KENT COUNTY COUNCIL

KENT FLOOD RISK MANAGEMENT COMMITTEE

MINUTES of A meeting of the Kent Flood Risk Management Committee held at Council Chamber, Sessions House, County Hall, Maidstone on Monday, 6th March, 2017.

PRESENT: Mr R H Bird (Substitute for Mr M J Vye), Mr A H T Bowles, Dr M R Eddy, Mr L B Ridings, MBE, Mr T L Shonk (Substitute for Mr A Terry), Mrs P A V Stockell, Cllr Ms R Doyle (Canterbury CC), Mr D Mortimer (Maidstone BC), Mr A Hills (Shepway DC), Mr G Lewin (Swale BC), Mr H Rogers (Tonbridge and Malling BC), Ms C Stewart (Tunbridge Wells BC), Ms G Brown (KALC), Mr D Henshaw (KALC), Mr P Flaherty and Mr P Dowling

OFFICERS: Max Tant (Flood Risk Manager), Tony Harwood (Resilience and Emergencies Manager), Fiona Gaffney (Kent Resilience Team Supervisor) and Andrew Tait (Democratic Services Officer)

UNRESTRICTED ITEMS

1. Election of Chairman.
(Item.)

(1) The Committee extended its best wishes to Mr Mike Harrison who was recovering after a spell in hospital.

(2) Mr L B Ridings moved, seconded by Mr C Pearman that Mr A H T Bowles be elected as Chairman for the meeting.

Carried with no opposition.

(3) Mr Bowles thereupon took the Chair.

2. Minutes of the meeting on 14 November 2016.
(Item. 3)

RESOLVED that, subject to an amendment to Minute 18 (10) to indicate that the person who chaired the Recovery Group would attend the Response Group meetings from the onset, the Minutes of the meeting held on 14 November 2016 are correctly recorded and that they be signed by the Chairman.

3. Rewilding and Natural Flood Management - Presentation by Professor Alastair Driver FCIEEM, Director England and Wales Rewilding Britain.
(Item. 4)

(1) Professor Alastair Driver gave a presentation. The slides are contained within the electronic agenda papers on the KCC website.

(2) Professor Driver introduced himself. He said he had been the first conservationist in the Water Industry during the 1980s, working in the Thames catchment for 20 years. For 15 years until September 2016 he had been the Head of Conservation for the Environment Agency. Since retiring, he was working as the Director of England and Wales *Rewilding Britain*. This was a very small

organisation with only three paid personnel in the UK (a Director in England/Wales and in Scotland as well as an overall Co-ordinator).

(3) Professor Driver said that the thrust of *Rewilding Britain's* work was to bring about and enhance healthy, functioning catchments. It worked on the understanding that everyone who was involved in environmental management and restoration had a role to play in rewilding. This meant that at the most basic level, the pond at the bottom of a garden was important whilst at the top end of the scale there were very large areas (10k hectares in England and Wales and over 100k hectares in Scotland) where the landscape and its hydrology should be allowed to function naturally. This would bring both environmental and social benefits (such as flood management) whilst continuing to enable people inhabiting these areas to make a living. The best example of a large scale rewilding area in England was Ennerdale in the Lake District, Cumbria.

(4) Professor Driver then said that the first people he had approached since becoming Director had been the NFU, followed by the CLA. Their members had asked what a rewilded area would look like. His reply had been that it would vary on every occasion according to its environment and the time that needed to be spent to bring it to its optimal condition. A slide taken of a Welsh Mountainside after thirty years demonstrated the very great length of time that it took to revert an exposed, infertile landscape back to woodland.

(5) Professor Driver then gave some actual examples of natural flood management which could be undertaken "from source to sea." At Exmoor, the simple acts of blocking ditches had dramatically reduced peak flows from the ecologically restored areas and increased storm flow lag times in the space of a year. *Rewilding Britain* was able to evidence that peak flows reduced by some 30% whenever Uplands such as Exmoor were ecologically restored.

(6) Professor Driver moved on to consider the challenges and possibilities in Kent. He used the phrase "little and often" to describe the approach. Flood Management often consisted of doing a number of things on a relatively small scale. At Belford Burn in Northumberland, volunteers had built bunds out of timber, creating a number of ponds which collectively held a great deal of water back more economically than would have been the case through the creation of a very large reservoir. He added that the slow release of water that had been achieved would also have the effect of mitigating the impacts of a drought by recharging groundwater.

(7) Professor Driver said that tree planting and natural regeneration of woodland was a well proven method of flood attenuation. Its success was due to the amount of water retained below the soil. At Pont Bren in the Welsh Borders, the amount of water retained in tree planting areas was 60 times greater than in those parts which were intensively grazed by livestock and where a great deal of soil compaction had taken place as a consequence. The break-up of soil and water retention derived from tree planting occurred within two or three years of the planting, well before the trees matured.

(8) Professor Driver then said that a number of experts had questioned whether these solutions would work when the land was saturated. His response was that in most cases, the land was *not* saturated. An example of this had occurred in

Somerset where there had been high levels of surface water but the earth had been bone dry six inches down.

(9) Woody debris dams were becoming more popular. The best example was the River Stroud Enhancement Project in Gloucestershire where one Stroud DC employee with a budget of @ £150k (including his own salary) worked with local contractors to build woody debris dams to reduce flows into the Stour River. To date, some 40 structures had been built, covering some 21% of the entire drainage catchment in the area. This project was a blueprint that had been followed by other authorities such as Hebdren Bridge in Yorkshire who were now able to provide a cost effective solution to a problem which would never qualify for major Government funding. Professor Driver showed a graph which evidenced the results of a major flooding event in 2012 compared with a similar event in 2015 after the woody debris dams had been constructed. Although this graph did not paint the entire picture, the difference between the two events was so great that there had to be a connection.

(10) Professor Driver said that in the right place and with the right control mechanisms, the benefits of bringing European beavers back into England after a 500 year absence after they had been hunted to extinction, significantly outweighed the dis-benefits. Studies in Devon demonstrated that they were significantly slowing the river flows by about 30% and increasing the lag time by an hour. This was because they were creating ponds and acting as sponges on the ground. They were also contributing significantly to water quality improvement by reducing downstream levels of nitrates, phosphates and suspended solids. In addition, they were creating wildlife habitats that Wildlife Trusts would otherwise have needed to spend large amounts of money to emulate.

(11) Professor Driver moved on to discuss the benefits of river restoration. Although it was difficult to gather measured evidence, one study had proved that the creation of woody debris dams coupled with river re-meandering did generate flood reduction downstream. The restoration of the Hammer Stream in Kent had increased capacity by pulling the banks back and creating additional floodplain.

(12) Floodplain reconnection involved the reconnection of the river with the floodplain by de-culverting the river or by “daylighting” rivers which had previously run underground as a result of development. This had happened at the River Quaggy in South London, where the project had brought community benefits in tandem with flood attenuation gains. Floodplain reconnections were excellent candidates for Section 106 Agreements and Local Plan policies.

(13) Professor Driver briefly said that SuDS greatly reduced run off and should be compulsory within new development. Targeting Schools for SuDS projects was an excellent way of providing significant benefits whilst increasing young people’s knowledge and understanding of the issues involved.

(14) Professor Driver said that he had been involved in many coastal alignment schemes. Although they were resource-hungry, these schemes were able to deliver very significant benefits. There were numerous opportunities for small-scale projects in Kent which he encouraged support for.

(15) Professor Driver summarised by saying that each of the schemes he had described could be undertaken successfully on their own and would contribute to

the reduction of flood risk. Nevertheless, it was when these projects were undertaken together that a real difference was made. At Pickering Beck in East Yorkshire, the combination of Upland grip-blocking, high level timber dams, and a flood storage area had been able to significantly reduce flooding in downstream urban areas. At Holnicote Estate in Somerset, £160k of rewilding works had reduced the flood peak by 10% and had prevented housing worth £30m from flooding during a 1 in 50 year flooding event. This was important as it demonstrated that rewilding work could have a significant impact on ameliorating major as well as low level flooding events.

(16) Professor Driver described soils as "the elephant in the room". Soil condition and quality had to be treated as a natural flood management tool. The compaction of soils through over-grazing and tillage was causing huge problems in some parts of the country. It was essential to persuade all farmers and land managers of the necessity of taking the necessary steps to reduce muddy floods. In his view this was the most important problem that needed to be tackled in terms of environmental management. Currently, huge amounts of topsoil were simply washed away into the sea.

(17) Professor Driver concluded his presentation by delivering the key messages. It had to be accepted that natural flood management needed to be delivered in close alliance with traditional civil engineering. Nevertheless, there was great potential for natural flood management which had not yet been realised. It was important to keep doing small things as often as possible. If this was achieved, rewilding would bring enormous benefits for all.

(18) Professor Driver replied to a question from Mr Hills by saying that everything had to be seen in the context of the growing number of extreme weather events. The effect of rewilding was to create greater landscape resilience to cope with climate change.

(19) Professor Driver replied to a question from Mrs Brown by saying that Kent had many small communities who lived in valleys at the bottom end of slopes where water was flowing faster than it would do naturally. Such communities rarely received funding for major projects, but it was possible for individual schemes funded partly out of the local levy or Section 106 Agreement to make a significant difference. The best way forward would be to identify the most promising area catchment for such work and then adopt the practice set by the River Stroud Enhancement Project in Gloucestershire. The effect was likely to be that more projects would be instigated once the first project had been successfully established and proved itself.

(20) Mr Tant confirmed that rewilding work was already being actively considered in Kent and that some small projects had already been undertaken at locations such as the Hammer Stream. A further scheme was being developed at Mill Farm in Marden. KCC was working in partnership with the EA and the South East Rivers Trust who had been awarded a £300k grant out of DEFRA's new £15m Natural Flood Management Fund. The Medway was recognised as a priority catchment area by DEFRA.

(21) Dr Eddy said that some landscapes had changed their character as a result of human interference in ancient times. He asked whether this meant that natural flood management aimed to return the land to its pre-human interference condition.

Professor Driver replied that the goal was usually to return the land to the condition it had been in a couple of centuries earlier. At this point the focus was on remote Upland areas. It was unlikely that the aim would ever be to go back further.

(22) Professor Driver replied to a question from Mrs Doyle by saying that there was no climate-related reasons why European beavers could not inhabit most of lowland Britain. They were naturally shy creatures who would rather not build dams in main rivers because they could build their lodges without needing to do so. Their greatest value in this respect was in their activity in smaller side streams. There was a five year project taking place on the River Otter and, if the benefits outweighed the dis-benefits, it was very likely that the Government would approve more releases in other parts of the country.

(23) RESOLVED that Professor Driver be thanked for his informative and thought-provoking presentation.

4. Thames Estuary Asset Management 2100.
(Item. 5)

(1) Mr Victor Freeney from TEAM 2100 gave a presentation. The slides are contained within the electronic agenda papers on the KCC website.

(2) Mr Freeney began his presentation by setting out the area covered by the Team which was between Twickenham in the South West to Southend and the Isle of Grain in the East. It contained 23 policy units, 13 of which had their defence systems fully funded whilst 10 (including the 4 in Kent) still needed local funding to complement the government funding which was already in place. TEAM 2100's work programme set out how flood risk would be managed in the Thames Estuary area up to and beyond 2100. Work on developing the flood management plan had begun on 2002 and it had been published in 2012.

(3) Mr Freeney said that the effect of climate change would be an increase in storm surges and seal level rises as well as increased rainfall. More people now lived in the flood plain, increasing the consequences of any flooding that did occur. He added that the UK was tilting from top left to bottom right so that the southeast was effectively sinking. In addition, flood defences were now ageing, which also increased the flood risk.

(4) Mr Freeney then said that the Thames Estuary plan was outlined in three phases. TEAM 2100's responsibility in Phase 1 (2002 to @2015 *Maintaining confidence and planning together*) was to secure the investment programme for the first ten years of the plan.

(5) Mr Freeney went on to set out key facts in TEAM 2100's 10 year delivery programme. The contract had been signed in late 2014 with the Environment Agency as the client. It would run for 7 years with a 3 year extension at an estimated cost of £308m. The Integrated Delivery Team consisted of the Environment Agency working with CH2M, Balfour Beatty, Qualter Hall, Hunton Engineering, KGAL and engineering safety consultants. This was an innovative approach as it brought the clients and providers into the same team.

(6) Ms Rebecca Murphy (Environment Agency) set out to describe the physical work being undertaken, together with the plan going forward. The 10 year

programme was essentially split into two sections, the first of which was the major maintenance of the major barriers including the Thames Barrier and the Dartford Creek Barrier. The second was the fixed and active assets such as the walls and tidal embankments as well as the smaller pedestrian and vehicular floodgates and the tidal outfalls. The physical work generally covered major maintenance, but also included inspection, repair or refurbishment of these defences. There were no plans to carry out major replacements during the 10 year period.

(7) Ms Murphy said that the major focus of the first two years of the 10 year programme had been on the initial assessment and appraisals of the historic assets, including a general walk-over by the geological and technical experts. This work was supported by facilitation exercises such as annual vegetation clearance. This would lead to the identification of the work that was needed during the rest of the programme period. The next phase would be option identification, followed by design development and the selection of the preferred option. This would be carried out in consultation with all stakeholders involved in these defences.

(8) Ms Murphy moved on to discuss the several hundred assets currently in the programme. In Kent, these included the Dartford Creek Barrier and the defences in the Isle of Grain. These were all being appraised at this time as part of the two year assessment and appraisal phase.

(9) Ms Murphy then said that the only exceptions were the 54 floodgates in the County, where this work had been completed in a relatively short period and they were now being refurbished. Nine of these had been replaced during the current year (8 along Royal Pier Road in Gravesend and 1 at the Sealink Ferry Dock. Consideration was also being given to which of them could be de-commissioned. This would entail the full removal of the asset and its replacement by a passive defence system.

(10) Ms Murphy then informed the meeting that the 4 policy units in Kent were Dartford and Erith; Swanscombe and Northfleet; North Kent Marshes (split into Canal Basin, Denton and Shorne Marshes, and Cliffe and St Mary's); and Isle of Grain (split into Allhallows and Grain Marches,, and South). The accompanying slide set out the dates for the various stages. Generally speaking, Stage 1 would be completed in all four policy units by Quarter 2 of 2018/19. The usual expected start date for construction was Quarter 3 of 2020/21.

(11) Ms Murphy explained that much would be dependent on the achievement of full funding. The figures in the accompanying slide were based on the current figures for the work undertaken in the Thames Estuary Plan. The figures given were estimated at the highest level. The actual sums would be determined by the option selected. A funding strategy was being developed which would enable engagement with the right stakeholders. Addressing the large funding gaps was one of the main priorities for the next four years.

(12) Mr Lewin asked about the impact of "bounce back" whenever the Thames Barrier was closed. He also asked why the Study had stopped at the Isle of Grain rather than covering the entire Thames Estuary. Ms Murphy replied that when the Thames Barrier was constructed in the 1980s, it had been done as a single system so that the anticipated and known wave reflection was accounted for in the crest level of the defences. The impact of the Barrier beyond the Isle of Grain was negligible. The Strategy for the Thames Estuary only accounted for the area

around the south of Grain. An additional Study was being developed for the Medway and Swale Estuaries (including Whitstable and the Isle of Sheppey).

(13) Mr Tant confirmed that he was in contact with the producers of the Medway and Swale Estuaries Study and that he was hopeful that they would be able to attend the next meeting of the Committee.

(14) Mr Pearman informed the meeting that KCC was represented at the Strategy Group that was driving this particular delivery mechanism and that all the issues that had been or were likely to be raised were known to its two Members on the Board.

(15) Mr Bowles said that the response given in respect of the impact of the Thames Barrier east of the Isle of Grain was often given by experts. Many who lived in the area described considered that the impact was greater than the experts believed it was.

(16) RESOLVED that Victor Freeney and Rebecca Murphy be thanked for their presentation and that its contents be noted.

5. Kent Resilience Forum Exercise Surge Debrief Report.
(Item. 6)

(1) Fiona Gaffney (KCC Head of Resilience and Emergency Planning) gave a presentation. The slides are contained within the electronic agenda papers on the KCC website.

(2) Ms Gaffney briefly recapped the Exercise Surge scenario. The exercise had taken place between 25 and 27 September 2016. It had involved County-wide flooding and evacuations. It had been drawn up in such a way as to involve all the Boroughs and Districts, testing all the relevant agencies' ability to provide mutual aid.

(3) The Multi Agency Group had set itself 47 objectives, all of which had been met. Some of the key objectives were the testing of the KRF Evacuation and Shelter Plan; the Pan Kent Flood Plan; elements of the multi-agency Flood Plans, the effectiveness of the Bronze (operational) training; the Romney Marsh Diversion and Evacuation Plan; and the validation of the lessons learned in previous exercises. An entire day had been focussed on the Recovery element. This aspect of the exercise had been led by KCC. Some 250 people had participated in the Recovery Table Top exercise on the final day.

(4) Ms Gaffney said that a key element of this exercise was that it involved all the KRF partners. It had been led by the Local Authorities, involving (amongst others) the Emergency Services, the Voluntary Sector, and the Environment Agency. Overall, some 800 people had been involved in some capacity.

(5) Ms Gaffney moved on to discuss the three debriefing sessions. The first of these (October 2016) had been for the Exercise Surge Planning Team. This had identified the need for a communication plan in tandem with the exercise planning, because the wider public had not been made aware that such a large scale exercise was taking place. If information about the exercise had been made widely available, there would have been tremendous benefits in terms of community resilience.

(6) The scoping of the exercise had grown tremendously due to the large number of agencies involved, all of whom wished to test their own priorities. Although this had not led to any dilution of what needed to be tested, it had stretched resources. In future, there would be a cut-off point in the scoping process after which the focus would be purely on delivery.

(7) Ms Gaffney said that it was not intended to carry out such a resource-intensive exercise every year. The likelihood was that it would be once (perhaps twice) in a three year cycle.

(8) Ms Gaffney continued by considering the legacy of Exercise Surge. The lessons learned would be used to inform the training that was offered in the future. One of these was that an off-the-shelf training product would be developed which would be given to the Gold Commanders.

(9) Ms Gaffney said that the Recovery part of the Exercise had focussed on the immediate recovery period a day after the event itself. This aspect would be tested again in the exercise planned for 207/18, but on this occasion there would also be an element testing recovery at a point six months later. This would draw on the "soft recovery" elements of the lessons learned in Cumbria such as the social and psychological impacts on the communities.

(10) Exercise Surge had tested the social media elements of media management. There were other elements which would be tested during the next exercise such as the use and management of real media.

(11) Ms Gaffney then said that there were different ways in which table top exercises could be undertaken. Future exercises would aim to build the scenarios as a whole so that they became more organic. This would replace the current practice which was for scenarios to be phoned in or provided in writing as the exercise progressed. It had been found that the latter approach tended to lead to interruptions to the process.

(12) Exercise Surge had tested the familiarity of the partner agencies with the national documentation that had to be completed whenever emergencies were being responded to. This would continue to be a significant objective of future exercises.

(13) Ms Gaffney explained that communication resources had been stretched because Exercise Surge had taken place in 9 different locations. The lesson derived from this experience was that it was necessary to review the way in which the various Centres had been able to talk to one another in order to identify possible ways in which the available communication technology could be more effectively utilised.

(14) Ms Gaffney said that there had been questions about the compatibility of IT technology. Responders were now being encouraged to test their laptops at the locations where they were likely to be bases and to also be prepared to do without IT altogether if the need arose. In such circumstances, the value of the incident log, pen and paper should be appreciated.

(15) The testing of the KRF Evacuation and Shelter Plan had led to amendments being made in the light of experience. Ms Gaffney said that improvements could be made to the way in which information was drawn from the public. For example, messages of advice could be pre-prepared, explaining to potential evacuees where they should go and what they should take with them. This was particularly important for those who were being re-located to very large evacuation hubs. She added that the Local Authorities debrief session in November 2016 had confirmed that they would be able to cope with the numbers at the onset but that there were areas for further consideration about the longer term questions of ensuring that they were able to support one another both within the County and with Local Authorities outside. These questions were being taken forward by the Local Authorities Emergency Planning Group.

(16) Ms Gaffney then said that the Multi-Agency Flood Plans would be reviewed following the local lessons learned during the Exercise. Work would also be undertaken by a Task and Finish Group on the experience gained during the evacuation part of Exercise Surge. It was essential to evaluate the length of time it would actually take for a full evacuation to take place. The evacuation of 120 people in the Romney Marsh had been successfully achieved within the 5 hour deadline that had been set. Nevertheless, the use of available resources and the information that was given to the public would be carefully looked at to see what improvements needed to be made. The Romney Marsh Diversion and Evacuation Plan would also be reviewed by Shepway DC in the light of the evidence gathered.

(17) Ms Gaffney said that a Training needs Analysis would be completed for Welfare Centre Managers and staff. The Local Authority Emergency Planning Group would be examining whether there had been sufficient Welfare Centre training to ensure that they continued to operate through the emergency period and that the staff had the right skills to ensure that they did so.

(18) Ms Gaffney said that work would be done on the Information Sharing Protocol to ensure that the right and appropriate information was shared, particularly in respect of vulnerable people.

(19) Ms Gaffney concluded her presentation by saying that the Exercise had underlined the importance of the Recovery phase, which was always the longest-lasting. The success of an emergency response would always be judged by the public on the basis its Recovery phase, as had been the case in the Herald of Free Enterprise disaster. It was essential to build an understanding of the social and psychological impacts into the planning and training.

(20) Mrs Brown stressed the important role that the Parishes would play as well as their Plans and experiences. She was concerned that their role had not been mentioned in the presentation. Ms Gaffney replied that Lydd TC had been involved in the Live Play evacuation. The Parish Councils would be involved more closely in future through the Community Resilience Group.

(21) Mr Bowles commented that the quality of Parish Council Emergency Plans tended to vary greatly. Some were excellent and very detailed whilst in others, they were non-existent.

(22) Mr Bird said that extreme weather events could easily bring unplanned -for problems. This had been the case in Yalding in the 2013/14 flood when there had

been no power for 4 days. When this happened, all testing of electronic communications became irrelevant. Ms Gaffney replied that plans were being developed to cater for communications during a complete power blackout. This question would also be looked at during the Recovery Exercise scheduled for 17 July.

(23) In response to a question from Mr Shonk, Ms Gaffney said that the difference between Resilience Direct (RD) Mapping and Shape Mapping was that the latter was based on the Health Authority, giving contact for GPs, Hospitals, Care Homes and Rest Centres. RD Mapping would bring about a single point of focus and would be a tool that would be useful for all agencies. There was also very little if any cost involved because of the national priority that had been accorded to it.

(24) Dr Eddy asked how long it would be possible to respond to an emergency before there would be a detrimental impact on the people available. Ms Gaffney replied that the agencies were asked to be prepared to run 2 rest centres for a 24 hour period (three 8 hour shifts). Ideally, rest centres were not intended to run for longer than this as alternative housing would be sought. Should an emergency last for longer than this, support to provide larger-scale accommodation would be requested from other Authorities that were less affected. She added that all Authorities in the County had been trained in the "One Kent" approach. The lessons had been learned from the very long hours that responders had needed to put in during the 2013/14 event. The needs of the responders were being given a high priority and mutual aid was a major consideration for Managers and Trainers.

(25) Mrs Doyle noted that Kent responders had been involved in discussions with responders in Cumbria about the after effects. Significant information could also be shared within Kent utilising the experiences in Bridge and Barham

(26) Mr Hills said that every major flooding event was unique and brought its own problems. He was pleased to note that the Romney Marsh Diversion and Evacuation Plan had been tested as there would not be any major roads passable in this area if the sea defences were breached. This would necessitate evacuating some 6,000 people. The need for better communication with the Parish Councils had been identified. Another area for more detailed consideration was how to provide the best quality information to the public. As an example, it was now possible to photograph an affected area from a drone and to make the pictures widely available. Drones had the advantage that they were not reliant on power as they contained their own power packs.

(27) Mr Bowles said that the expertise, knowledge and commitment of Local Elected Members should always be utilised. He added that they should also have some training in and resultant understanding of Emergency Planning.

(28) RESOLVED that the content of the multi-agency debrief report be noted.

6. Environment Agency and Met Office Alerts and Warnings and KCC Flood Response activity since the last meeting.
(Item. 7)

1) Mr Harwood reported that the number of flood alerts issues by the Environment Agency since the previous meeting of the Committee had now risen

to a total of 21 (4 fluvial and 17 coastal), contrasting with the overall figure of 54 flood alerts during the corresponding period in 2015/16. The Thames Barrier has been closed on 11 occasions (8 for flood defence and 3 for test purposes) during the same period.

(2) Mr Harwood added that in 2016 the month of December had seen only 17% of its average rainfall. January 2017 had seen an average amount of rainfall, but February had also been dry. As a result, Bewl Reservoir was now only 2/3rds full.

(3) The coastal flooding alerts that had occurred were the result of spring tides and North Sea surges experienced between 11 and 17 January 2017, which had triggered a wide scale precautionary evacuation.

(4) RESOLVED that the report be noted.