

THE VILLAGE FALLING INTO THE SEA

Happisburgh, North Norfolk

Sept 2020 Draft



Image 1 Happisburgh Web Site

"Once destroyed, nature's beauty cannot be re-purchased" – Ansel Adams

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Preface

Every other year, along with the same group of friends, I walk the North Norfolk Coastal Path which covers about 90 miles of coastline from Hunstanton in the west to Happisburgh and beyond in the east. The scenery ranges from cliffs through wild salt marshes, bird sanctuaries, stunning beaches and great pubs in the small towns and villages along the route.

What is obvious to us all is that every year, large chunks of the coastline collapse into the sea – in fact two stretches have eroded by 20-30 metres in the last 3 years. The erosion is relentless.

My curiosity and affinity with this coast led me to study this rugged yet highly vulnerable part of the UK and particularly Happisburgh but photographing the area has its challenges of recording both the environmental and personal tragedy that continues unabated.

It has been a privilege to meet a number of residents who are directly involved in fighting to create awareness and those directly affected by the erosion, getting an insight into their concerns about how the precariousness of Happisburgh has affected their future plans. It has also been a challenge to photograph the area with the dangers of cliff falls being ever present.



Image 2 The North Norfolk Coastal Path and way marker at Happisburgh – now redirected inland

Introduction

Coastal erosion is a world-wide phenomenon and climate change with its increased extreme weather patterns and higher sea levels is only exacerbating the problem.

The UK is no exception and many coastal towns and villages are under serious threat, non-more so than Happisburgh (pop 1400) in North Norfolk which is considered to be the "most at risk" area of the UK.

The estimated rate of erosion for Happisburgh from the position in 2019 is a further 97m in up to 20 years and up to 150m in up to 50 years. This is in addition to the dramatic loss of cliff face of over 200m in the last 20 years and represents a genuinely catastrophic scenario for the community as little is being done to protect its future. Severe storms like those experienced in 1996, 2007 and 2013 will undoubtedly accelerate the erosion beyond current estimates.

The Happisburgh inhabitants in danger of losing their properties can apply for a grant of £6,000 to cover the cost of demolition. If they apply, there is no guarantee of help as the "pot" for the whole country is only £60,000! (Source: Nick Hardiman, Chair Institute of Civil Engineers Financial Times Aug 2020). However, if they *"allow"* their properties to fall on to the beach, they are fully responsible for the cleaning up costs which can be much more than the value of the grant.

Robert Nicholls, Director of the Tyndall Centre for Climate Change Research is clear that there are areas of the UK deemed worth protecting and those considered "losers". *"Right now, we abandon people"* (Financial Times Aug 2020). Happisburgh falls into the category of losers.

National and local government help is not forthcoming which is leaving the Happisburgh community at the inevitable risk of losing many more homes and livelihoods without any form of compensation unless a solution is found to buy time to allow the community to adapt to the inevitable.

Government guidelines for investment in flood and sea defences are based on a vague cost/benefit analysis (Appendix 1) and currently the calculation is a ratio of 1:8 (although it is thought that this is nearer 1:10). Regardless, even if satisfactory protection could be implemented for £15-20m the benefit would need to be over £120m which is out of the question.

The reasons for the cliff erosion at Happisburgh

1. The sea defences protecting Happisburgh were neglected for over 50 years and have subsequently fallen into complete disrepair.

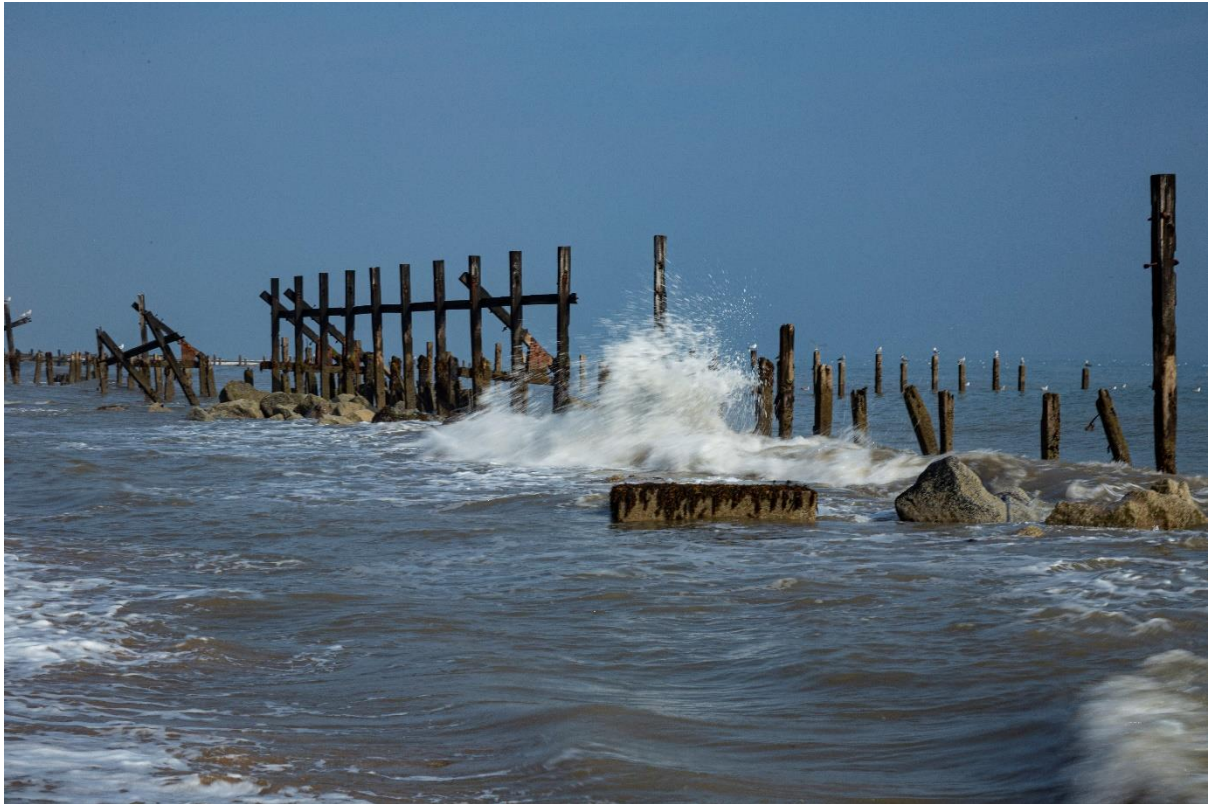


Image 3 Happisburgh - Neglected revetments Alan D Horn Aug 2020



Image 4 Happisburgh Remains of lifeboat ramp and a mile of destroyed defences Alan D Horn Feb 2020

2. The cliffs are made up of soft sediment making them highly vulnerable to water seepage, storms and the higher sea levels caused by global warming.



Image 5 Happisburgh- continuous crumbling cliffs Alan D Horn Aug 2020

3. A large area of the sea front (6.1 hectares) is a Site of Special Scientific Interest (SSSI). Significant findings have been made here including remains of prehistoric flora and fauna including mammoth bones and tusks but more importantly, after the 2013 storms, an area of the cliffs was washed away to reveal imprints of the earliest human footprints outside Africa estimated to be 800,000 years old.



Image 6 Natural England Prehistoric footprints

Natural England comments – " *These cliffs are unique as they display three glacial deposits, from the 1.9 million-year-old Pre-Pastonian Stage to the Beestonian and the Cromer Till of the Anglian stage 450,000 years ago, the most severe ice age of the Pleistocene*".

Because the cliffs are within the SSSI, they are virtually "*untouchable*" and the area covered by the site cannot be protected by any form of permanent solution.



Image 7 Crumbling cliffs within the unprotected SSSI zone Alan D Horn Drone Image Dec 2019

Happisburgh Today

Happisburgh is a village of 1400 inhabitants. In recent years, over thirty properties have already been sacrificed to the sea and many others will go the same way unless a solution is found to dramatically slow down the encroachment of the sea.

What makes matters worse is that there is no formal plan either nationally or locally to compensate people whose homes are at risk of destruction from the effects of coastal erosion.

People bought properties, the majority with mortgages, in the belief that the recommendation of the Shoreline Management Plan was to HOLD THE EXISTING LINE – therefore in the confidence that the coastline was securely defended. House prices continued to rise, *"sucking in people's life savings like leaves into a drain (Girling, R Sea Change Britain's Coastal Catastrophe p86)*

But the situation changed cruelly and dramatically when the Shoreline Management Plan was revised in 2004 –

" At Happisburgh the plan is not even for "managed realignment" "No active intervention" means exactly what it says – abandonment to the sea..... Happisburgh will surrender its soul" (Girling, R Sea Change Britain's Coastal Catastrophe p87)

The owner of the local Post Office, Ian Chaney is more impassioned- *"there are not enough chimneys here to interest the Government"*

Some protection has been put in place in the form of Rock Armour but this is limited due to the SSSI and regardless, it will not protect against serious storms.

The community see that the oil terminal at Bacton (just 5 miles from Happisburgh) has been protected by sandscaping and feel that a similar action could work for their community and here there is a small chink of light. Whilst the work at Bacton was funded mainly by the interested oil companies, it was supported by the North Norfolk District Council.

Can a similar scenario help Happisburgh?

The Government have recently approved an application by Swedish company Vattenfall to build the Vanguard wind farm off the Norfolk coast with landfall at Happisburgh. Could Vattenfall be a potential solution to fund the protection of Happisburgh in a similar way that Shell et al funded Bacton?

The story of Happisburgh needs not only to depict the phenomenon of the ongoing dramatic loss of land to the sea but must also highlight the existing threat to people's property, their wealth, livelihoods and mental state.

The Village



Image 8 Happisburgh Now and Then Alan D Horn Drone Image Dec 2019

Beach Road had almost 60 properties until 2013. Only 30 remain but clearly not for long unless something is done. St Mary's church was once 1 mile from the sea.

The People

"Knowing a great deal about what is in the world, art, catastrophe, the beauties of nature through photographic images, people are frequently disappointed, surprised, unmoved when they see the real thing..... Often something disturbs us more in photographed form than it does when we actually experience it. Susan Sontag (2011). "On Photography", p.146, Farrar, Straus and Giroux

When the main asset that you own is your house and you have been told that it is at great risk of falling into the sea in just a few years, rendering it almost valueless and there is no chance of any form of compensation, it is a dilemma that affects people in differing ways ranging from shock through sadness, hopelessness and resignation and the ability to capture the emotion in a photograph requires differing approaches.

A number of the Happisburgh community affected by the erosion have willingly spoken to me.

Bryony Nierop-Reading



Image 9 Bryony Alan D Horn Feb 2020

Bryony lives less than 100m from the cliff edge and is aware that her home has limited life and a maximum of 15 years-but much less if the severe storms of 2013 recur. She lives alone with her two cats and her vast collection of over 3000 books. She lost her last home, a bungalow, to the sea in 2013 when she awoke to find her cats staring through the floorboards of her kitchen at the remains of the rear of the property that had fallen 30m on to the beach as the cliff gave way. She says that she has only recently come to terms with the trauma that the experience caused but a recent cliff fall close to her current home is a real worry. Her property has little value due to its precarious position but it is her only asset apart from an old camper van that she says is where she will have to live if she has to leave. She is angry that just 5 miles up the coast, the village of Bacton has been protected by sandscaping the beach to protect the gas terminal and as an added benefit, the village itself. This has mainly been paid for by Shell although the North Norfolk District Council has contributed. *"If Bacton can be protected then why not Happisburgh?"*

Nichola Bayless



Image 10 Nichola Alan D Horn Aug 2020

Nichola lives next door to Bryony with her two children. Like Bryony, she is aware that her home is very vulnerable as the cliff edge gets nearer. She says that the house used to belong to her parents before they died and she has long, fond memories of living there.

She was originally within the first phase of compensation (Phase A) but was downgraded to Phase B which was then withdrawn. Finding the situation nerve racking, she is under no illusion that she will lose the house without any compensation.

Having recently lost both her parents and her husband within a few years of each other the insurance received after their deaths was bittersweet as she has bought a small property close to the lighthouse and away from the "danger zone" which will provide income through rental until she has to move there.

She confides that two sets of neighbours have divorced over recent years due to the stress of finding their only asset had collapsed in value and their ability to move dramatically restricted.

"I have to keep cheerful for the sake of my children, so I laugh a lot – otherwise I would cry"

Clive Stockton



Image 11 Clive Alan D Horn Aug 2020

Clive is the landlord of the famous Grade II listed Hill House Inn, now under threat. The inn dates back to 1540 and has been a pub for over 350 years. He bought the pub in 1991 at full market value on the understanding that the coastline was protected and under the impression from the existing policy that the area was secure for over 300 years. The change in the Shoreline Management Policy in 2004 meant that everything he has is at risk and the current rate of erosion means that he won't have anything to pass on to his family who also work in the pub.

Until two years ago, the field below the pub was a thriving holiday caravan park but more than 50m of cliff has disappeared in recent years and whilst the caravan site has been relocated further inland, Hill House obviously cannot be relocated and is now at risk.

Clive is the chairman of North Norfolk District Council and is fully aware of the limited help that is available from central Government. He believes that extending rock armour and sandscaping around Happisburgh would have a dramatic effect on slowing the march of erosion but funding is simply not there.

"Happisburgh is not essential to the UK economy and therefore of no consequence"....."Government reports all say that something must be done – but action is never forthcoming"

Sue Stockton



Image 12 Sue Alan D Horn Feb 2019

Sue is the landlady of Hill House and married to Clive. She shares Clive's opinions and is vociferous about the fact that this small village has 17 listed buildings and there seems that little will be done to protect the majority of them.

"In this small area around Hill House are located St. Mary's Church which is Grade I and Denise and Stephen Burke's Thrums as well as us (both Grade II) and all three are under threat".

"The Dutch protect their communities but we don't. I can't understand why."

Denise Burke



Image 13 Denise Alan D Horn Aug 2020

Denise has been a parish councilor on Happisburgh for several years and lives with husband Stephen in the charming in Grade II listed cottage, "Thrums". When she and husband Stephen bought their C18 brick and flint cottage in 2010 the erosion was not a major issue. She felt that It was going at a slow, steady rate and that it was so far from the sea, the erosion would not affect it for 100 years. However, the storm of 2013 caused massive cliff falls and the erosion accelerated. The house is now just 200m from the cliff edge.

She feels that as landscaping has been successful in Bacton there is no reason why it cannot be used to stem the rate of erosion in Happisburgh.

She is aware that Natural England may object to protecting the cliffs within the SSSI but is frustrated that no one seems to be leading any discussion on the subject.

"Because of the SSSI we cannot have hard defenses but surely we can have sandscaping?"

Stephen Burke



Image 14 Stephen Alan D Horn Aug 2020

Stephen is the Chairman of the Friends of Happisburgh Lighthouse, the UK's only independently run lighthouse. Built in 1791 it was saved as a working light by the local community, and is maintained and operated entirely by voluntary contributions.

He believes that the community should do all it can to develop a strong relationship with Vattenfall, a Dutch company that has been granted permission to build and maintain an offshore wind farm that will be stationed on land within the Happisburgh boundary. He believes that it is a real potential benefit to the village (and the environment) and can't see why Vattenfall cannot be persuaded to pay for or contribute to landscaping along the Happisburgh beach in the same way that Shell has made the greater contribution towards the protection at Bacton especially as the cables will reach land beneath the Happisburgh beach. *"If North Norfolk District Council were happy to contribute to the Bacton initiative, then why not Happisburgh?"*

Sue Hayward



Image 15 Sue Alan D Horn Aug 2020

Sue and husband Rob's bungalow, "Seashell" is now only 30m from the cliff edge. They bought the property in 1979 when it was over 100m from the cliff edge. Erosion over the last 40 years has left the property valueless and due for demolition before it falls on to the beach.

Seashell was due for demolition earlier in 2020 but the recent apparent slower rate of erosion has given them a temporary reprieve. They are both fully aware that demolition has to take place before the property surrenders to the sea, otherwise they would be liable for the clearing up costs should it collapse on to the beach.

Sue is very stoic and will not panic despite the fact that once the property is demolished, there is no compensation available to them. They feel that the longshore drift caused by the Bacton sandscaping project has slowed down the erosion at Happisburgh and the need to organize demolition is on hold.

" The Rock Armour needs to be improved and with sandscaping all could be saved but no one is doing anything"

Meanwhile, Seashell sits precariously close to the edge.



Image 16 "Seashell" Alan D Horn Drone Image Dec 2019

Malcom Kerby

In 2009, Malcolm was the main driver in highlighting the plight of Happisburgh to the authorities and obtaining a portion of the Pathfinder fund totalling £3m that that allowed those at risk from losing their properties to move before their homes were swallowed by the sea.

The funds were also used to create a new car park, toilet block, playground and a new access to the beach. The car park also continues to provide vital income to the community.

Malcolm is clear that there is no more support for communities like Happisburgh and that those at increasing risk have no hope of compensation.



Image 17 Malcolm Alan D Horn Aug 2020

He is scathing of government and believes that whilst there are 16.9m people in the "UK coastal zone", the Government is trying to convince people that it is doing more to help when in fact it is doing less.

" When we won the Pathfinder money, the Government Cost/Benefit calculation was 1:1 but it is now 8:1 (and probably nearer 10:1) which means that the residents of Happisburgh are now left high and dry without any hope of financial help"

"The coast is eroding faster than the Government can think yet coastal erosion accounts for only 9% of the flood and coastal protection budget"

The Destruction

Edward Burtynsky (b.1955) sums up the dichotomy of depicting images of damage and disaster in a photogenic manner *"On one hand, we're attracted to the image. The aesthetics are equivalent to the desire we feel, the beauty we long for, yet once we come to terms with the fact of its subject matter, the content then puts us into a state of realization"..... 'What's that telling me?' It is hard to feel good about what you are seeing because you know this is disaster. It's tragic"* (Ewing, William A 2018 *Essential Elements* p134)

The speed of erosion of the cliffs at Happisburgh is exponential. 100 years ago, the Church of St Mary was 1 mile from the sea but now it is no more than 200m from the cliff edge which is expected to reach the graveyard within a maximum of 50 years.



Image 18 St Mary and the encroaching sea, Happisburgh Alan D Horn Drone Image Dec 2019

Similarly, Happisburgh's iconic lighthouse which opened in 1790 and a linchpin of the village community that raised £20,000 in 2018 to maintain and paint it, will also succumb to the sea within the same time period as St Mary's.



Image 19 Happisburgh Lighthouse Alan D Horn Aug 2020

The acceleration of the erosion in the last 15 years is clearly demonstrated from the aerial images of Mike Page (www.mikepage.com) who has kindly allowed me to reproduce his work.



Image 20 Progressive Erosion at Happisburgh Copyright Mike Page

From 1996 to 2012, just 16 years, two rows of houses have been lost and the sea defenses have virtually disappeared.

Fast forward to 2019, and it is clear that encroachment continues. The caravan park has been relocated inland (above lighthouse) and all that remains of the old site (below church) are abandoned caravans.



Image 21 Happisburgh 2019 Copyright Mike Page

Beach Road gets ever closer to the cliff edge. Today, many of the remaining properties are clearly at risk



Image 22 Hoppisburgh remains of Beach Road Alan D Horn Drone Image Dec 2019

Government Policy

The Government's Shoreline Management Plan comments that it would not be appropriate to defend Hoppisburgh due to the impact this would have on the shoreline as a whole, as the coastal retreat on either side would result in the development of a promontory (headland) therefore making it impact significantly upon the sediment transport to down drift areas (longshore drift). Although there are implications, such as loss of residential properties and amenities at Hoppisburgh, these are not sufficient to economically justify building new defences. The existing rock armour will continue to have a limited effect on the rate of retreat in the short term (5-10 years) but will not prevent cliff erosion.

The Environment Agency acknowledges that it will not be possible to protect all areas that currently have sea defences and cannot guarantee future investment in protection. Those communities like Hoppisburgh with limited defences must recognise that whatever they do to protect their selves can only be seen as a stop gap and North Norfolk District Council's *Introduction to Coastal Management, 2018* is clear that there are currently no sources of funds to assist communities to adapt to climate change although such schemes are vital .

Rob Duck, Emeritus Professor of Environment Geoscience at Dundee University sums up the dilemma – *"You can't beat the power of the sea. You can only arrest it temporarily"*.

With these facts in mind the community of Happisburgh must look for solutions which all have a cost whether it is financial or personal, or both, and recognise that time is not on their side.

What can be done?

Buying time to allow *"adaption"* is the only viable solution for Happisburgh. Adaption in Happisburgh was started through the 2009 Pathfinder fund which supported the re-siting of the caravan park that was literally falling into the sea as well as supporting those in Beach Road whose houses were to be demolished. However, there is little hope that further adaption can be achieved without financial support.

It is unlikely that this will come from Government where its lack of meaningful strategy for *Coastal Communities at Risk* was highlighted by the Commons Select Committee in November 2019. It concluded that *"The Government should explain how the repeated cycle of cuts to funding to below sustainable levels, which were then reversed only after major flood events, will be ended and prevented from re-occurring. It should also explain how it intends to fund adaptation to coastal changes and sea-level rise."*

So, what are the options?

It is generally considered that a combination of rock armour and sandscaping is a viable solution that could buy the time that Happisburgh needs to adapt.

Sandscaping has been successfully implemented just 5 miles from Happisburgh.

The process involved *"vacuuming"* sediment from the sea bed and piping it on to the beaches at Bacton and Walcott to protect the gas terminal. The project saw 1.8m cubic metres of sand deposited at a height of up to 7m thus creating a shelf.

It has a number of benefits, notably that it uses natural resources and by reducing the sea bed to extract the sand and sediment, it reduces pressure on erosion and other defences. It does not impair the natural downdrift of sediment and therefore poses no threat to areas further down the coast. Its downsides are that it is seen as expensive and that its use is new to the UK and therefore the outcome could be unpredictable.

The life expectancy of the scheme is circa 20 years – which is coincidentally, the life expectancy of the terminal.

The official statement claims that *The Bacton to Walcott Sandscaping Scheme* has been delivered to protect Bacton Gas Terminal which supplies up to one third of the UK gas supply and protect homes and businesses at Bacton and Walcott from erosion and flooding.

The protection of properties is a secondary issue and according to the chair of Walcott Parish Council, Pauline Porter, the two villages do not qualify for any intervention on the government's cost benefit analysis – *"If the terminal wasn't here, the sandscaping wouldn't be happening"*.

The cost was £19m, paid for by Shell and Total with a £5m contribution from North Norfolk County Council.

The cost to replenish the beach area of Happisburgh is circa £6500/metre meaning that it would be similar to Bacton-Walcott.



Image 23 Sandscaping at Bacton Beach Alan D Horn Feb 2020

Rock Armour dissipates wave energy and can be used on beaches and in front of sea walls. It is not designed to stop the waves but to release the energy and also contribute to protecting the cliffs. Rock Armour is used extensively along the Happisburgh cliffs but the cost is inhibitive at circa £1600/m. and the total cost to could be in the region of £4m to cover the area of SSSI and further improve the existing reinforcements.



Image 24 Rock Armour clearly dissipating wave strength at Happisburgh Alan D Horn Aug 2020

What next?

Like many other coastal communities in the UK, Happisburgh's future is at the mercy of the elements with little chance of any intervention by government to either protect or compensate for the seemingly unavoidable loss of land and properties to the sea.

Time is not on Happisburgh's side and with the inevitability of higher sea levels and storm surges that have been increasingly experienced in recent years, the danger to the remaining properties in Beach Road and beyond is obvious, with little or no chance of any financial help to those affected.

Furthermore, in the light of the unimaginable cost of COVID-19 to the UK economy it is not unreasonable to conclude that some smaller communities will be abandoned to the sea and what it means to a small, yet historical community like Happisburgh is that it must plan to identify properties that will be destroyed and adapt its future development to meet the scenario.

Adaption is the only realistic solution to provide the community the option to move to a safer location and the UK Government have made it clear that this is the preferred option for communities like Happisburgh. However, that is as far as the recommendation goes. Financial support is not forthcoming so buying time is essential.

This can be achieved through protecting the cliffs and beach areas with landscaping and increased rock armour and whilst it could buy as much as 20 years grace, it will not affect the SSSI and its geological and physiological value to our history. The simple issue is cost. The realistic estimate to provide the necessary protection is circa £15m which does not seem a great deal when the overall length of beach and cliff protection is less than 1 mile but Government benefit/cost ratio requirements mean that funding from either central or national government sources is out of the question. Other sources are the only solution.

The government has recently reported that the HS2 project implementation cost has escalated from an originally estimated £56bn to £106bn. The seemingly exponential increase in costs for little benefit to any community is ploughing ahead, driving a rail line that is destined to disrupt or damage people's lives for the sake of saving 30 minutes on a journey between London and Birmingham. The cost per mile calculation has also revised, exponentially to £315m and yet just 4-5% of this figure could buy Happisburgh (and other similar communities at risk) up to 20 years grace to adapt. It does not make sense. We are seeing how business is adapting to the COVID 19 pandemic through increased use of innovative digital communication which must illustrate the fact that we will travel less for business and that the immense costs of this "glamour" project should be redirected – but this is not the case.

A chink of light is the Vattenfall windfarm landfall which will reach land from below Happisburgh beach. At the moment the company have stated that there are no plans to compensate the community. It is also the case that the parish council has been divided over its approach to the company but a deal similar to that achieved in Bacton which was in part funded by the North Norfolk District Council and circumvents the vague government benefit-cost ratio has to be examined.

Surely it is the only option and must be worth examining as a priority?



Image 25 The road to nowhere Happisburgh Alan D Horn Nov 2019

Appendix

Government Benefit-Cost Ratio for Flood and Erosion Calculation

The latest DEFRA paper on *Flood and Coastal Erosion Risk Management*, dated April 2020 includes a clear statement -

There are usually several do-something options to consider in a Flood Coastal Erosion Management (FCERM) project. You must assess each option on the:

- average benefit-cost ratio (ABCR)
- overall economic efficiency
- incremental benefit-cost ratio (IBCR) - that is, the value generated by moving to a more costly option

Projects are unlikely to succeed unless both the ABCR and the IBCR are significantly greater than unity (*which means at least 8:1*). Unity in this case means a ratio of 1:1. Options with a high ABCR will not usually succeed unless the IBCR is also positive.

ABCR and IBCR are important to understanding the economic value of options. However, the decision process includes other criteria to help you select an overall preferred option:

- affordability, including the impact of contributions
- the effect of uncertainty and the need for adaptable options
- the achievement of wider objectives and non-monetised benefits

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