwell; CD is approximately the level of the lowest astronomical tide. The mean tidal range at Walton-on-the-Naze (an Admiralty Standard Port near the mouth of the estuary) is 3.8 m on spring tides and 2.3 m on neap tides. The tidal range at Bradwell is somewhat larger: around 4.8 m on spring tides and 2.9 m on neap tides.

Reeds Nautical Almanac also gives Clacton as -2.33m, Bradwell on Sea as -2.68m and Osea Island as -2.63m. **Therefore we estimate the Strood is approximately -2.65m.**

[3] **https://noc.ac.uk/files/documents/business/Tides-and-Meteorological-Effects.pdf**

[4] From National Oceanography Centre

What is a datum?

When measuring the height of a water level, it must be specified relative to some other level called the datum. In day-to-day use the height of an object is usually given relative to the floor on which that object is sitting. In this case the datum is the floor and it is usually obvious what the height is measured from so is not explicitly stated. However with tidal levels the datum must be specified as there are numerous possible datums that could be used when giving the height of the tide. Here's an analogy - if I am holding a ball out at arm's length it might be 1.0m above the floor but if I move to stand by my desk it could be described as 0.5m above my desk. All that has changed is the datum (the floor or the desk). If I set the ball on the floor its height is now 0m to 'floor datum' and -0.5m to 'desk datum'. You can see that if I raise the height of the datum I reduce the height of anything measured relative to that datum.

Tidal Datums

With tidal levels the two most commonly used datums are Chart Datum and Ordnance Datum. Some tide table formats might say "Heights given to Chart Datum" and not mention the other one. However many of our standard formats state the datum and the position of the other datum relative to this. Chart Datum is unique to each location and is usually set to be close to the lowest tide level that can occur under normal meteorological conditions. Therefore heights will almost always be positive values. Ordnance Datum is a datum common to all locations and is required when comparing the heights at different ports - something you can't do with Chart Datum tide tables as it is not a fixed level everywhere. Chart Datum is nearly always below Ordnance Datum and a tide table will often have a statement giving the datum used, and relating it to the other – something like this: Datum of Predictions = Chart Datum: 2.3 metres below Ordnance Datum (Newlyn) This means Chart Datum is the lower datum of the two (like the floor in the analogy) and therefore the heights (the length of the arrow) will be higher than on a tide table with all the heights given to Ordnance Datum (the table in the analogy). Chart Datum is the most common datum for tide tables, although for engineering purposes, Ordnance Datum is more common as it is easier to relate the height of the water to levels on land.

Datums in the British Isles

Ordnance Datum (Newlyn) is the datum of the land levelling system used for most of the UK and is defined as the average value of the sea level recorded at Newlyn for the period 1915 to 1921 (6 years). However due to sea level rise since this time, the current mean sea level at Newlyn is about 0.2m above Ordnance Datum (Newlyn). Ordnance Datum (Belfast) is defined as the average value of the sea level at Belfast for the period 1951 to 1956. This is approximately 2.7m above Ordnance Datum (Dublin). Ordnance Datum (Dublin) is unusual in that it is based on the level to which the tide fell on 8- April 1837 in Dublin Bay rather than a mean sea level. This makes it much closer to Chart Datum than any of the other Ordnance Datums. Ordnance Datum (Malin) is the same level as Ordnance Datum (Belfast). For tidal levels offshore, sometimes mean sea level (MSL) is used as the main datum. Alternatively, Lowest Astronomical Tide may be used as this can be estimated from a set of observations or tidal records.

[5] Southern North Sea storm surge event of 5th December 2013: Water levels, waves and coastal impacts. Published 15th April 2015. https://core.ac.uk/download/pdf/42133386.pdf

In this reports conclusions the last paragraph states;

For future planning, adaptive coastal management strategies need to cope with the progressive acceleration in sea level rise as well as the less predictable impacts of large storms or phases of enhanced storminess. Environmental modelling provides the best chance of understanding and planning for this combination of sea level and storminess as multi-scenario outcomes can be explored that can feed into storm surge forecasting. This paper suggests, from detailed new evidence, that there are complex interactions between (1) tidal stage, surge dynamics and surge event-related wave fields and (2) the coastal landscape encountered. New models will need to be able to account for these variable spatio-temporal effects. For people whose lives and livelihoods are likely to be affected by future storm impacts, such a more nuanced strategy offers the promise of greater environmental security, through the implementation of improved early warning systems and evacuation planning.

Maximum, minimum and mean water level elevations surveyed for the storm surge of 5–6 December 2013. ODN = Ordnance Datum Newlyn where 0.0 m ODN approximates to mean sea level. See Supplementary Material, Fig. S2 for locations of all sites (site number is given in brackets after site name).

Location	*N*	*Max (m ODN)*	*Min (m ODN)*	*Mean (m ODN)*		
Essex						
Stour estuary						
Harwich Pier (49)	*3*	*3.63*	*3.52*	*3.59*		
Manningtree (50)	*7*	*3.75*	*3.71*	*3.73*		
Hamford Water						
Landermere (Landers Lane) (51)	*13*	*3.63*	*3.52*	*3.56*		
Walton Backwaters (Titchmarsh Marina) (52)	*4*	*3.57*	*3.54*	*3.55*		
Walton Backwaters (Walton Yacht Club) (53)	*2*	*3.58*	*3.57*	*3.58*		
Blackwater estuary					***actual Tide Height***	
The Strood (54)	***11***	***3.95***	***3.72***	***3.88***	***+ 2.65***	***= 6.53***
Mersea Island (West Mersea) (55)	*14*	*4.40*	*3.42*	*3.86*		
Tollesbury (Tollesbury Marina) (56)	*6*	*3.87*	*3.48*	*3.72*		
Heybridge (Heybridge Creek) (57)	*8*	*4.00*	*3.90*	*3.94*		
Heybridge Basin (lock gates) (58)	*1*	*3.83*	*3.83*	*3.83*		
Maldon (The Hythe) (59)	*5*	*4.07*	*3.90*	*4.01*		

ref

The map, produced by scientists from Durham University, charts the post Ice-Age tilt of the UK and Ireland and the changes in sea level this produces.

According to the map, the sinking effect in the south could add between 10% and 33% to projected sea level rises caused by global warming over the next century.

Scientists, led by professor Ian Shennan and funded by the Natural Environment Research Council, looked at the relationship of peat, sand and clay sediments that have been uplifted above sea-level or are now submerged below sea level.

The team radio-carbon dated samples to see how sediments formed and to calculate changes in sea-levels over thousands of years.

Eighty, in the UK and Ireland, were cored and examining sediments in drainage ditches and road excavations, the team found evidence of land rises and falls from the relative elevation of sediments.

These results were assessed along with previous studies of sites including the Thames, Humber, Tyne and Tees estuaries, southern England, Ireland, Wales and Scotland.

Professor Shennan said: "The new map shows how the UK and Ireland are responding to the ice sheet compression of the earth's core and the current rate of land tilt across the UK.

"Sea levels 7,000 years ago were some 15metres below the present levels in the Fenland in eastern England, and the levels are still rising.

"The team predicts levels will continue to rise as the land falls, at a rate of 0.4 to 0.7millimetres a year.

"Sea-level rise brings in sediment which is soft and consolidates in coastal areas.

"Sea defences built on soft sediments can suffer additional subsidence due to compaction of the sediments."

Matter 3

Appendix for ISSUE 6 - Traffic Issues References

[B] Health warning for METHODOLOGY on automatic count data:

Although checked intermittently the equipment remains unmanned for much of the duration of the survey, and can potentially be interfered with, vandalised, damaged or stolen and Essex Highways cannot be held responsible for any periods where data has not been captured.
The equipment is located in accordance with the details provided by the client and Essex Highways cannot be held responsible for the accuracy of the data or loss of equipment due to theft and vandalism.
16hr AADTs are calculated using the seasonal COBA methodology; DMRB Vol. 13, Pt 4: Traffic Flow Input To COBA, with formulae available in the (hidden) config worksheet.
Automatic traffic counts are undertaken using a pair of pneumatic tubes installed securely across the carriageway, one metre apart, recording air pulses to determine vehicle speed, class and volume. The ATC equipment generally remains in place for a consecutive seven day period, and the data analysed post-survey.
In queuing conditions, the accuracy of ATC recording equipment may reduce as follows;

- *20 – 30mph: potential reduction of 9% accuracy in volume values*
- *10 – 20mph: potential reduction of 26% accuracy in volume values*
- *00 – 10mph: potential reduction of 39% accuracy in volume values*

These figures are based on multiple ATC results compared against accepted reference values from resilient manual counts.

Traffic on all urban roads has increased by 2.2% between 2018 and 2019.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/916749/road-traffic-estimates-in-great-britain-2019.pdf

Traffic trends by road type The overall trends in traffic by road type are largely driven by the trends in car traffic, as cars account for over 70% of the vehicle miles travelled on each of the different road types. The table below shows the change in motor vehicle traffic compared to 25 years ago by vehicle type and road type Urban and rural trends In 2019, rural 'A' and rural minor roads carried 43% of all motor vehicle traffic between them; around 16% more vehicle miles than those travelled on urban roads. This is partly due to the fact there are a greater proportion of rural roads. When considering the average daily flow, rural roads (12,300 vehicles on rural 'A' roads; 1,100 vehicles on rural minor roads) were far below the level on urban roads (19,100 on urban 'A' roads; 2,600 on urban minor roads). Since 1994, traffic on rural roads has risen by 39% and 47% on 'A' roads and minor roads, respectively. Similar growth has been seen on urban minor roads, which have increased by 36%, however this is in contrast to the relatively flat trend in urban 'A' road traffic (1% increase). This pattern has varied amongst vehicle types, with van traffic on urban roads rising 80%, compared to a fall of 26% in lorry traffic over the same period.
Percentage change in road traffic in Great Britain, 1995-2019
Urban Minor Roads:- Cars and Taxis +29% Vans +112% Lorries -29% Other Motor Vehicles + 25% All Motor Vehicles + 36%
Road Count details B 1025 https://roadtraffic.dft.gov.uk/manualcountpoints/941073

Quality flags in data downloads below

DfT's road link level traffic estimates are calculated using a variety of methods, with some methods likely to produce more accurate estimates than others.

*The data tables available to download here contain a column – **estimation_method** – showing the method used to estimate traffic for each location and year. Figures having an estimation method of "Counted" are likely to be more accurate than those marked as "Estimated", and the latter should be used with caution*

Annual Average daily flow 12 hour 0700 to 1800 [z]

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2019	Manual count	16	61	6510	45	1237	150	8003
2018	Manual count	30	61	6360	48	1356	148	7973
2017	Manual count	12	48	6418	29	1284	111	7890
2016	Manual count	22	68	6381	46	1295	193	7984
2015	Manual count	33	48	5909	55	1223	161	7397
2014	Manual count	62	84	5911	68	1049	223	7334
2013	Manual count	19	86	5518	40	1140	181	6966
2012	Manual count	50	69	5834	46	1024	129	7103
2011	Manual count	39	67	6262	49	1104	142	7624
2010	Manual count	19	64	6157	47	1228	215	7711
2009	Manual count	38	77	5525	58	978	277	6915

Matter 3

Appendix for ISSUE 7 . Coast Road

you tube reference

Coast Road Flood barrier at The Lane - Extracts from West Mersea Temporary Defence Deployment Plan - 02/03/2018

Introduction

Mersea Island sits within the Blackwater and Colne estuaries to the south-east of Colchester, the local area has suffered from historical tidal flooding along the end of Coast Road due to a low-lying section of land which is currently undefended.

Demountable defences have been selected by the Client as the best solution for this location to stop water surcharging up 'The Lane' which has caused property flooding in the past.

To ensure the effective 'low spot' is protected, it is recommended that two sections of the defence consist of demountable barriers (Map 1: Overview and Figure 6 below). The first single height alignment will then tie into the extended flood walls in Carriers Close. The second single height alignment will tie into the existing flood walls in The Lane.

The barrier must sustain the following:

- *• Static hydraulic pressure from the tidal water*
- *• Wave load (in addition to the static load)*
- *• Debris load (in addition to the static load)*

The following calculations will determine the predicted wave and debris loading that the defences may be subject to during a 1 in 20 year design event. There is no Client requirement to consider climate change for this scheme.

Figure 6 Location and details of flood barriers at Mersea Island

Figure 3: Tie into flood wall at Carriers Close in front of properties along single driveway at the end of Coast Road. Ensure cars are removed before deployment, and that pedestrian access is available to properties after deployment. Advise residents of pre-deployment to allow them to leave if required.

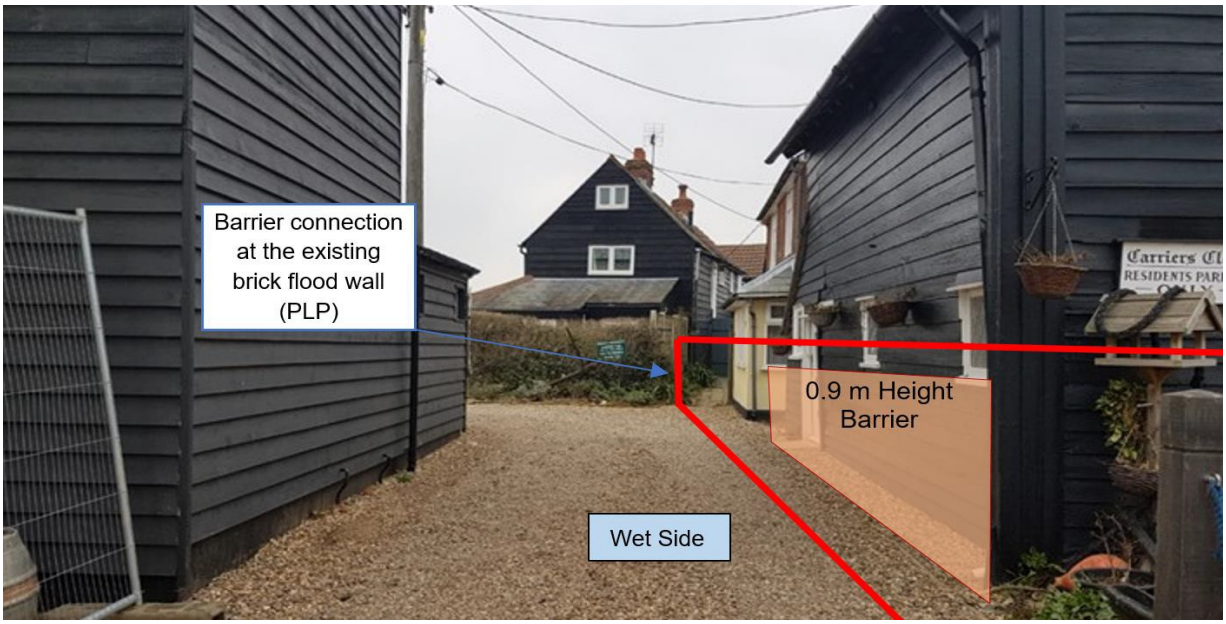
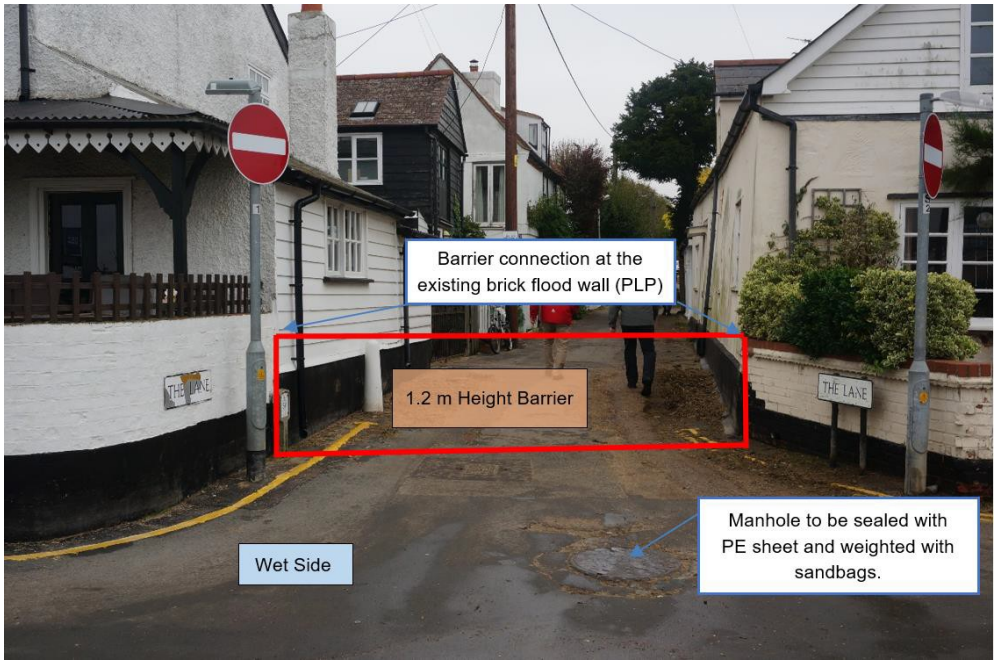


Figure 4: Pump location at Carriers Close. Place discharge hose over the barrier.

Figure 5: View of deployment from the end of The Lane



View along Coast Road from Firs Chase looking North-west towards the Public Car Park and Toilets (big red brick building)

MATTER 3

Appendix ISSUE 8 Island erosion.

Essex and South Suffolk SMP2 Final version 2.4- 155 -15 October 2010

Summary of Specific Policies

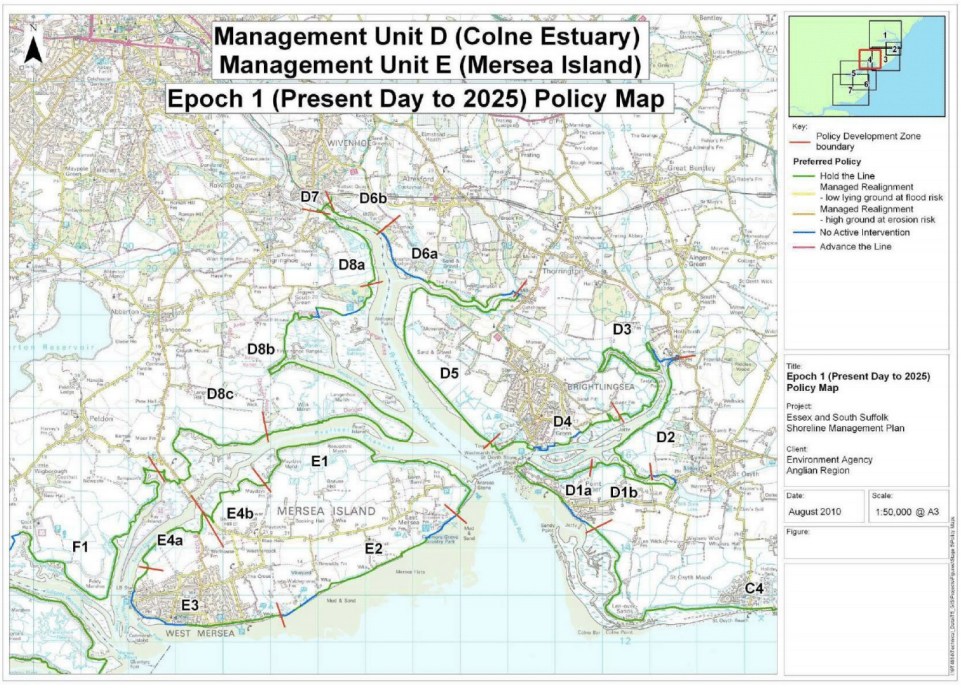
Policy Development Zone		Policy Plan			
		Now - 2025	2025 - 2055	2055 - 2105	Explanation
E1	Landward Frontage	HtL	HtL	HtL	The current line will be held throughout all epochs.
E2	Seaward frontage between North Barn and West Mersea	HtL	MR2	HtL	The current line will be held in epoch 1. In epoch 2, Managed realignment by breach of the existing defence while continuing flood defence to the dwellings, roads and sewage works. The currently undefended sections will remain undefended.
E3	West Mersea	HtL+	HtL+	HtL+	The current line will be held throughout all epochs. The currently undefended sections will remain undefended. The standard of protection will be maintained or upgraded.
E4a	North Mersea (Strood Channel)	HtL+	MR2+	HtL+	The current line will be held in epoch 1. In epoch 2, Managed realignment by breach of the existing defence while continuing flood defence to the dwellings and roads. The standard of protection will be maintained or upgraded.
E4b	Pyefleet Inner Channel	HtL	HtL	HtL	The current line will be held throughout all epochs.

Key:
HtL – Hold the Line
MR1 – Managed Realignment - Allow local and limited intervention
MR2 – Managed Realignment - Breach of frontline defence after building landward defence
NAI – No Active Intervention
Where a "+" is added to the policy label, this means that the Standard of protection will be maintained or upgraded

It can be seen that in the map below there will be no intervention on Coastal Defences.

1. Coast Road from the Nothe just north west of The Lane round to Beach Road
2. From the Decoy Pond at Waldegraves Caravan site eastward to Essex Outdoors
3. All the cliffs and embankments around Cudmore Grove Country Park

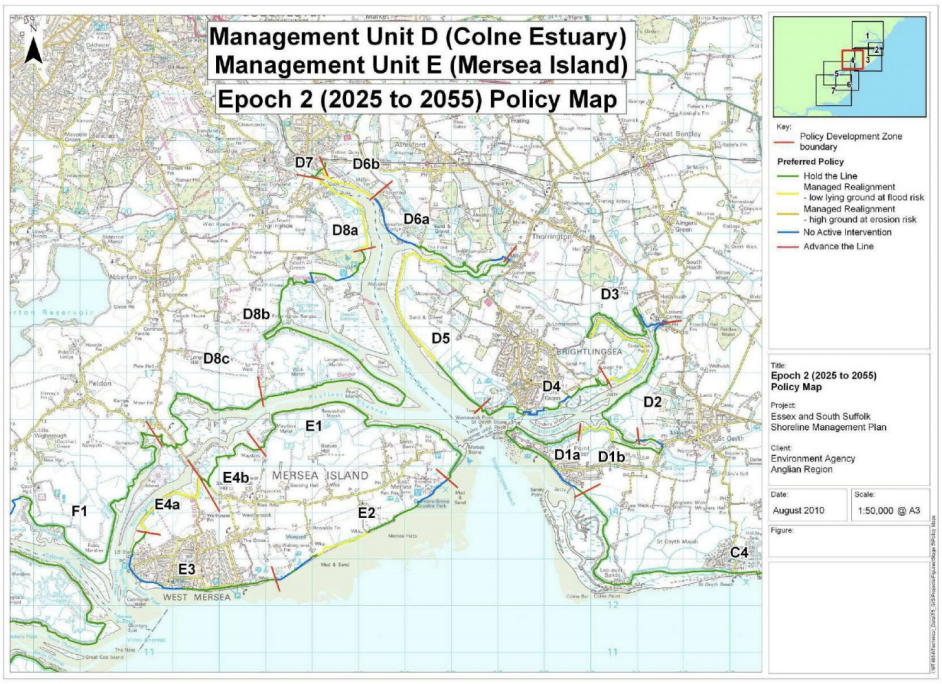
Figure 4-14 Management Unit D, epoch 1



It can be seen that in the map below there will be no intervention on Coastal Defences.

4. Managed realignment between Essex Outdoors eastward to Copers Caravan site.
5. Managed realignment from Firs Chase Caravan site north-Eastward to B1025 road onto West Mersea

Figure 4-15 Management Unit D, epoch 2



4.6 Management Unit E – Mersea Island

Summary of the Plan:

Recommendations and Justification The overall intent of management for Mersea Island is to sustain and support the viability of communities, tourism and commercial activities especially the important shell fisheries in the area, while creating new intertidal habitats and focusing flood and erosion risk management on frontages where it is most needed. The policy to achieve this intent is to maintain flood and erosion defence to all dwellings, key infrastructure and tourism facilities at risk of flooding and erosion, combined with a gradual increase of natural processes by realigning defences that are under pressure. The frontages where the existing flood and erosion defences will continue to beheld at their current alignment are West Mersea, Pyefleet Channel and parts of the sea facing frontage between West and East Mersea However, at East Mersea seaward frontage and landward of the Strood Channel(PDZs E2 and E4a) the defences are under pressure, and a landward realignment would create a more sustainable situation by reducing the pressureon defences and moving towards a more natural coast with increase of tidal prism and intertidal area. All dwellings and infrastructure would remain protected, which will require moving some of the defences to a more sustainable sheltered position, possibly in the form of counter walls. There alignments will come at the expense of Grade 3 and 4 agricultural land. They will affect freshwater habitats(non-designated), but they will also create new intertidal habitats. They will have significant impact on heritage assets. There are footpaths on top of all the sea banks to be breached; these will need to be sustained, for example through re-routing. The impact of the potential realignments on tourism and recreation(including sailing and the youth camp) and on oyster fisheries is difficult to quantify, and realignments can have both positive and negative impacts. These impacts will be taken into account during project appraisal and scheme development, which will be carried out with full stakeholder involvement before any works start, similar to the approach taken at the Abbotts Hall farm realignment on Salcott Creek in 2002.Realignment is proposed for the seaward frontage between North Barn and West Mersea (PDZ E2) and North Mersea (Strood Channel) (PDZ E4a) in epoch 2.For West Mersea (E3) and North Mersea (E4), the SMP's broad scale economic analysis supports an intent to maintain or upgrade the standard of protection, including taking into account impacts of climate change. For all the other defended frontages,detailed analysis beyond the SMP is needed to determine the appropriate standard of protection. In PDZ E1(Mersea's Landward frontage)

Essex and South Suffolk SMP2 Final version 2.4 - 161 - 15 October 2010 there is a need for a counter wall to separate the Cudmore Grove section as the flood cell is considered to be significant. The current No Active Intervention approach will be continued for sections of West Mersea (landwards of Cobmarsh Island, (PDZ E3) and for the SSSI cliffs at Cudmore Grove East Mersea (PDZ E2).The Action Plan highlights the need to identify opportunities for the beneficial use of dredging within the SMP project area. Cobmarsh Island has been identified as a site for inclusion in any future study to identify good receptor sites.

SOME PHOTOS TAKEN ON 14TH SEPTEMBER 2020 Covering this area on the south of the Island

These show the perilous state of the seawall just to the east of the site up to Coopers Caravan site. It also indicates the power of the sea and shows that earth bunding is no defence against flooding and inundation by sea water.

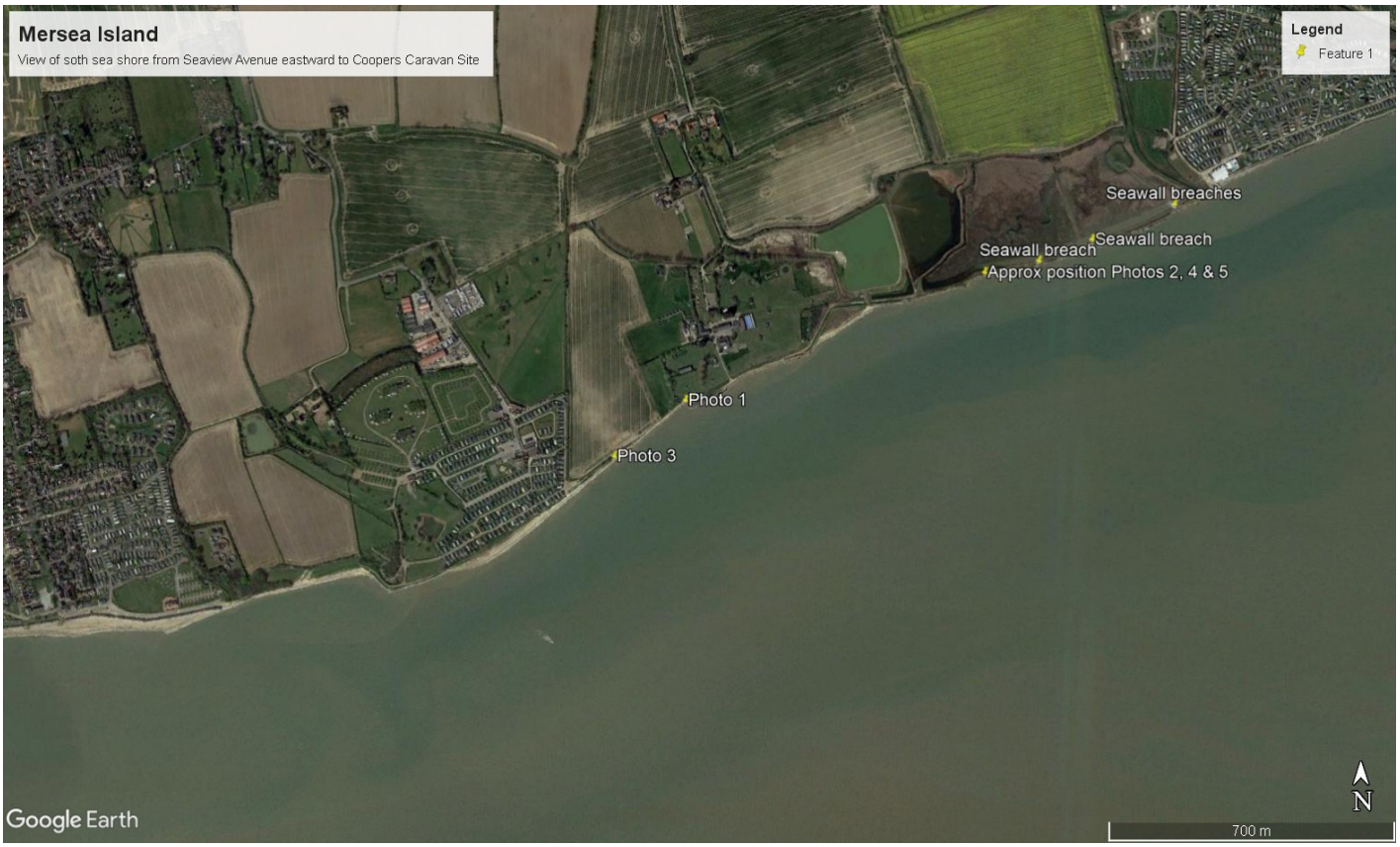
Just a the start of the Youth Camp - Mersea Outdoors Photo1

Beyond Mersea Outdoors towards Coopers Caravan Park Photo 2

Waldegraves to Mersea Outdoors Photo 3

Beyond Mersea Outdoors towards Coopers Caravan Park Photo 4

Towards the Coopers Caravan Park Photo 5



The Google Earth picture above dated 9th May 2020 shows the Breaches in the Seawall with water flowing through these breaches onto the low lying land behind.

Mersea Harbour Protection Trust.

Mersea Harbour is under serious threat from erosion by storm wave action. A combination of rising sea levels, global warming and changing weather patterns has already reduced the protection from the off-lying islands of Cobmarsh and Packing Marsh as well as Old Hall point. Within 20-30 years it could become unviable for moorings, oyster layings, wildlife habitat and many commercial and leisure marine activities. There will be severe loss of habitat for vulnerable birds including the rare Little Tern as well as many animal and plant species. The jetty is already dangerous in extreme conditions and could be lost within 10 – 20 years.
The answer is to re-inforce the seaward sides of Cobmarsh, Packing Marsh and Old Hall which have provided protection for the harbour and created the sheltered piece of water we all know and love by a "recharge" of suitable sand and shingle to build them up to a level above the highest storm waves. In the late 1990s the Environment Agency arranged to import a quantity of such material from dredging works in the approaches to Harwich Harbour. The exercise was a success and still provides a degree of protection although insufficient to provide long term security.
Local oysterman Alan Bird, who has worked on the water all his life, became very concerned about the future of the harbour and recognised the need for a new recharge to save our harbour for future generations. However since the Environment Agency can no longer fund such a project, it was clear that it must be undertaken as a community project. So he put a small group together to form The Mersea Harbour Protection Trust as a charity to arrange a new recharge, reinforcing the protecting islands and headland with around 1700,000 tons of suitable sand and gravel from a new planned dredging programme off Harwich Harbour.
An additional benefit of the recharge is that it will provide additional habitat for the rare Little Tern, which nest on increasingly scarce isolated shingle beaches

Before the recharge can go ahead, approval must be obtained from the Marine Management Organisation (MMO), Natural England (NE) and other bodies. This requires a detailed Environmental Impact Assessment with surveys of topography, birdlife, marine life, invertebrates, tides etc . With assistance from specialist consultants, the RSPB and Essex Wildlife Trust, this work is now (March 2016) nearly complete so that we should shortly be in a position to submit the formal applications to MMO and others. It will have cost nearly £70,000 in fees and expenses to get this far.

This sum has been raised by contributions from members of the trust, local charities including Essex Communities Foundation's Minter Family and Acorn Funds, Essex County Council Community Initiatives Fund, Colchester Borough Council, and Environment Agency. West Mersea Town Council has pledged up to £1800 if required. We have also received valuable support and practical assistance from RSPB and Essex Wildlife Trust. The trustees and other volunteers have given their time for free.

Once we have the required approvals, we can negotiate with Harwich Harbour Authority (HHA) for the supply and delivery of the recharge material which would involve chartering a special dredger able to access the shallow water and precisely distribute the material into position by a "Rainbow" water jet.

We are expecting to have to pay Harwich up to £300,000 so have made application to various bodies for grants to fund those costs and ongoing costs of maintenance and monitoring.

The timing of the recharge is entirely dependent on HHA's own dredge programme, which is expected to start late 2017. If all goes according to plan this recharge should provide protection for our harbour for at least the next 70 to 100 years, ensuring the fishing, oystering, sailing, crabbing, birdwatching and enjoyment of the waterside will continue for our children, their children and generations to come.

For more information, see our website www.savemerseaharbour.org

Mersea Harbour is under threat from the erosion by storm wave action of Cobmarsh, Packing Marsh and Old Hall. If these natural saltmarsh wavebreaks disappear, the harbour will be exposed and eventually become unviable for moorings, oyster layings and many commercial and leisure marine activities.

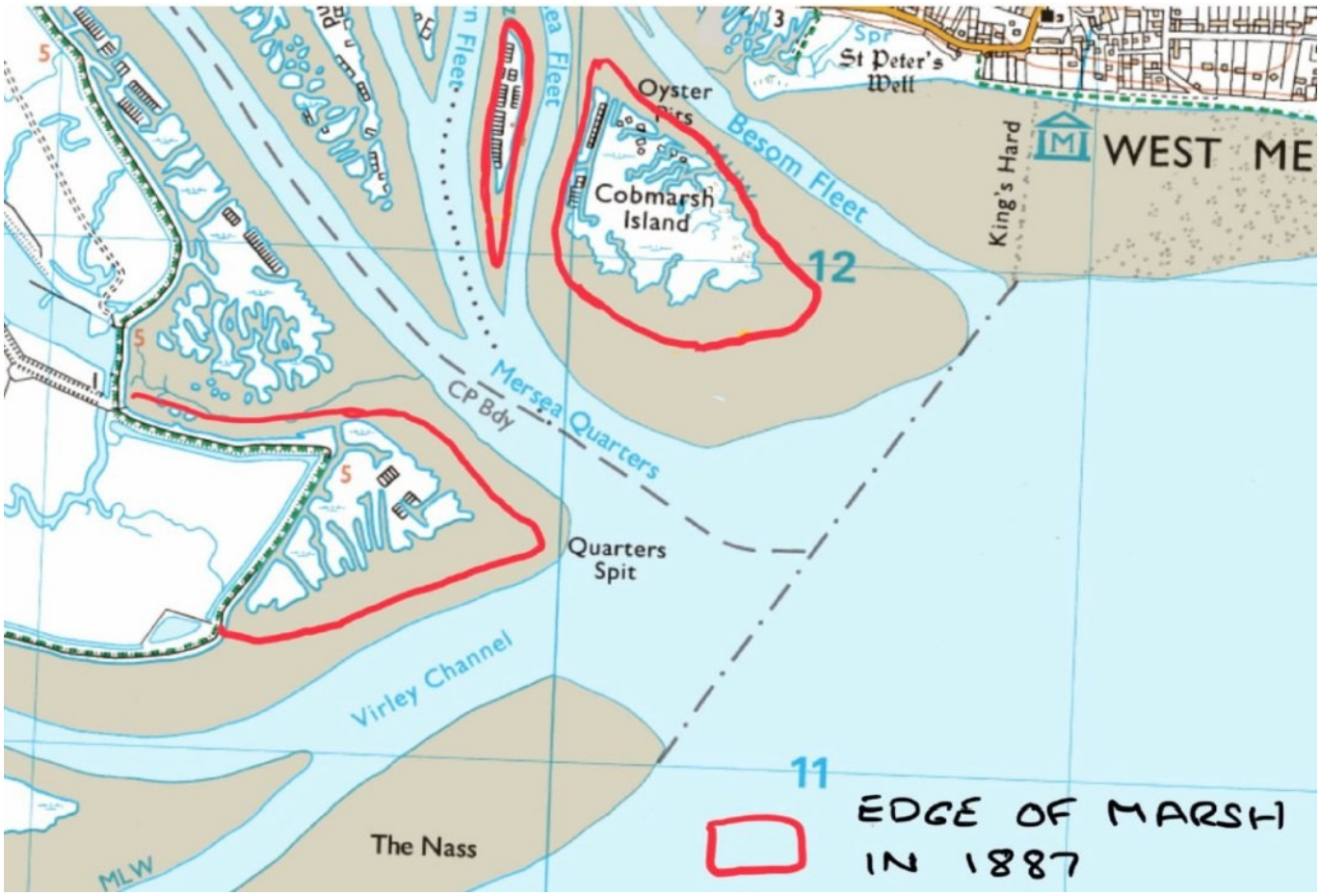
There will be severe loss of habitat for vulnerable birds including the rare Little Tern as well as many animal and plant species. The harbour could disappear within the next 20-30 years. The jetty itself could be lost within 10 years!

LATEST NEWS

Mersea Harbour is in need of protection from natural wave erosion. The islands protecting the harbour have halved in size in the last 100 years. Larger waves now wash away the land faster, erosion is accelerating.

Without action, the jetty/causeway could be unsafe to use by 2030. Without action, there is a real risk that Mersea Harbour and many wildlife habitats will cease to exist within 70 years. ***We have permissions to place/recharge sands and gravel on key headlands to slow down erosion. Action is planned to start in Autumn 2021 and finish over the winter.***

Map indicating Edge of Marsh in 1887

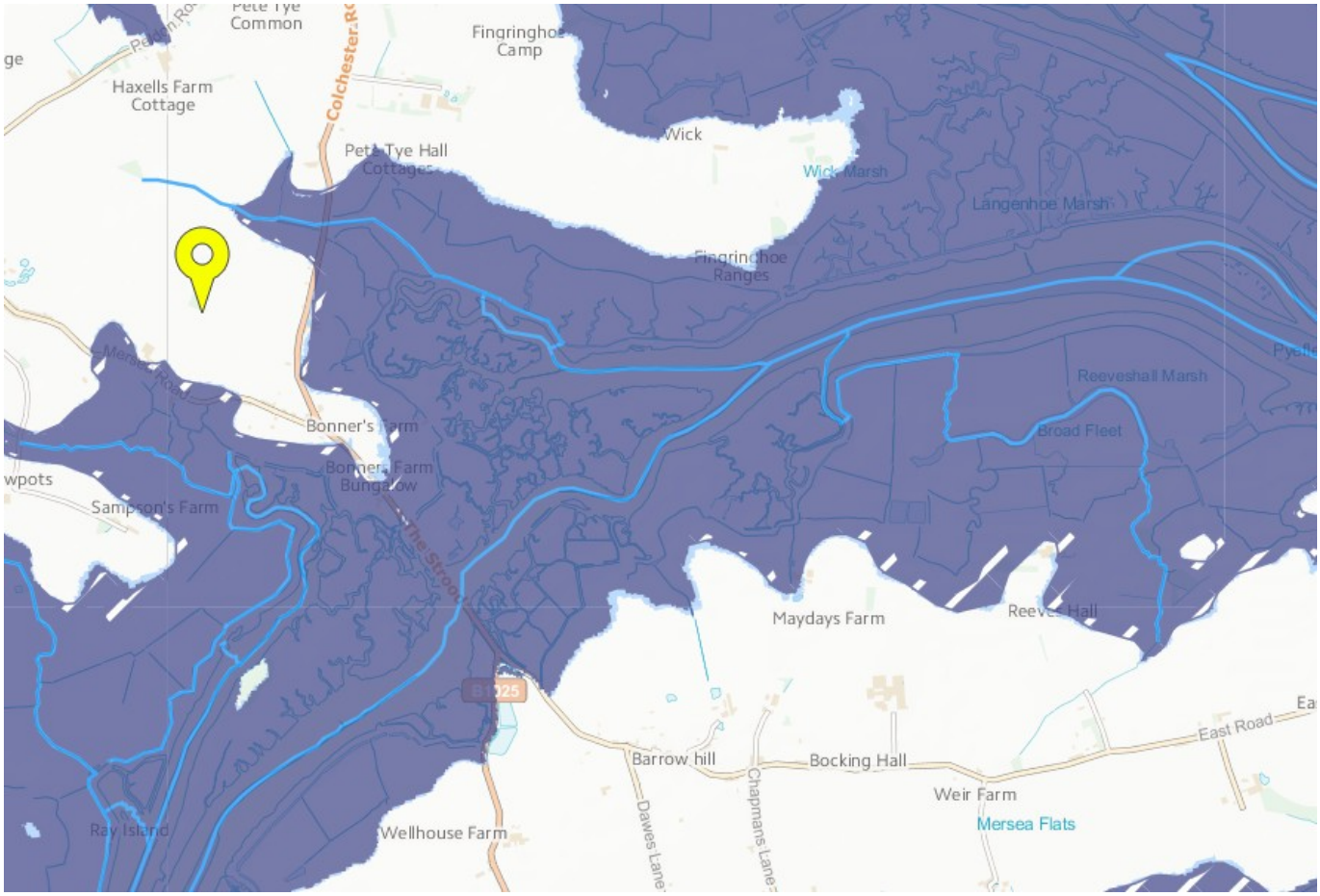


MATTER 3

Appendix ISSUE 9 - Storm Surges associated with Sea Level Rise

Flood Map Environment Agency Zone 3 Flood area covering Mersea Island and surrounding area

This map shows the 5m Flood zone if sea wall beached on B1025 & Mersea Road Peldon areas



This Map of the West Mersea end of Island showing areas of flooding at 5m flood level. Hatched blue/white areas are benefiting from flood zones.