

PRESENT:

North Ward:

Councillor J Herron

East Ward:

Councillor J Craigie (Chairman)

Councillor Mrs R Craigie

Councillor Mrs L Hellyer

Councillor J McKenzie

IN ATTENDANCE:

Councillor P Christie (Mayor)

Councillor D Bushby

Councillor Mrs J Gubb

Councillor Mrs S Langford

Councillor C Hawkins

Mr R Coombes (Deputy Town Clerk)

Mrs L Dixon-Chatfield (Town Clerk's Assistant)

Councillor P Hames, Northam Town Council

Councillor C Hodson, Northam Town Council

Professor K Spencer, Queen Mary University London

Dr T Poate, Coastal Marine Applied Research Plymouth

Professor Gerd Masselink, University of Plymouth

Mr J Puddy, Bideford Chamber of Commerce

Mr A Redwood, TDC

Mr C Wilson, TDC

4 x Members of the Public

64. APOLOGIES FOR ABSENCE

No apologies were received.

65. DECLARATIONS OF INTEREST ON ITEMS ON THE AGENDA

There were no Declarations of Interest.

66. PUBLIC PARTICIPATION PERIOD

There was no member participation.

67. MINUTES

The Minutes of the Meeting held on 22 September 2020 were approved and signed as a correct record.

(Vote – For: 5, Against: 0)

68. BIDEFORD THREAT FROM NORTHAM BURROWS LANDFILL

a. Summary of present situation.

The Chairman explained the format and different aspects of the Meeting:

- Starting with his research-based presentation.
- Invitation to the other agencies / authorities to provide their knowledge,
- Consider additional information to assess the danger and research options with a presentation from Professor K Spencer.
- Go on to look at mitigations and adaptations on what the Town Council can do and that of other local authorities can do on our behalf forms and where we go from here.
- Whether the Emergency Committee can consider an emergency response that Bideford might have to take in the face of and of the identified threats.

He commenced by addressing the Northam Burrows Landfill Site. In describing the Threat Assessment, he detailed the following subject headings and source reports:

- Sea Level Rise (SLR) – involving Antarctic melt, including land (not just sea).
- o Kopp et al (2017), UKCP (18),
  - Coastal Erosion (Pebble Ridge, Northam Burrows and Estuary).
- o Pethick J (2007), Black & Veatch (2012), Natural England (compiled by Plymouth University) (2020)
- o Shoreline Management Plan (2010), Beach Management Plan (06)
  - Estuary Erosion
- o Pethick J (2007), Black & Veatch (2013)
  - Storm Surge
- o Kopp et al (2017)
  - Landfill Contaminants
- o Parsons Brinckerhoff (2009)

He described the Sea Level Rise (SLR) with projections showing in 30 to 40 years residential areas of Bideford are likely to be below high water at the same time that the landfill site is inundated with salt water.

Councillor McKenzie confirmed that the levels were at high tide. He felt that in reality the situation would be far worse.

Councillor Bushby spoke about the Climate Central Report, which he believed to be good, and wondered if the other authorities accepted it as legitimate.

The Chairman indicated that the Met Office would in probability revise its findings in line – not ruling it out, noting that their reports are somewhat behind the current scientific data.

By the end of the century he noted that everything between the River and the Tarka trail, needs some kind of coastal defence. Similarly, Victoria Park, Morrisons, surrounding houses up to the Kenwith Valley would be flooded, twice a day, unless there is a coastal defence.

He continued with Coastal (Pebble Ridge – north to south) and Estuary (River – east to west) Erosion. The Shoreline Management Plan that showed the expected movement of the Pebble Ridge, over time and recommended defences that would protect the housing of Westward Ho! and the Landfill Site.

He explained the Pebble Ridge Landward Retreat due to Atlantic storm activity pushing pebbles over the top of the ridge. He noted the abrasion by the waves causes pebble size to reduce making them more susceptible to longshore drift north.

He speculated that should the Pebble Ridge be lost much of the Golf Course would be lost, the beech would be pushed back but the Landfill would remain, assuming that there had not been a rise in sea levels. The Northam Burrows coast would align with the Braunton Burrows.

He referenced the recent Natural England Report (produced by the University of Plymouth) that confirmed other reports indicating that the height had changed in areas along the shoreline where the pebbles have moved from south to north.

He discussed the rate of the Pebble Ridge retreat partially dependent on speed of sea level rise, at one metre a year at the southern end against the northern end of Pebble Ridge where landward retreat is hampered by sand dune system. The rate of erosion is transitioning to “Dune System Erosion” of four metres a year. Again, without a change in sea level he suggested that it would be forty years before the Landfill was fully exposed.

The Chairman led onto the Estuary Erosion (mouth of the Torridge / Taw). A TDC report of 2013 had raised concerns. The Estuary mouth between Northam Burrows and the stretch of coast between Fairy and Crow Points is 300 m too narrow for the amount of water passing through tidal movement. He noted that there were three stages of threats, the most immediate, that had not been acted upon to provide for a defence in 2013 along the estuary, a lesser threat developing along the golf course and the pebble ridge (that was following a “model.”

The Chairman spoke about Storm Surges, the changes in air pressure over the sea and over the land / coastal area. Where the pressures are the same there will be an ordinary level of tide but if there is higher pressure over the sea the water rises higher. An extreme surge occurred in the sixteenth century where there was flooding and people did drown in Barnstaple. There are many storm surges that do occur, but they tend to be small and mild; they do need to be taken into account as the additional height of the water can be an issue. Referring to the Kopp report he quoted that Climate Change is likely to increase the intensity between the high and low pressures. He showed a slide that indicated even as early as 2030 a storm surge of magnitude expected annually, if it occurs at or near high tide will result in the landfill site and Bideford being flooded at the same time (the whole of Northam Burrows, Kenwith Valley and areas of East-the-Water being flooded).

The Chairman spoke about the contamination of the Northam Burrows Landfill Site including chemicals, heavy metals, leaching, ground water contamination, tests, anomalies with the tests, poor records (pre 1995).

He concluded that a storm surge occurring at or near high tide from 2030 onwards, inundating the landfill site will cause residues containing unsafe levels of Arsenic, Benzo(a)pyrene and possibly other harmful contaminants to move up the estuary to be deposited in residential areas of Bideford in the Kenwith Valley and along the water front at East-the-Water.

He highlighted that the report on Estuary erosion compiled for TDC (2013) noted the releasing of landfill material directly into the estuary recommended a sixty-metre coastal defence; this was not implemented.

Members discussed the potential increase in Storm Surge occurrences. Professor Masselink explained how rising sea levels do increase the probability reducing a one in two hundred probability to one in fifty years. He noted that the London Flood Barriers were designed for use once a year but are now being used tens of times a year.

The Chairman continued that in a reported one in one hundred years probability of events an event occurred three times in the last ten years. He noted that there were differing methods establishing probabilities.

Councillor Christie agreed that storm surges were more common, citing the Gulf of Mexico. He stated that the Pebble Ridge had been breached in 1946 and had on three occasions. He noted also the Kenwith Dam was expected to see flooding once in a hundred years and did, in its first year. He reiterated that the Environment Agency had downgraded the flood defences in Bideford built twelve years ago.

He felt also that the Tip would impact Saunton.

Councillor Bushby congratulated the Chairman on the very informed presentation.

He spoke about the vast quantity of rubbish in the Northam Burrows, 650,000 cubic metres that during the sixties, seventies and eighties saw commercial and clinical waste and cyanide vats dumped. He indicated the potential for a breach to send waste into the Bideford Bay and as far as Wales. Ultimately cost, which will be in the millions is the driver behind finding a robust solution. A DCC engineer in answer to a question put at a public meeting fifteen to twenty years ago, stated that if permission was granted by the Secretary of State to move the tip to a suitable and large enough site it would cost £100 million.

The Landfill protects the Northam Burrows. He questioned why there was no plan to defend it. The last time TDC did any meaningful work was in 2000 at a cost of £17,000. Only other monies spent on emergency work in the last five years (erosion on the Estuary side, when tip exposed). The decimation of the Pebble Ridge at almost sea-level has seen the erosion of the sand dunes and how the south west coastal path has been moved back five or six by ten metres but within a year it is lost.

He concluded that the stated aim of Natural England, in charge of the Site of Special Scientific Interest (SSSI), was to see the whole of the Northam Burrows in a "favourable condition;" the easiest and quickest way to establish this would be allow for the tide to inundate the 640 metre site, twice daily, to establish a salt marsh. The dilemma, he believed was that they would not be eager to support any defence of the Pebble Ridge.

b. Presentation from invited attendees.

The Chairman invited Professor Spencer to address the Meeting.

She noted the difficulty of assessing contamination levels in the reports as the "Protocols" are not fit for purpose. The consequences of releasing contaminants into a terrestrial environment are different to that of a marine environment but this is not being taken into account.

No monies will be forthcoming until there is evidence of significant risk and significant harm (prediction versus evidence).

She highlighted anomalies in the predictions of where the release of solid materials, assumed to be sediment, would travel, as a result of high-water levels / storm surge. The heterogeneous mix of wood, plastic, asbestos, old batteries behaves differently.

When making standard leach tests and matrix tests at landfill sites soil investigation is considered the British Standard of protocol. Yet everything from the landfill will be contaminated and will go further downstream to beaches and SSSIs.

Councillor McKenzie spoke about "harm," the loss of life, the impact on the North Devon area and borders of population; Appledore Shipyard, RMB Chivenor, Pottington Industrial Estate all would be under water. There would loss of jobs, impact on tourism the infrastructure, the main road into East the Water. He believed the impact cost would rise from millions to billions of pounds. Spending £200 million now would save monies / livelihoods in the longer term.

Councillor Hellyer congratulated the Chairman on his presentation. She confirmed that Natural England preferred a managed retreat and that TDC had responsibility for the coastal defence.

She suggested the Geoffrey Cox QC MP should be provided with the presentation, invited to view the area and entreaties made with Surfers Against Sewage who have a large social platform to help publicise the issues.

Professor Spencer indicated that the Sites do fall between current legislation. She repeated the need for proof of what harm would occur, where contamination would take place, predictions on the amount of waste and under what scenarios. She cited the cost in millions of New Zealand dollars to clear seventy miles of coastline that had been contaminated as a result of very high rainfall and flooding had taken out two landfill sites. She made reference to the 1995 legislation that required managers to keep records.

Councillor Bushby felt it was a good idea to engage Surfers against Sewage. He stated that he had taken Mr Cox QC MP on two occasions to the landfill and the sand dunes. Publicity was not new, the erosion issue had been on the BBC World Service, ITV and BBC local news.

The longer the situation is left the less time there will be to react. He believed that until there is a major disaster nothing will be done. He spoke of the millions of black refuse bags that are contained within the tip.

Councillor McKenzie favoured a more holistic view, rather than looking at issues such as “the Tip” in isolation. It needs to be viewed as a Tav / Torridge issue. The impact on North Devon will be a huge problem; Barnstaple will be in a worse position than Bideford.

Councillor Mrs Craigie highlighted the Marine life implications, with the heavy metals entering the food chain. She spoke of the fishing industry and also the Marine Conservation Area around Lundy and their interest.

Councillor Mrs Hellyer advised that DCC pay TDC to manage the landfill contents. Given the AONB status, she mentioned the Inshore Fisheries and Conservation Authorities, and indicated that there were other bodies that should be concerned.

Mr Redwood, TDC thanked the Chairman for a very interesting discussion and very helpful illustrations. While the data used up to 2018 was factual it was nowhere near as significant as the events that have happened in the last few years. There has been seen a movement of material from the southern end of the ridge, accretion occurring to the northern end of the ridge, in front of the golf course eighth green, and on the distal end of the Spit where there is significant material accreting into the Estuary.

The situation, he said, was so dynamic that there is change month on month, at times quite significant. There is erosion and loss of material at the Westward Ho! end, where the real weakness is, and where the issues will be in the years ahead with inundation from the southern end across to the landfill site. The landfill site is reasonably well protected at the moment in terms of locations and elevation relative to the rest of the beach.

Not unique to Torridge or North Devon, the problems are UK wide. The Coastal Special Interest Group are lobbying DEFRA and the Government for action at every level and our MP is involved in directly influencing discussion in Westminster about this (which has been supported by substantial work from Professor Spencer and her team and Southampton University and other interests including the Environment Agency). He said so much work was needed to be done on funding and finding solutions. No one knows exactly what we are dealing with – what is in the tip and the extent of tidal flushing and dilution activity. TDC are keen to work with partners; DCC are supporting and the Environment Agency are actively involved.

Professor Spencer reiterated that it was a National problem. The Environment Agency has funded a research project creating a Geographic Information Systems data base bringing together all of the sites that are flooding and eroding around the country. They already have a strong picture of those sites at high risk.

Flooding and the release of soluble contaminants is probably not what should be the prime concern, they have been leaching for decades. No one is looking at solid waste.

Ten sites have been identified on the English coastline by the Environment Agency that are already eroding but there is not enough evidence to pursue a national level investigation or provide for funding. There is a feeling that nothing will happen until it happens.

Councillor Bushby did not believe there was any point in trying to establish what is in the landfill. There has been investigation, bore holes at a cost of £44,000; there are thousands of tons of rubbish much not healthy.

He noted that while TDC are working with a number of agencies no mention has been made of Natural England who are the final arbiters. Nothing will happen without their authority. He wondered whether they were involved.

Councillor Christie noted that the Environment Agency had been provided with a Coastal budget of £5.2 billion for the period 2021 –2027. He felt there should be a combined North Devon and TDC bid to the Agency.

He noted from the TDC accounts that they had a coastal budget of £1,020.00 for the year 2019 / 2020.

Professor Masselink indicated that the Tip was quite stable and where the material on the western side had eroded it had moved to the northern side, contriving to protect the Tip, naturally. It won't stop the high tides, because of the sea level rise; the landfill although elevated will not be protected from floods. Erosion and flooding represent quite different risks and should be assessed separately. He suggested that there is more time afforded from an erosion point of view. He felt that with the increased sediment movement the Tip would not be exposed for another forty years.

Professor Spencer explained that it would not be possible to obtain detailed information on the Site content. It would be better to concentrate on understanding how the site will flood, erode, the rate at which material will be released and how it will behave once it is in the Environment.

Councillor Bushby intimated that the Tip will be under threat within two to three years. The sand dunes at the seventh tee (and eighth green) of the golf course used to be seven metres tall, they are now three metres in height (eroding very quickly) and have come back inside. When it is finally eroded the Tip will be exposed from the inland.

Professor Masselink noted that there was a salt marsh that would not have the same impact as the erosion from the Tide. He maintained that the Tip was protected from the silt movement and explained how spit worked with movement from the proximal to distal ends.

Councillor Mrs Langford asked if as a result of the eroding sediment going into the Estuary part of the River becoming more silted up would that mean more risk of flooding.

Professor Masselink advised that estuaries by their nature always silt up and become over time shallower, making it harder for the tide to go into the Estuary, with the result that it will reduce the incidence of flooding, not increase the flooding.

Discussion followed on the sediment, the Westward Ho! Spit pushing the River to the northern side, abrasion of the pebbles – the finer the sediment the easier it moves – no more pebbles in the system. The diminishing (sediment) amount, being pushed back by rising sea levels and exposed by waves that arrive at the coast (at a certain angle) causes the material to go from south to north.

Further discussion tried to explain the loss of pebbles including the wire fencing at Bucks Mills to protect the cliffs and the build up behind Clovelly Harbour that may have contributed to the interruption of the flow.

Councillor McKenzie advocated action, a positive plan (not just repair) of where we want to go, what direction we are going to take investigate funding streams. He reiterated Councillor Bushby's desire for a proactive forward-looking approach to prevent a massive environmental disaster.

Councillor Bushby agreed that all appropriate authorities should engage in discussion on what can be done.

Councillor Hodson confirmed that TDC were doing something, liaising with North Devon Council to form a joint working party with DCC and all the statutory agencies. Not just a talking shop. She advised that the smaller authorities do not have the capacity or funding; she stressed the importance of working together. Her aim was to establish the Working Group by 1 December 2020. She confirmed that Mr Cox GP MP had been involved.

c. Information required to establish severity and probability of the threat (to Bideford).

The Chairman advised that TDC responsible for Shoreline Coastline.

Councillor Christie agreed that Bideford Town Council should have a representative on a working party. He felt BTC should be planning for what can be done in the event of a flood and believed it should be an agenda item for the Meeting of the Emergency Planning Working Group. Bideford has experience of flooding. He reiterated that the Council should have input to higher level (discussion / groups).

River flooding is going to be one of the big issues in Bideford. He did though think that the Kenwith Valley / East the Water developments could see run off being a more pressing issue.

The Chairman advised that when the Kenwith Valley is below sea water level it is more difficult to clear any freshwater flooding along that Valley as the water has nowhere to go / drain.

Councillor Mrs Craigie referred to the freshwater flooding and the recent events in Barnstaple. Flood defences need to be considered; reducing the impact of "run off" and how to look after those people that suffer because of flooding. She noted that should the roads to Torrington, Northam, and East the Water flood, then many would be cut off.

The Chairman spoke of the danger of low pressure, increased rain, fewer but more intense precipitations events leading to more fresh water into rivers leading to flooding.

Councillor Mrs Hellyer noted that Barnstaple Street, the new development behind Jewson, Brunswick Wharf and Manteo Way would be the first areas to flood. A lot of Bideford East would be under water.

d. Research options and possibilities on establishing the threat.

The Chairman invited Professor Spencer to lead.

She spoke about the need to review data, local records, Lidar data (is commonly used to make high-resolution maps, with applications in surveying, geodesy, geomatics, archaeology, geography, geology, geomorphology, seismology, forestry, atmospheric physics, laser guidance, airborne laser swath mapping (ALSM), and laser altimetry), Drone surveys – a broad brush.

Establishing the size of the waste, understand how much erosion / flooding has occurred, where will the waste go.

A London research project has run for three and a half years at a cost of £100,000. Engaging someone to consider available data could cost £20,000.

To access coastal defencing funds, there is a need to demonstrate the harm that will be caused to homes and infra structure at risk. There is a need to spend a few hundred thousand pounds to collect more evidence. Any action will cost a lot of money.

The most likely scenario is the site flooding which could happen in the very near future (could happen this winter) but not necessarily a huge impact.

Thames Estuary work has shown that released contaminants disperse rapidly. (Locally it would go into the Bristol Channel.) Erosion need not necessarily be the prime focus. There are so many unknowns; where the stuff goes, how much is going to be released, what the impact might be, will it impact bathing waters? Impact on SSSIs and other environmental designations.

The money needed to solve the problem will not be sourced locally.

There are a number of sites already releasing waste, including asbestos and plastics all over beaches, which are not in receipt of funding.

In addition to evidence consider innovative (long term management solutions) things that can be done to the sites, realise value in the sites, perhaps change the usage: install salt marshes, plant trees on them although not short term projects.

Chairman has liaised with Exeter University Geography Department who have researched temperate mangroves, the tree root disperses the wave energy (in Florida).

Professor Spencer indicated that there has been interest in growing hemp, biofuels along the coastal landfill sites to take up contaminants and stabilise the sediment.

Coastal salt marshes as a defence are very high value, sustainable, they buffer wave energy, are very stable, they stabilise sediment.

Managed retreat in this instance will lead to the landfill flooding.

Members discussed further managed retreat and holding the line at the landfill.

e. Mitigation / adaption options.

Councillor Bushby indicated the Emergency Working Group would consider likely threatened areas in Bideford.

Mr Redwood indicated that the Environment Agency utilise every new development opportunity to increase the flood defences. The Brunswick Wharf development will be extended along Ethelwynne Brown and along the Tarka Trail to extend protection to limit the flooding to Barnstaple Street and areas of East the Water.

f. The future.

Councillor McKenzie should like to engage with those active participants, lobbying, driving, and reviewing. Also, look to planning for such flooding eventualities. Look to help those that are displaced and how to accommodate them in Church / community halls, food, and blanket provision.

Councillor Bushby questioned the silting up of the river either side of the bridge and question the impact upon the river during period of extremely rain.

Mr Redwood indicated there has been an increase in silting up of rivers, through intense agricultural activity. Leaky Dams are being built to slow the sediment.

TDC have limited opportunity to do things in the upper stretches of the river.

Discussion followed on run off, attenuation ponds, planning strictures, environmental refugees and population relocation.

The Chairman thanked the Members for their attendance and support. He concluded the Meeting at 9.26 pm.