

**Topic Review:**

**Flooding in Kent**

**2000–2001**

**Report by the Policy & Resources  
and Strategic Planning Scrutiny  
Committees**

**April 2001**



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## **1. Introduction**

1.1 The flooding that occurred in many parts of Kent in the latter part of last year (2000) and which continues at the time of writing has been for many people the worst in living memory. While some residents of affected areas can recall water reaching similar depths in the past, none have seen water flowing with such speed and force through streets and houses. Having heard evidence from some of the people involved and seen photographs and video footage of the flooding, it is amazing and very fortunate that there was no loss of life reported in the county as a result. Devastating as they were, these were not the first flooding incidents in Kent in 2000, and there have been several incidents from the winter of 1999-2000 onwards. In view of the severity of the floods, the County Council decided to hold a Topic Review, to be conducted by a core group of Members from the Policy and Resources and Strategic Planning Scrutiny Committees, to undertake a detailed review of all aspects of the flooding in Kent.

The Terms of Reference for the review were to determine:-

- (a) What were the factors which contributed to the flooding in the County?
- (b) What preventative enhancements are necessary to limit the flooding to vulnerable areas?
- (c) Were the warnings for communities and vital services adequate and sufficient to minimise the extent of the flooding and the potential damage? Can the system be improved?
- (d) What is the role of emergency and support services? How is such an emergency co-ordinated? Can this be improved?

1.2 The Core Group has heard evidence from a wide range of individuals and organisations and has visited some of the worst affected parts of the county to see at first hand the effects of the floods, and to hear the views of local residents and Parish Councils on the factors that have contributed to the flooding and what might prevent or at least reduce the damage in future. In addition there has been a very large amount of written correspondence received. Details of the visits, and some of the more local issues raised during the course of them, are contained in Appendix 1. These accounts provide invaluable information on the nature of the flooding and raise important issues that need to be addressed by the various agencies involved. All agencies concerned will receive a copy of this report, and it is recommended that they pay particular regard to these pages. A list of the witnesses seen by the Core Group is attached as Appendix 2.

1.3 The Scrutiny Committees would like to put on record their gratitude to the many people involved in the emergency response, and to those residents who have given up their time to talk to Members of the core group in distressing circumstances. Members have been impressed by the fortitude shown by people in such adverse circumstances, but are equally well aware that this will not last indefinitely and there is a warning to all agencies that people will expect action in the short term as well as the medium and longer term that will make them less vulnerable the next time this happens.

1.4 During the course of its work, the Core Group identified further witnesses from whom it would be possible to hear evidence, and is well aware that there are other parts of the County that have suffered which it has not been possible to visit. However, there is considerable urgency about the current situation for many people who rightly expect something done now, and there are certain things that need to be done urgently as well as general lessons to be learnt. While recognising the complexity of this subject and that more time could easily be spent pursuing it, the Core Group have therefore decided that it is important to reach conclusions and make recommendations to the County Council at its meeting on 26 April 2001.

1.5 It needs to be emphasised at the outset that, however good flood defences are, there will always be the possibility that they will be overwhelmed by an exceptional event, and it is unlikely that the risk of flooding can be eliminated altogether. Nevertheless there is much that can be done to reduce the risks and minimise the effects. It should also be said that, due to the nature of some of its activities, the County Council may find itself at risk of legal action arising from flooding in some situations in future, and needs to guard against this risk.

1.6 The County Council has a role in flood defence as a primary funding authority and as a principal emergency planning authority. The Ministry of Agriculture, Fisheries and Foods (MAFF) has policy responsibility for flood and coastal defence "operating authorities", specifically the Environment Agency, Local Authorities and Internal Drainage Boards. For the purpose of the high level targets set by MAFF, local flood defence committees with executive powers are considered as separate operating authorities and are required to produce a policy statement setting out their flood defence. The Kent Local Flood Defence Committee is responsible for the functions of the Environment Agency relating to flood defence in Kent, with the exception of issuing levies or making drainage charges. Apart from certain obligations to protect internationally important habitats under the EU Habitat Directive, all flood and coastal defence works are taken under permissive powers. The Local Flood Defence Committee does not normally accept responsibility for maintenance of flood defences on public authority or private land; this is the responsibility of the landowner.

1.7 District and Borough Councils are the relevant operating authority for flood defences on ordinary watercourses that are not within the area of an internal drainage board; and coastal protection (measures against coastal erosion) on all frontages in the authority's area. They may also undertake sea defence works. There is therefore a clear need to work with District and Borough Councils on this. Internal drainage boards are the relevant operating authority for ordinary watercourses in areas known as internal drainage districts. Internal drainage districts are areas which derive benefit, or avoid danger, as a result of drainage operations. "Areas of benefit" were originally defined as those areas included in a contour line eight feet above flood level in rural areas, and flood level in urban areas for the non-tidal districts and five feet above high tide in coastal districts. This definition was followed strictly in setting up the Upper Medway Internal Drainage Board in the 1930s.

## **2. Findings**

### **2.1 Flood Risk and Prevention**

2.1.1 The Core Group has heard evidence from a number of people about the causes of the flooding in the county. Clearly the main factor was the exceptionally high rainfall that was experienced in October and November last year, which fell onto ground that was already very wet. In very many parts of the county the ground is still saturated. Further flooding is taking place as rain continues, even though recent rainfall levels would not normally by themselves be sufficient to cause such problems. Other contributory factors are likely to have been changes in run-off from the clays of the High Weald and other impermeable subsoils, brought about by deforestation, increase in arable farming and urbanisation. Groundwater flooding has been very much in evidence in East Kent, where streams or bournes have appeared in places where they have not been seen before. Most predictions suggest that these will continue to flow until the summer at least, depending on the amount of rainfall.

2.1.2 Overall, the Environment Agency have said that about 2500 properties in the Southern Region have been flooded. Of these about 1400 have been affected by river flooding, while about 1000 have been flooded from surface water drains, groundwater and highway drainage. The Environment Agency is shortly to produce a review of the flooding events of recent months.

2.1.3 The scientific arguments about global warming and climate change are complex and most of the witnesses the Core Group spoke to said that it would be necessary to wait for some years before it could be said with certainty that a change is taking place that is outside the normal climate variations that have occurred over centuries. However, most witnesses believed that something was happening which was exceptional and believed that it was to do with global warming. There is also clear evidence that sea temperature is rising, and the Core Group heard evidence from the Meteorological Office that it only requires a very small variation in sea temperature to produce significant changes in the weather.

2.1.4 The conclusion the Scrutiny Committees draw from this is that the situation is too serious to ignore and that we all have to accept that what we have experienced during the course of this review is the product of a change in our climate which will mean warmer, wetter winters with an increased risk of flooding. As a result we must prepare for that eventuality.

2.1.5 The Core Group heard evidence from both the Environment Agency and the Met Office that forecasting of extreme events had improved considerably in recent years and that since the report of the independent review into the Easter 1998 flooding in England, (known as the Bye Report), there had been close co-operation between the two organisations to make sure that forecasting flood situations was improved. The Met Office is much more confident now about predicting severe rainfall events but still has difficulty providing accurate forecasts of the intensity. This in turn makes accurate information about the likely depth and scale of flooding difficult. The Met Office are continually working on improving their forecasting and the Environment Agency have collected a lot of data from the recent events which will help them to provide more accurate projections in the future. The Environment Agency informed the Core Group that the Met Office's nearest weather forecasting

radar installation is near Amersham, in Buckinghamshire. The radar is at its most effective up to a radius of about 100 kilometres, which therefore means that parts of Kent are not as well covered as they might be and which leaves the county particularly vulnerable to weather moving in from the South and East. The Environment Agency have lobbied the Met Office about this, but understand that part of the problem lies in the fact that the Met Office have been refused planning permission to install suitable radar four times in the last ten years.

2.1.6 There has been a great deal of evidence to show that land and highway drainage systems were unable to cope with the amount of water that they had to deal with, and it has been suggested that even if they had been in perfect condition, they would not have coped. At the same time there has been ample evidence to show that these systems had not always been maintained adequately, that many had fallen into a state of disrepair and, in the case of many land drainage ditches, removed completely. This includes dykes and ditches on farmland which have been removed and also ditches that have been blocked both on farmland and on the roadsides by modern methods of hedge-cutting. It is also clear from the evidence that no one has the responsibility or resources to monitor what is happening to these flood defences on privately owned land.

2.1.7 It is clear from the evidence provided by many of the witnesses including the Upper Medway Internal Drainage Board, that there is a lack of understanding among very many landowners and householders of their responsibilities to maintain ditches and other flood protection measures and also a lack of appreciation of the effects of certain actions, such as filling in ditches.

2.1.8 In terms of highway drainage, the evidence put to the Core Group is that funding for maintenance of these systems has reduced over a number of years (in many ways understandably given the drier weather that was being experienced at the time) and there is also evidence that, at least in some parts of the county, the Highway Contractor working on behalf of the County Council has not been able to fulfil the terms of the contract for gully cleaning, at least not within the timescales stipulated. Members of the Core Group saw examples of grids or grilles placed in front of culverts which stopped debris getting into inaccessible parts of the drainage systems. It appeared that while these may have become partially blocked quite quickly, they were also easily cleared by local residents. The Committees do not at this stage know if companies are manufacturing equipment that could be used in such situations, but think that the County Council's Highways Unit should investigate this further.

2.1.9 Members have also heard evidence that features of the landscape which would have had an important "buffering" effect in the past, such as hedges, trees and orchards have been removed and in some cases replaced by different farming methods with an increased propensity for run-off. Members understand the economic difficulties facing farmers and have also heard evidence that there are sound environmental arguments for reducing the amount of ploughing. Equally Members saw stark evidence from Dr Boardman of Oxford University showing the kind of problems that can be caused by run-off from fields and soil erosion (a striking example was seen by Members of the Core Group visiting Lamberhurst). Both the National Farmers Union (NFU) and the Country Land and Business Owners Association (CLA) have agreed that while some soil erosion is inevitable and natural, it is not in farmers' interests that one of their main resources is damaged in this way.

While recognising that the Ministry of Agriculture, Fisheries and Food (MAFF) documents on erosion and soil protection are guidance only, both organisations have commended them to their members and take the opportunity to remind them of these documents on regular occasions.

2.1.10 Understandably there will be an element of risk-taking for some farmers trying to make a living, that losses in one year due to high rainfall in the autumn can be offset in other years by the higher yields available with autumn sown crops. However, if the probability is that there will in future be increased rainfall at this time of year the risks will inevitably become too great and the consequences will not benefit anyone. Both the NFU and the CLA have indicated that many farmers would be willing to allow farmland to be flooded to prevent damage to residential properties elsewhere in the catchment. The CLA Chief Executive, John Biron, made a suggestion in his evidence for establishing an agri-environmental scheme, on a pilot basis, with Government funding to provide flood prevention in this way. The County Environmental Management Officer made a similar proposal in his presentation to the Core Group and the Committees make a recommendation on this below. Mr Hadrian Cooke, Senior Lecturer in Hydrology at Imperial College, Wye and Mr David Goff from Hadlow College also indicated a willingness to be involved. One of the residents of Lamberhurst whom the Core Group met had done some very interesting work on a scheme for the Lamberhurst area which could have benefits for the Yalding area as well and may provide an initial focus for a group representing the relevant agencies to look at some flood protection measures which may also provide environmental benefits.

2.1.11 There appears to be scope for the Government to look at the agri-environment grant system currently in place to see how best it can be used or adapted to repay farmers who agree to allow their land to be sacrificed in the event of flooding, as well as to encourage practices that will increase the ability of the land to absorb water or slow down run-off and at the same time to discourage methods that lead to the removal of features such as hedges and ditches that act as "buffers". The Core Group also received suggestions that certain grants might be made conditional on adherence to the advisory booklets on the protection of soil referred to above.

2.1.12 It is likely that despite the amounts of rain that have fallen, the likelihood of extreme weather events will mean that there will be water shortages in the future as well. There is every possibility that better water storage arrangements will be needed in future, perhaps in the forms of dams or reservoirs. These also offer the possibility of being able to act as flood protection measures.

2.1.13 The Core Group heard evidence about the River Medway and its tributaries from a variety of sources. There are a range of issues that people have mentioned, in particular:

- the operation of the Leigh Barrier;
- the depth at which the River Medway is maintained;
- the self-operating sluices and gates between the Leigh Barrier and Allington Lock; and
- the need for detailed modelling of the whole Medway river system.

Witnesses have put forward a wide range of suggestions about how the river should be managed. For example, local witnesses could not recall that the Medway had

been dredged in recent memory and thought that its capacity to hold water could be increased in this way. It was also suggested that the depth of the river should be increased to allow more capacity. It was also stated that the banks would need strengthening if the depth were increased or there would be a danger of collapse. There were comments from local residents that independent self operating sluices were not adequate and that a linked, computerised system was the only way to manage the river flows. It was also stated to the Core Group that the gauges on the river were themselves affected by water and reading inaccurately. The Core Group is clear that the River Medway system, including its tributaries, needs modelling to establish the best means of management so that appropriate actions can be taken.

2.1.14 The Kent Local Flood Defence Committee is a key body both for engaging in dialogue with the Environment Agency, and in holding them to account for their performance. The Committee has the opportunity, for example, to extend the Environment Agency's scope by adding other watercourses to those defined as main rivers ("enmainning" as it is known). There is also scope to ask the Agency to bring forward proposals for introducing so-called "softer" flood protection proposals as opposed to "harder" engineering solutions. Kent County Council has five representatives on the Kent Local Flood Defence Committee. There does not appear to be a clear process for reporting back to the County Council or linking in the work of the Flood Protection Committee to the County Council's policies and strategies. The attendance of representatives at the meetings of the Local Flood Defence Committee has been low. There will shortly be an opportunity for the Local Flood Defence Committee to look at the performance of the Environment Agency in the recent flooding when the EA publishes its review.

2.1.15 The question of development on the flood plain has been the subject of several evidence gathering sessions involving representatives from the Environment Agency, Southern Water and the County Land Use and Transport Planning Officer. Government guidance (PPG25) is still in draft form at present. The Core Group has heard that the Environment Agency are a statutory consultee in planning applications. The Environment Agency have said in their evidence that they do not want to have an absolute right of veto over planning applications on flood plains, but equally they have said that they believe they should have more influence and do not generally receive acknowledgement from local planning authorities that the conditions they put forward have been included in the planning conditions. Equally, the Core Group Members believe that the Environment Agency should be making stronger recommendations to planning authorities. They understand that the EA's planning department for this part of the country has been under-resourced and that this is now being addressed.

2.1.16 Members of the Core Group saw examples of flooded properties, both in Lamberhurst and in Hildenborough, where planning permission had been granted, against Environment Agency advice, on appeal to the Secretary of State. The Committees believe that greater cognisance must be taken of the Environment Agency's advice in such situations. There is also an issue about whether the conditions that are imposed on planning applications will be understood and maintained by subsequent owners. At present PPG25 does not specifically provide for permitted development rights to be restricted where the Environment Agency believes the risks to sufficiently great. The Committees also believe that it is important to emphasise strongly that it is not just building in the flood plain that is of

concern, but any development that will affect the catchment areas and lead to any increase in flooding risk.

2.1.17 It will be particularly important to ensure that the public's concerns about flood risk will be closely reflected in the Structure Plan and that planning applications are looked at very closely to ensure conformity. Designing-in more effective flood prevention measures such as porous surfaces, and planted areas will also contribute to reducing run-off and holding up water. These principles should be reflected in the Kent Design Guide.

2.1.18 The Committees heard evidence from the Environment Agency that their relationship with planning authorities in Kent varied. They believe it is important to have a clear focus on flood prevention and alleviation and for the County and District and Borough Councils to maintain a close dialogue with the Environment Agency to ensure that flood protection remains a high priority and that this is reflected in the Structure Plan and the response to planning applications.

2.1.19 Both the Environment Agency and the County Land Use and Transport Planning Officer in their evidence thought that it should be mandatory for local authority searches on behalf of prospective house buyers to include flood risks. The most recent draft of PPG25 seen by the Core Group states that local planning authorities "might wish" to reveal these details. The Committees accept that much necessary development in town centres will be in areas that are at risk of flooding, and clearly would not wish to recommend any measures that would contribute to "blight" in these areas. Nevertheless it is a common belief that when solicitors carry out searches on behalf of prospective buyers, such matters are covered. Part of the solution would therefore appear to lie in increasing public awareness of the issues, but the Committees would also like to take the advice of the Kent Law Society on the most practical way to provide people with the necessary information. In their evidence, Southern Water stated that in Kent the area that gave them most concern in terms of developments was Ashford. Given that Ashford is to be the centre of considerable development over the next few years, the Core Group was surprised to learn that Southern Water, and other water companies, are not statutory consultees for planning applications.

2.1.20 There have been many reports of sewage being present in floodwater. Southern Water have stated in their evidence that water levels were such that water was flowing into the sewage system and surcharging the systems which often contained about 85% flood water.

2.1.21 A further consequence of the repeated flooding in some parts of the county, is that the excess charge on some insurance is now prohibitive. An example of this was seen in Lamberhurst where a business had been flooded on so many occasions that the insurance company clearly considered that the risk of flooding had become an inevitability, with no clear remedial scheme in sight. As a result the excess is now so high that the manager of the business can not continue with it. The Association of British Insurers, in their evidence, explained that most insurers would accept risks if they knew that measures were in hand to reduce those risks, but would not be willing to bear the cost of insurance where risks were so great.

## **2.2 The Emergency Response**

2.2.1 From all the evidence that has been heard, it is clear that lessons have already been learnt from the first events on 9-13 October 2000, and representatives from the various agencies involved in those events and the subsequent events at the end of October, as well as members of the public, have all said the response was better on the second occasion.

2.2.2 The Core Group heard lots of evidence to say that the flood warning system provided by the Environment Agency worked well and alerted many people of the risks, even though the warnings did not give details of the depth of the flooding that people could expect. However, the Core Group also heard evidence from some people on the warning system that they did not receive any flood warning and the Environment Agency are aware that there are many people living in flood risk areas who are still not on the warning system. 80,000 people in the Environmental Agency's Kent area live in the 1-in100 year flood plain or are at risk from coastal flooding. Only 15,000 of these had registered for the flood warning service after four annual mailshots and the recent advertising campaign by the Agency.

2.2.3 There were many warnings issues and most observers thought that the overall lead-in time these gave was good even though, as above, it was difficult to know how to interpret the warnings. However, many witnesses have spoken about the speed at which flood waters arrived being much greater than in the past and in some parts of the county people said they got very little warning. The Environment Agency have stated that despite these difficulties all warnings met their standards of service of a two hour minimum warning time. Some residents said that some people on the list seemed to get their warnings much later than others. The Environment Agency confirmed in their evidence that it takes about two hours to issue a total warning, and that this was due to the age of the system and the technology that it employs, which is now some five or six years old. This time would be extended, using the current system, if, as might reasonably be expected, more households are now added to the list. The Committees recognise the contribution made by the media, particularly Radio Kent and television, whose flood warnings and weather forecasts made an important contribution to coverage.

2.2.4 The Core Group heard evidence from the Ambulance Service that they thought they were brought into the emergency situation later than they would have liked. Had they been brought in earlier they would have been better prepared for some of the evacuations; they would have been able to position their resources appropriately and could have stood crews down from other duties in preparation. It would also have enabled them to do more to see that people had the right medication with them and in some instances they would have suggested more suitable locations for some of the frailer residents. Going back through flooded areas later posed additional risks to Ambulance staff.

2.2.5 Another aspect of the emergency response that many witnesses commented on was the lack of information about road closures and reopenings. This hampered emergency services in getting to various locations, as well as staff trying to get to rest centres, doctors and community nurses getting about the county and of course the general public, including residents of affected areas who in some instances had great difficulty getting to their homes or to rest centres. Radio Kent would have liked to be in a position to give better information to the public about road closures but could not

get the information they needed. The Health Service Emergency Planning Co-ordinator, in his evidence, suggested that the County Council might use its website to give details of road closures. The Core Group also noted that a number of other authorities affected by flooding, including East and West Sussex, give some information on both school and road closures on their websites. It also suggested that Parish Councils could be involved in gathering road closure information. Local residents in some parts of the county were concerned and frustrated that motorists, particularly drivers of heavy vehicles, ignored flood warnings, including road closed signs and drove at speed down flooded and partially flooded roads causing further flooding to houses and damage to walls and parked cars. There will also need to be arrangements in hand to retrieve flood warning signs from the roads and remove sandbags when they are no longer required.

2.2.6 The Core Group also heard evidence from Radio Kent that they found it difficult to give accurate information to the public on the overall situation, because they were getting conflicting accounts from different agencies. They accepted that the situation was changing all the time anyway, but considered that if they had had a better link for the broadcast media to Gold Command (the strategic command and co-ordination of the emergency response established at Police Headquarters in Maidstone), this would have enabled them to provide a better service to the public.

2.2.7 The other issue they raised in their evidence was about school closures. During times of severe weather, people in Kent expect to get information about school closures from Radio Kent. The number of listeners goes up considerably and during the recent events Radio Kent stayed on the air for 24 hours to provide people with information, rather than handing over to the networked service in the evening. Giving out information on school closures usually works well, but the number of closures on this occasion (82 schools were closed on 30 October 2000) appears to have strained the system and there is considerable evidence that information did not get through to Radio Kent, or that by the time it did it was long after children had set out on their journeys to school. The Core Group heard evidence of school transport being unable to complete journeys and having to turn round and return children home. The Core Group also heard evidence from the Head of Network Management that there were "hundreds" of trees blown over across roads, and was concerned for the safety of children and staff travelling in these conditions, even those away from flooded areas. Evidence from the Met Office explained that there was greatly increased risks of trees failing because their roots were weakened by the amount of rain and it did not need particularly strong winds to blow them over. On this occasion winds reached storm force and trees were still in leaf.

2.2.8 The Core Group heard evidence that some of the emergency personnel drafted into flooded areas, particularly police officers from other parts of the county, were unfamiliar with those areas and that this gave rise to some confusion. Given the nature of the emergency and the number of people needed, it is hard to see how this could have been avoided. Rest centre staff said that there could have been a better link between these centres and Gold Command and that they felt rather cut off from what was going on. Social Services staff at rest centres expressed disappointment that they met resistance from district councils and schools offices to providing a hot meal for people arriving there. This caused difficulties for staff who were faced with angry evacuees, some of whom were wet and cold and had not been able to eat before they had to leave their homes.

2.2.9 The Core Group also heard that, over the years, stocks of equipment that might once have been available in an emergency were no longer available. This was the case in rest centres where supplies of beds and bedding were difficult to obtain. The Army, in their evidence, also explained that they no longer have stocks of bedding and sandbags in store. The Core Group heard from the County Emergency Planning Officer that this would be looked at and also noted that one of the recommendations in the Bye Report was that emergency planning agencies should conduct an audit of materials and equipment that may be needed in the event of flooding. The Fire Brigade, in their evidence, said that they had realised the need for shower facilities for their personnel who had been in contact with flood water. This applies equally to rest centres where people who have been evacuated may have been in contact with flood water. It is suggested that agencies will also need to be looking at suitable protective clothing to be worn, if there is a likelihood of coming into contact with contaminated flood water.

2.2.10 There is some variation in the way District and Borough Councils carry out their emergency functions and in the services they provide to the public. It is important for the Kent Emergency Group to be aware of those differences and to see if they can be reduced.

### **2.3 After Flooding**

2.3.1 Residents whom the Core Group have spoken to in the affected areas they have visited have largely reported a positive and helpful response from the Insurance Industry who have clearly worked hard to get loss adjusters and assessors into these various areas to sort out claims. The Core Group has come across some variations in the methods used by builders to deal with flooded properties, but has not to date encountered incidents of bogus traders or "cowboy" builders taking advantage of flooded residents, unlike some parts of the country where Trading Standards departments have been actively involved with both the building and insurance industries and the provision of advice to the general public, warning them of some of the pitfalls and dangers.

2.3.2 The Core Group is well aware from talking to residents that there is abundant local knowledge about local factors contributing to flood risks and some of the possible solutions. The Bye Report recommended that all the authorities, services and agencies should pay particular attention to the accounts of victims when re-appraising response procedures. The Core Group certainly takes this to include the views of victims and other local inhabitants about the contributory factors and possible solutions.

2.3.3 The Bye Report also recommended the need for more ways to establish and maintain flood awareness. In addition to the information from the Environment Agency about the number of people not on the automatic flood warning system, the Core Group heard from the Association of British Insurers that only 75-80% of householders have contents insurance. The Core Group notes that there is information not contained in the Environment Agency's Flood Warning Directory that may be useful to people who are affected by flooding including what to do if they come into contact with contaminated flood water, (not just contamination from foul sewers but, as witnessed by the Core Group, contamination from chemicals), taking adequate warm clothing. The importance of people taking their medication with them

in the event of evacuation needs to be emphasised as evidence from the Ambulance Service indicates that people did not always do so and that this caused them, and the Police, some difficulties. There does appear to be a substantial amount of information available but the Environment Agency would welcome dialogue with other authorities on how to get the message across and the Core Group believe that there is a need for the County and Borough and District Councils, as well as other agencies such as the Health Authorities, to work together to see how this could best be done. In exploring this, the importance of internet-based information should not be underestimated.

## 2.4 Specific Issues

**2.4.1 Ownership of roadside ditches:** Members of the Core Group saw evidence of some uncertainty over the ownership of, and therefore the responsibility for some roadside watercourses. The implications for the County Council could be considerable, as indeed they may be for local residents, and there needs to be greater clarity about this.

**2.4.2 Riparian Ownership:** The question of riparian ownership has come up many times in the evidence the Core Group has heard. In principle it seems unsatisfactory that responsibility for flood protection in some areas should be the responsibility of many different riparian owners without either a co-ordinated policy or the means to maintain or develop defences. The Drainage Authority have permissive powers to require that works are carried out (or carry them out on a chargeable service basis), but can not undertake large scale surveys of the condition of flood protection on private land. There is a clear need to at least make people aware of their responsibilities as riparian owners and again, while the Environment Agency, for example, have published material setting out people's responsibilities, the message has clearly not got across to many people who have only discovered the extent of their own responsibility when they have experienced flooding and contacted one of the operating authorities.

**2.4.3 A21 Lamberhurst Bypass:** On 14 February 2001, Members visited Lamberhurst and among other things were shown the area where the bypass that will become the new course of the A21 will go. Members have not had time to follow this up more thoroughly at this stage but in view of the descriptions of the flooding in that area that were given, it will be very important to make sure that full account is taken of that in proceeding with this development. There is also concern about the bridge in the High Street being lower than the one it replaced some years ago, restricting the flow of water and causing it to flood at that point.



### **3. Conclusions and recommendations**

3.1 The Scrutiny Committees have concluded that the likelihood of such events occurring more frequently in future is too serious to ignore.

**Recommendation 1:** that all agencies need to make sure that they take account of the likelihood of extreme events in dealing with planning applications, planning for future emergency situations of looking at the maintenance and construction of flood defences and drainage works.

3.2 The Committees noted the work that the Met Office and the Environment Agency have done together on forecasting severe rainfall and flooding events, but conclude that more needs to be done to capture the severity of such events so that more accurate predictions of the depth and extent of flooding can be provided. The provision of suitable radar for weather forecasting to enable the Met Office to improve their ability to forecast for the Kent Area is considered very important. If finding a suitable site is the only obstacle to the Met Office taking the necessary action, it is concluded that, in the interests of the people of Kent the County Council should take a proactive approach to working with the Met Office to find a suitable solution.

**Recommendation 2:** that the County Council supports the work of the Environment Agency and the Met Office in improving the quality of flood forecasting and urges them to make sure that this is maintained as a high priority.

**Recommendation 3:** that the County Council engages with the Met Office to find a suitable solution to improving the quality of forecasting for the Kent Area by extending the radar network.

3.3 The Committees conclude that there is sufficient evidence to show that the Highway Drainage systems need to be brought up to a better standard in order to cope with future flooding events.

**Recommendation 4:** that the Networks Management Unit, together with the Borough and District Councils review the performance and appropriateness of the contract for gully clearance.

**Recommendation 5:** that work is undertaken to estimate the extent of remedial or replacement action required to the highway drainage systems and that estimates of the extent of potential danger areas in future together with a scheme of priority and costs over and above the allocated budget should be submitted to the Strategic Planning Committee for urgent consideration.

3.4 There is some evidence that there is a lack of clarity in both the County Council and the District and Borough Councils about their responsibilities for roadside gullies and about their permissive powers, and some inconsistency in the way they carry out their land drainage responsibilities. In some cases this appears to be due to lack of knowledge about the extent of permissive powers. One result if that people get passed from one agency to another, the net effect of which is that all

agencies lose creditability. There is also a need to monitor what is happening to flood defences where the responsibility rest with private owners.

**Recommendation 6:** that the County Council works with District and Borough Councils to make sure that ownership of and responsibility for roadside drainage ditches is clear, and that authorities are clear about their responsibilities and powers relating to land drainage.

**Recommendation 7:** that the County Council urges the Local Government Association and the Environment Agency to see how the monitoring of flood defences that are the responsibility of the private owners can best be achieved.

3.5 The Committees believe that there is a real opportunity to make a contribution to flood protection and at the same time produce environmental benefits. This need not involve very expensive engineering solutions. There does appear to be a convergence of interests in the type of scheme suggested by the Country Land and Business Owners' Association and by the County Environmental Management Officer.

3.6 The Committees conclude that a group should be brought together to take these ideas forward. Such a group will need to include the Environment Agency and other relevant organisations. It seems appropriate for the County Council in its strategic leadership role to take a lead in doing this.

**Recommendation 8:** that the County Council, through the Strategic Planning Directorate, takes a lead role in bringing together the necessary organisations to work with landowners to develop flood protection schemes on an agri-environmental basis as set out above.

3.7 The Committees conclude that they need to take further evidence on issues concerning the depth and management of the River Medway and the operation of the Leigh Barrier. However, Members understand that the modelling of the River Medway that is to be commissioned by the Environment Agency will not take place for some time (possibly two years). The Committees believe it is essential that this is speeded up even if it is necessary to tailor a scheme more specifically in order to reduce costs.

**Recommendation 9:** that the County Council urges the Environment Agency to review its priority for remodelling the River Medway so that appropriate remedial action can be taken.

3.8 In overall terms the Committees believe that Planning Guidance PPG25 must be strengthened, as a result of the floods. The Committees conclude that the Environment Agency must continue to object strongly to development in the flood plains, although it accepts the arguments for some redevelopment and some infill in urban areas that are in flood plains. Where it is necessary to impose conditions of the design and construction of such developments, the Environment Agency should continue to make these as stringent as the situation demands. The Committees conclude that the Environment Agency should receive a notice from the planning

authority and understands that this could be written into the Structure Plan as a requirement. They also believe that the Structure Plan and Community plans must emphasise the need to minimise the risk of flooding.

3.9 The Committees conclude that the water authorities should be consulted on planning applications and that PPG25 should include this as a requirement.

3.10 The Committees also conclude that it should be mandatory for local authority searches to include flood risk, and that this should be a requirement in PPG25.

3.11 The Committees also conclude that there is a need for a closer dialogue between the planning authorities and the Environment Agency.

**Recommendation 10:** that the County Council should strongly urge the Department of Transport, Environment and the Regions (DETR) to strengthen PPG25 to give the Environment Agency greater influence in planning applications, and in particular by requiring that the Environment Agency should receive a notice of conditions imposed on planning applications and, where conditions put forward by the Environment Agency are not included, the reasons should be stated and published by the local planning authority.

**Recommendation 11:** that the advice of the Kent Law Society and other professional bodies is sought to determine the best way to ensure that local authority searches include flood risk and that the DETR should be urged to legislate to make it mandatory that when searches are made with a local authority the enquiries include the risk of flooding.

**Recommendation 12:** that the DETR should be urged to include water companies as statutory consultees in planning applications.

**Recommendation 13:** that the County Council supports the Environment Agency in taking a firm stand against housing development on flood plains or in areas that will affect the flood plains, including areas at risk of coastal and estuarial flooding, and that this is emphasised in the Structure Plan and in community plans.

**Recommendation 14:** that the Environment Agency are asked to attend the meetings of the Kent Planning Officers' Group on a regular basis to ensure that flood risk is kept as a high priority and that flood resistance is built into developments wherever possible.

3.12 The Committees conclude that there is a need to engage in greater dialogue with the Environment Agency to ensure that the County Council's priorities and concerns are fully understood and recognised. They also conclude that the link between the work of the Kent Local Flood Defence Committee and the priorities of the County Council needs to be strengthened. There is a need to take a much more proactive approach to flood protection issues through the Kent Local Flood Defence Committee. There is also a need for the Kent Local Flood Defence Committee to report to the Cabinet and the County Council at least once a year. This should be seen as an opportunity to review progress on the recommendations of this report. It should also be made clear where responsibility lies at both Member and Officer level within the County Council.

**Recommendation 15:** that the County Council adopts a more proactive approach to the Kent Local Flood Defence Committee and ensures that there is a clear mechanism for reporting back and for making sure that the County Council's priorities are put forward and recognised.

**Recommendation 16:** that the Kent Local Flood Defence Committee reports on a regular basis to the Cabinet and County Council, and that the Cabinet makes clear where Member and Officer responsibility lies.

3.13 The Committees conclude that the flood warning scheme needs to be further publicised and recognise that this is likely to mean further strain on the current system, which will need updating.

**Recommendation 17:** that County Council urges the Ministry of Agriculture, Fisheries and Food (MAFF) to make funding available to update the current flood warning systems, and to make sure that all interested parties are kept informed.

3.14 The Committees conclude that there is a need to try to provide better information on the state of roads and road closures in such emergency situations. The role Parish Councils might play in this should be investigated also.

**Recommendation 18:** that the Network Management Unit work with Kent Police to see how better information on road closures and re-openings could be collated, and how best it could be disseminated to the public within adequate timescales.

3.15 The Committees conclude that a better public information service could be provided by Radio Kent if there were a stronger link to Gold Command. This need not mean an actual presence at Gold Command.

**Recommendation 19:** that the Kent Emergency Group be asked to consider the best way to provide a closer link between the broadcast media and Gold Command to enable the provision of the most accurate information possible to the general public.

3.16 The Committees conclude that the present arrangements for notifying school closures, whilst not a perfect system, are probably the only practical way of making such decisions and broadcasting them. However, the Committees are concerned to make sure that the decision whether or not to close a school is taken in the full understanding of the risks posed by extreme weather conditions.

3.17 The Committees are concerned to make sure that schools have been fully advised of the need to ensure that there are appropriate reception arrangements in place for children who arrive at school, not knowing that it is closed, whether that is through a member or members of staff or, if necessary, the local police.

3.18 The Committees are also concerned to make sure that adequate communication arrangements are in place with school transport providers.

3.19 The Committees also conclude that there is a need to make sure that schools are aware of the fax and email details for contacting Radio Kent.

**Recommendation 20:** that the Education & Libraries Directorate check the advice that has been issued to schools and, if necessary, reissue guidance to make sure that appropriate reception arrangements are in place.

**Recommendation 21:** that the Education & Libraries Directorate work with Commercial Services to make sure that suitable communication arrangements are in place.

**Recommendation 22:** that the Education & Libraries Directorate make sure that all schools have the contact details for Radio Kent, including the fax and email details, and that these are used if telephone contact is not possible.

3.20 The Committees believe there is a need for the Kent Emergency Group to be aware of any differences in the way the local authorities carry out their emergency responses and the services they provide.

**Recommendation 23:** that the Kent Emergency Group is clear about the response that will be provided by different local authorities; that they work to ensure these responses are made as consistent as possible and that the public are aware of them.

3.21 The Committees conclude that in such situations it is essential that people arriving at rest centres are provided with hot meals at the appropriate times.

**Recommendation 24:** that the Kent Emergency Group is asked to review the provision of meals at rest centres during the recent events and make sure that appropriate cooked meals will be prepared by properly qualified staff in future emergencies.

3.22 The Committees are aware that various agencies have already made decisions to acquire certain items of equipment and protective clothing for use in future emergencies. Nevertheless, Members believe it would be useful for the agencies to review this together to see whether other needs arise, including the need for clothing to protect the wearer against contact with contaminated flood water.

**Recommendation 25:** that the Kent Emergency Group consider what additional equipment and protective clothing might reasonably be required in similar emergencies, including consideration of storage facilities.

3.23 The Committees conclude that there is a wealth of valuable information, and feedback, to be gained from local people and believe that all agencies involved should pay attention to the accounts of flood victims when re-appraising their responses. In particular, all agencies are asked to study the information set out in Appendix 1, which was provided by Parish Councils and residents when visited by members of the Core Group.

**Recommendation 26:** that the Kent Emergency Group be asked to ensure that appropriate mechanisms exist to enable organisations to take account of flood victims' experiences.

**Recommendation 27:** that all agencies consider the information set out in Appendix 1 to this report, to see what lessons can be learnt and whether there are outstanding matters that need to be resolved.

3.24 The Committees are aware that there is already valuable information about flooding contained in leaflets provided by the Environment Agency and Southern Water among others. The Committees conclude that there is a need to see whether such information needs to be brought together, or extended, and whether there is a need for more general raising of flood awareness. The Committees believe that it is important for all relevant agencies to work together to ensure that information about flooding and flood warnings gets across to the right people.

**Recommendation 28:** that the Kent Emergency Group should be asked to consider how best to increase public awareness and provide additional information about what to do before, during and after flooding events; what services are available and what people can do to help themselves.

3.25 The Committees would like to be reassured that the risk of flooding and the extent of the recent flooding have been taken fully into account in the proposals for the A21 Lamberhurst Bypass, and that the design of the bridge in the High Street and its contribution to flood risk examined.

**Recommendation 29:** that the County Council takes steps to make sure that the risks have been taken fully into account, including appropriate remedial measures, so that there would be no increase in the flood risk to the Lamberhurst area from the construction of the bypass.

3.26 Finally the Committees believe that it will be important for the County Council to discuss this report further with the Environment Agency. The contents of the Interim Report have already been shared with a number of people in the Environment Agency. At the same time, the Committees are aware that the Environment Agency is shortly to produce a review of the events of recent months. It will be equally important to take the opportunity to discuss with the Agency the lessons they have learnt and the actions they propose to take as a result of the review.

**Recommendation 30:** that arrangements are made to discuss with the Environment Agency, at a senior level, and with the Chairman of the Kent Local Flood Defence Committee the findings of the Scrutiny Committees' report and the Environment Agency's review.

## **Local Effects of Flooding**

1. The following details were provided to the Core Group of Members in person when they visited parts of the county affected by flooding, as well as by individuals and Parish Councils who have written to the Scrutiny Committees. Members would have liked the opportunity to visit other affected areas, as they are well aware that other residents of Kent have suffered flooding. Specific matters raised by local residents have been followed up in writing to the relevant agencies, and many of the matters raised are covered by recommendations in the main report. However, the Scrutiny Committees would like to draw the attention of other agencies to these accounts as they believe that there is much valuable evidence here and that it is important for all agencies to learn from the experiences of individuals and communities who have been affected as recommended in the Bye Report.

### **Wateringbury**

1. Residents told Members that they had suffered deep flooding from the River Medway itself. They said that sluices on the river operated automatically now whereas in the past they used to be operated manually and the present system did not seem to work as well. The operation of the Leigh Barrier seemed to be such that the river had to be in full flood before it opened and there did not seem to be any half measures with it; it was either fully opened or fully shut. They said that they had discussed this with someone from the Environment Agency and it appeared that part of the problem was that there were not enough river workers nowadays. They said there used to be 20 people working on the river and monitoring it at any one time, now there were only six.

2. They said that flood water used to arrive in time, but this time the catchment was so saturated and the water rose so quickly that they just did not get the warnings in time. They also did not get a warning when the Leigh Barrier was going to be opened. Their opinion was that the flooding on 13 October was caused by a surge of water following the raising of the Leigh Barrier. A resident said they had been told that the automatic system has to be left alone, but local residents believe that if the river was monitored, the sluices could be closed manually using common sense. They also spoke about the operation of sluices where the Teise and the Beult join the Medway. They think that the sluices operate in reverse so that when the water goes down in Yalding, it goes up in Wateringbury. Again, at one time these used to be staffed every day in Winter.

3. Residents also believe that the river needs dredging because each flood brings another silt deposit to the river. They said that the Environment Agency do clear silt, but they seem to move it from one place to another. The silt had risen by half a metre in the last five years and the banks had not been cut.

4. One thing that baffled all the residents was that after 13 October, the flood waters had gone down extremely quickly,  $7\frac{1}{2}$  feet in ten hours, and they did not understand how that could happen. Another resident said that the water had come up  $3\frac{1}{2}$  feet in two hours to flood their house, and they had to get out by canoe. This was in October and they had still not been able to get back into the house to live.

This was a Flood Warden who should have received a telephone warning before the first flood to pass on to other people, but said she did not receive one. A second flood came and they still did not receive a warning. Some people said they got flood warnings when they were already flooded.

5. They said that lack of maintenance of dykes and ditches on farmland added to the intensity of the flooding and they also said that drainage in the general area was very poor. In their view something was needed between Allington and Snodland by way of flood protection. The general feeling in Wateringbury was that they were scapegoats to protect other communities.

6. One gentleman from a nearby Marina said that he had not been as badly affected as some, but still had three feet of water in his workshop. He said that he was not insured and had not been since 1968 when the insurance company refused further insurance. Residents said it was depressing for the community as people could not sell their properties. An engineer from another Marina said that he had had difficulties with an insurance company not paying out. Others said that they were uninsurable for flood anyway.

7. Residents also said that they did not see any Emergency Services in their area during the floods. When they rang the Environment Agency, they did not seem to know where Wateringbury was. As a result they felt isolated and neglected. They were between the Maidstone and Tonbridge and Malling Borough Council areas, but said they had found both equally unhelpful. They had not received help during the flooding, or with clearing up afterwards. Another gentleman said that he had telephoned the Council regarding clearing up afterwards, but had been told they could not help businesses. He was disappointed because people paid business rates.

8. The gentleman from Allington Marina told Members about a boat that had broken away from the Marina area on 13 October. The speed of the river was such that it was tearing cleats off boats. They rang the Police who offered a four-wheel drive vehicle. This was no help in the circumstances, but was all they could offer. The RNLI were contacted but would not help unless there was danger to life and limb. They asked if there was anyone on board, and as there was not, they said to leave it. This was a big vessel, 33 feet, which ended up across the sluice. In the end it capsized and the Marina understood that the Environment Agency were suing the owner for the damage.

9. Residents said that some stretches of the river had not been dredged for thirty years. They thought some money had been spent in 1987-88 on a Medway project that KCC had been involved in, but this had never been put into effect. If the river depth could be lowered, resident said this would ease the problem. There was opposition to this from the authorities, who they said were concerned about the strength of the banks, without the water pressure against them, and concerned that the riverside properties would slide into the water. They also said they had been told about the Medway Act that specifies that the river has to be kept at a navigable depth at all times.

10. They had received assurances that there was communication between the Leigh Barrier and Allington Lock and they found this reassuring. They thought that there was a problem that the Environment Agency did not seem to be accountable.

They also said that the emergency services were too centralised for small areas like Wateringbury. They agreed there needs to be some sort of emergency plan for the area.

## **East Peckham**

1. Members saw flooding which they were told was caused by run-off from roads and fields. Members saw one house that was flooded where a build up of silt on the drain cover had allowed water to collect on the road outside. Other residents said that the system of ditches and dykes on the land locally had been neglected and that when hedges were cut, leaves and debris were left blocking ditches.
2. Members were told that the area of Snoll Hatch floods before the main village. People there said that the main problem was drainage. The drains could not cope with a lot of water even at the best of times. They mentioned some work at a nearby weir carried out some time ago and wondered whether there was now a different way of managing the river. They said that they were not flooded by the River Medway itself, the water either came from drains or from the River Bourne. Their view was that a better understanding was needed of the whole river system including the tributaries.
3. Parish Council representatives from East Peckham described flooding in their area as three-pronged, coming from the Medway, the Bourne, and run-off from field with which the drains were unable to cope. They described the problems with a local mill stream joined to the upper part of the River Medway above a weir which overflows its banks and floods the village. They also said that there were a number of properties in the village that had been close to flooding but would have escaped, had it not been for vehicles, in particular larger ones – lorries and buses – going past at speed and creating bow waves which then washed into people's properties.
4. As far as the agencies involved were concerned, they said that the Police had been very good on the ground, and that although the Borough Council had been a bit slow to start with, they had brought sandbags and provided good help. In terms of overall organisation, they said that Police were drafted in from areas like Folkestone and did not know the area. They also said that the Police contingent came in two halves and neither appeared to be aware of what the other was doing. For example, they said that one group had said that they had to evacuate the village while the other half said that they did not. There also seemed to be some lack of communication between the Police on the ground and their Headquarters. For example when people were advised to use the Rest Centre in Cornwallis School, the Police on the ground were asked whether it was actually possible to get there and which way was best, and did not appear to know or be able to get the necessary information.
5. In terms of early warning, they said that the River Bourne was now more susceptible to flash flooding and warning times were not as long as they used to be. Residents were concerned about the Leigh Barrier because there was a rumour that it could not cope and they wondered whether it needed to be strengthened or extended. However, they had had categorical assurances from the agencies involved regarding the stability of the Leigh Barrier. When it came to debriefing after the floods, the Parish Council had asked the Borough Councils if they would be involved

in the debriefing. They were told that the matter had been attended to by Borough Council Officers, but to date they had not heard anything from them. Following the debriefings held by various agencies, the Parish Council still had no knowledge of any actions that would be taken and did not know whether the debriefing documents would be published.

6. They said that one of the difficulties in their area was the number of uncharted drains and watercourses. Because the agencies did not know where they were, they did not know what affect one had on another. They said that the foul sewers always overflowed in times of heavy rain allowing sewage to run through the village. Flood warnings were not always consistent with the situation on the ground; for example in one case they had received a four hour warning, but in fact had been flooded within half an hour. Particular problems were caused by vehicles ignoring the road closed signs. They now realised that the agencies did not have sufficient staff to police road closures effectively.

7. In terms of actions, they thought it was important to carry out research to see what could be done. They thought that co-ordination within and between agencies could be improved and said by way of example that Southern Water were not told of flooding when the sewers were overflowing. They said that the Parish Council had set up a group looking into all matters which they could control. They were trying to find out where watercourses used to go, and were also contacting other groups to share information.

8. The existing flood warning plan with the Borough Council was being worked on at the time of the flooding and was still not completed, they understood this was due to a lack of resources. Overall they felt that there was no commitment to action by any agency. They thought it was quite likely that the Parish Council would need professional help which it could not afford. They said that they were looking for a commitment from the Environment Agency to take action on the Mill Stream problem where a relatively simple sluice gate would alleviate the flood risk. They also thought it should be possible to improve the warnings for the River Bourne.

9. The Medway Act had been quoted to them and they understood that it required the river to be kept at a navigable depth up to Tonbridge at all times. They said that in their view this was an old act which was no longer relevant as the river was only used by pleasure craft and craft with a shallow draft. Despite this they said that they had not seen the river dredged. Drains in the centre of the village habitually flooded with heavy downpours and they said that the Internal Drainage Board did not seem to have complete records of drainage particularly in the Snoll Hatch area. They also realised that in their current emergency plan the Curran Hall in the village was designated as an emergency centre but had itself been flooded.

10. They said that there was evidence that the Environment Agency staff on the ground reporting back were being misinterpreted at their base resulting in inappropriate actions being taken. They said that there was an overall problem that not enough use was made of local knowledge or notice taken of local residents' information.

## **Collier Street**

1. Parish Councillors from Collier Street said that they had not seen anyone from any agency during the first floods, except some soldiers. In the second flooding there were Highways staff present, but vehicles going down closed roads still caused damage. Overall 71 houses had been affected in Collier Street.

2. The village had been cut off by the flooding. The local school had been shut for seven days because teachers could not get into the village and there had been an impact on local businesses. They had also been unable to get sandbags into the village and have now decided to store sandbags locally. In terms of the effect on the value of houses in the area, they said that the insurance companies and the property market in general would not improve until they saw something happening. They were concerned about the insurance companies using post code areas for premiums because it was clear that some houses in a post code area might be flooded while others were not.

3. They said they had been flooded twice before in recent years, in October 1994 and November 1996, and then seven times since Christmas 1999. They picked out local trouble spots as being erosion of the river bank on the Lesser Teise, particularly above Brook Farm where the bank was eroded in seven places, and also where water goes under the railway line. They also pointed out problems with water going down Green Lane to Haviker Street which eventually has to make two 90° turns in a 15 inch diameter pipe which could not cope with the flow of water. They said that farm ditches in the area had been filled in and six ponds which showed up on older maps had also gone. They thought that probably over 50% of the ditches in the area were working, albeit below capacity, but 30 – 40% of them did not seem to go anywhere. They did not know how many had been piped underground. They said that local farmers were prepared to help, but could not get on the land at the moment.

4. They had undertaken a survey of the village using 300 questionnaires from which they had learnt a lot. They said that ditches, dykes and river beds needed clearing out and this had not been done recently, meaning that capacity could have been reduced by half. They have worked out a complete map of the watercourses and drains in the village and who owns them and would now be approaching people to ask them to make sure that they are in good order. The Parish Council said that the Drainage Board had told them that they had not done any work there for the last five years and there had been no maintenance by the Environment Agency in the last five years. The Environment Agency were now aware of what needed to be done, and how soon, and there would be a rolling programme for the future. They said that it required a concerted effort between landowners, the Upper Medway Drainage Board, the Environment Agency and the Highways Unit. Residents remained uncertain about the effect of the Leigh Barrier.

5. A lot of people in the village are linked to the automatic warning system, but said that there seems to be a time lag which means it takes longer to get a warning to some people on the list than others.

6. They had experienced some difficulty with the national media covering the flooding in the village. On one occasion a film crew had caused damage by taking a

vehicle into a flooded area. As a result they thought they needed to work out a better way of giving the media the information they needed.

7. They were also concerned about the contents of some of the flood water. There was not just sewage in it, but there seemed to be chemicals, nitrates and phosphates at least, in the water. Members saw one flooded property in the village where paving slabs had been permanently discoloured and had the surface eaten away by something that had been in the flood water.

8. They said that local people were willing to help, but wanted to work with the Environment Agency and that people wanted help now. The Parish Council has set up a Flood Action Group. They have been in touch with the KCC Emergency Planning Unit and will be working with them and the District to produce a local emergency plan.

9. Members were told that when the Transco gas pipeline is laid across Kent between 2001 and 2004, it will be necessary to remove large quantities of a material known as Blue Clay, and local residents would like to see this used for reinforcing river banks, as it is apparently an ideal material if used properly. They have started to talk to the Environment Agency about this.

10. Residents wanted to know if the Highways Unit was able to identify where roads had collapsed or culverts were not working and ditches needed clearing. They said that in the village a lot of verges had been damaged irreparably and the amount of road damage was becoming evident since there had been frost.

11. They said that 100 years ago the river was in a much deeper cutting there. They had had discussions with the Environment Agency and the Drainage Board and they accepted that any scheme for the protection of Collier Street would affect Marden and they would have to make sure that any scheme to protect the Brook Farm area did not have an adverse effect on residents of Marden. They said that this was an ongoing process and that they needed to know from the Environment Agency whether the scheme would work and whether they would be able to do it. Overall they said that they had had "superb" co-operation from the Environment Agency since the flooding.

## **Yalding**

1. In Yalding, Members visited a 50 year old house that had never flooded before. People who had lived in the village for 35 years, knew its history and confirmed that was so. The owners said they had had no problems with insurance or with the loss adjuster. The only thing they mentioned was that with so many loss adjusters drafted in to help, they inevitably had a different style of working and some seemed to be working in a different order.

2. They had received flood warnings, but until 12 October they had not taken much notice of them. That morning they had looked out and seen the water was high, but had thought no more of it. The next flood warning was late, they got the severe warning when water was already flooding their road. They also said that they found the television text service unhelpful. The Environment Agency's flood line told

people to look at this for more information, but they text message just said to ring the flood line.

3. People in Yalding raised some questions about a pumping station that had been put into Smarden three or four years ago, and what contribution it may have had. They said it takes about 15 hours for the water to get there from Smarden. They said that when the Leigh Barrier was open the Beult and Teise were in full flood and the river backed up. They also said that the computer model at Worthing was telling the Environment Agency one thing based on readings from the gauges on the river, but the gauges were flooded and not giving accurate readings. They also said the Environment Agency had no knowledge of what would happen if the Leigh Barrier did over-top, so it was opened instead. They felt they were flooded at the expense of Tonbridge and Maidstone. They also said the same as residents in Wateringbury, that years ago, the river used to be dredged, but it had not been done recently. They had also heard nothing from Maidstone Borough Council about repairing ditches.

4. They said that Police attending the scene were from Swanley and did not know the area. Their instructions were wrong and they sent people the wrong way to avoid the flooding. One lady in Yalding said she had had no warning that she would be flooded, they did not get any phone calls from the Environment Agency. Their road had not been covered when people were evacuated. When they saw the Police and Fire Service boats in the village, they asked a Police Officer what was going on, and they were told the village was being evacuated because "they were opening the Leigh Barrier". Until then they said it looked like a normal flood, no one told them what was going on until they asked.

5. Of the 66 houses that were flooded, 25 were still empty. Residents reported that builders were making good progress although there were some difficulties with the lack of expertise of builders who took out plaster that would have dried out because it was not on plaster board and need not have been removed.

6. Yalding Parish Councillors had met with the local head of the Environment Agency and discussed the operation of the Leigh Barrier, but they had not yet had contact from Maidstone or Tonbridge and Malling Borough Councils although they had seen Tonbridge and Malling's report on the emergency to its Policy and Resources Committee. They said that they felt prevention was the key and they had listed a number of areas where they thought action was needed, broken down into short, medium and long term actions.

7. In the short term they wanted to see Summer and Winter levels on the river. In the 1940s apparently the river level used to be between 6-8 feet and was now down to 18" in some places. They wanted the level of the Medway lowered when heavy rain was forecast. They wanted to maximise outflow from Allington Lock which they said was not currently co-ordinated with the Leigh Barrier or the sluices in between. They explained that these work automatically, but in an individual, unco-ordinated fashion, what they said was needed was a co-ordinated computer programme. They said that attention needed to be paid to roadside drainage ditches and culverts and to drainage ditches on private land. They wanted weirs and sluices on private land to be fully operational and fully opened between October and April. They wanted the removal of dangerous trees, bushes and scrubs from the river banks to stop collapse into the river and they needed to identify the location of inadequate culverts.

8. For the medium term they wanted to improve the network of water level gauging points and wanted centralised control of all the power operated sluices. They wanted to increase the capacity of the Medway and reinforce the banks in vulnerable areas. They considered the latter to be of particularly relevance because they said that the area had become very "flashy" and they wanted to reduce the risk of flash flooding. They said that the gauges had not proved accurate when the flooding was taking place, so control of the sluices and barriers had been based on inaccurate information. They said that the local authority had power to get work done on the land, but generally were not keen to exercise those powers.

9. In the longer term they wanted to see computer modelling of the Medway, Teise and Beult. They were aware that the Environment Agency had asked for funding to model a number of rivers in the UK, but they considered that the Medway should be studied as a matter of priority. If that was done, then it would be possible to have a computer programme which could operate the sluice gates automatically, in a co-ordinated way. They referred to a company called H L Wallingford in Oxford, who were experts in modelling river systems, who had said that it would take about five years to model systems across the whole country. They were not expecting anything to be done on the Medway for two years. They had been told that it would cost £4½ million to model the Medway system and suggested that the Environment Agency should talk to H L Wallingford to tailor the work to something affordable. They noted that the monitoring of sluices and flooding activity was carried out by a total of nine employees of the Environment Agency in Kent, and they wanted flood defences increased and riverside bundling. In terms of costs, their known insurance claims in Yalding would amount to £5 million. They added that they hoped that the Flood Defence Committee would ensure that the Environment Agency got all the funding it was requesting for the coming year.

10. In terms of communication and action in the event of further flooding they proposed in future to set up a centre, to collect and assimilate all the information available. They were carrying out risk assessments of properties at risk and registering all elderly and infirm people in the village as well as people in very isolated properties. As a result they would be able to give a map to the emergency services. They were also trying to work out the best way of identifying people who were working away from the village who might for example have pets on their own in the house. They were setting up a register of available resources, vehicles, skills and people, as well as a register of emergency accommodation. They said that they would hope to have 10 to 12 hours to contact all the properties that were at risk in case of emergency and it was their intention to give progressive warnings, and to deliver sandbags in advance of need. They intended to give out flood warnings and establish a control centre in the Library with sub-stations in the Chequers and Woolpack pubs. They also intended to be able to notify road closures. They said that computers were already being procured for the Library and that they would be putting the information on the existing village website. They said it was essential for them to take responsibility to circulate and confirm information. In terms of co-ordination, they thought that the County Council could help with funding.

## **Leeds Castle**

1. The Core Group heard from the Chief Executive of Leeds Castle how the Castle had been affected by serious flooding for the first time in living memory,

threatening some of the mediaeval structures on the site. The Castle Trustees believe that this is being caused or exacerbated by the M20 and the CTRL works. The Core Group heard evidence from the Environment Agency that the River Len, which flows through the Castle Grounds, has been identified by Maidstone Borough Council as a "critical ordinary watercourse" and as such they have permissive powers. The Core Group is aware that the Chief Executive is in contact with the Borough Council. The Castle Trustees hope that when they can be more specific about the nature and cause of their problems that they will have the support of the County Council in following these up. They believe this is important because they consider that the Castle is bearing a wider responsibility for flood protection than it can afford and that this is affecting the heritage and thus potentially the economic benefit it brings to Kent.

### **Brook**

1. The problems residents face in Brook were explained to Members by local residents and members of the Parish Council. A representative of Ashford Borough Council was also present. There is a long standing problem with drainage in Troy Town Lane and with the roadside stream that runs down the street. The flow of the stream is impeded by culverts and driveways serving the adjacent properties and when the flow reaches a certain level the water backs up and spills onto the road and floods neighbouring properties. There are also questions about the installation of one culvert, and problems of maintenance of the culverts and ditches. These are compounded by questions of riparian ownership and responsibilities. Correspondence between residents and the County and District Councils goes back over a number of years. Sir John Grueon, who was deputising for the Chairman on this visit, has written to the County Council's Head of Network Management asking for the matter to be dealt with.

### **Lamberhurst**

1. Residents and members of the Parish Council explained the problems experience in Lamberhurst, showed Members a video taken during the flooding although not at its worst, and also showed Members some of the properties in the village that were affected. Members were told that Lamberhurst had been severely flooded a number of times in the last eight years, four of these floods occurred between October 2000 and January 2001. Residents describing the extent of the flooding said that although a few older residents could recall flooding as deep in the village before, none could remember water flowing through the village at such speed. Estimates of damage to property are in excess of a million pounds.

2. Residents' views of the causes of the flooding are that Lamberhurst is situated in the valley of the River Teise which takes the run-off from a local watershed about four miles in diameter west of the village. According to local residents, the River Teise rises very fast, reaching a peak about six hours after heavy rainfall. Flood waters go down again in about ten hours. Heavy rain over the area eventually creates a surge that can no longer get under the bridge where the A21 crosses the Teise. The speed and intensity of the run-off has been increased by the removal of trees and hedgerows in the catchment, together with the concreting over of certain areas including the built up area of Tunbridge Wells. The bridge over the river in the

centre of the village replaced an older humpback bridge that allowed more water to flow through. Other factors that were pointed out to Members were roadside drains that were blocked and silted.

3. The house by the bridge had been flooded in 1996. The current owners moved there in 1992. The house flooded twice more in the 1990s and again in 2000. Businesses are also finding it difficult to keep going. Some properties in the area now have insurance excesses of £10,000. Insurance companies will not reduce these premiums unless there is protection for the village in place. One of the village pubs has been flooded so many times recently that the insurance company concerned has imposed an excess premium of £15,000 making the business unviable.

4. Members were also taken to the village Church which is set some distance from the centre of the village and from where it is possible to see where the proposed A21 Lamberhurst bypass will run. There was great concern expressed that the construction could act as a dam forcing water to back up and causing worse flooding. There was also visible evidence of extensive soil erosion in fields below the Church.

5. A resident of the village had prepared a detailed plan showing how flooding could be reduced or prevented benefiting not just Lamberhurst but other communities further down the catchment. The plan covers areas where much of the land is in private ownership, and appears to be in part the type of scheme envisaged by the Head of Environmental Management and the Chief Executive of the Country Land and Business Owners Association, among others, in their evidence to the Scrutiny Committees. The Core Group of Members were given a copy of the plan.

6. Local residents and the Parish Council said that they had nothing but praise for the emergency services, especially the Fire Brigade, the Police, the Highways staff and Council staff delivering sandbags, all of whom provided great help in very difficult circumstances.

## **Chestfield**

1. Members of the Core Group met Parish Councillors and local residents at the Golf Club before being shown some of the affected areas. Members were accompanied throughout by Councillor Mr Harry Cragg who will chair the Canterbury City Council Scrutiny Inquiry into the flooding and the Head of Transportation and Engineering from Canterbury City Council. The Golf Course itself had been flooded and out of action since the end of October. A new drainage system for the course is now planned for August – October 2001 and it is estimated that this will increase the flow of water by as much as 500%. When taken with the water running off the A299, it is feared that the existing drainage system which appears to be inadequate at present will be overwhelmed.

2. Members were told that a number of properties had been built in the area against advice; planning permission having been granted on appeal to the Secretary of State. This was allowed with a stipulation that a pumping station was built, but residents said that this came outside building regulations. The A299 is considered to be a major contributory factor to local flooding together with inadequate drainage infrastructures in the area. The area is mainly on clay and surface water runs off

rapidly and fills local ditches and watercourses. Prior to the construction of the A299, surface water used to drain from south to north, connecting with the existing ditch system through the village. If the capacity of the ditch was exceeded, adjacent field used to flood. A new housing estate has been built in the field that used to act as flood relief, with the result that the entrance to the estate from the road floods, as does the road itself. The drainage in the area has also been affected by associated drainage work carried out for the development.

3. Members were shown the area where the estate is situated and although still under construction, the entrance to the estate was flooded and a great deal of water had collected on the site. Drainage running alongside the road passed through what appeared to be an inadequate sized pipe. Members were also shown the area under the A299 at Radfall Road which floods. Although not able to see the problem themselves, Members were also made aware of similar problems caused by the A299 at Herne Bay where serious flooding was also experienced.

4. Finally Members were shown where the water eventually flows out to the sea. Members were shown that the sluice gate needs immediate improvement but told that the solution really lies in constructing a third outlet.

5. A report was made by the City Council's Head of Transport Management to the Transport Operations Board in March setting out these problems and recommending actions to be taken in the short and longer term.

## **Wickhambreaux**

1. Members of the Parish Council showed the Core Group some of the problems in Wickhambreaux, which stemmed from a variety of sources. Large areas of land were flooded directly from the River Stour. This has caused widespread disruption to the farming community. The river bank of the Little Stour is unstable and leaking in places. Local residents also said that maintenance of the rivers had been neglected in recent years, despite local expressions of concern. There is a heavy build up of silt on the River Stour and banks have not been repaired. There is also a need to increase flow channels through the villages. The policy of not disturbing the waterways on environmental grounds is seen as "an own goal" as far as Stodmarsh Nature Reserve is concerned. There has also been confusion over riparian ownership and responsibilities for ditches.

2. Sewage from Littlebourne Pumping Station overflows into the parishes. Pumps have been installed by Southern Water to relieve surcharging of foul sewers. Raw sewage is being pumped onto neighbouring land and into the river. There are also a number of problems with redundant weirs and mill wheels which impede the flow of the water and in one particular case shown to the Core Group resulted in serious localised flooding to adjacent properties. Concerns were expressed about the effect of the release of water from the Hothfield and Aldington reservoirs on the wider area and also the relatively small outlet (3 feet) to drain the Grove Valley.

3. Members were shown the problems caused by water coming up through the ground underneath houses and also shown the "new" river which is flowing through the area and which is expected to remain until the summer.

4. Overall the Parish Council believe that more resources have to be devoted to clearing and maintenance of the waterways and banks in the area. At first they were concerned about the attitude of Southern Water and Environment Agency staff, but now feel that communication is much improved.

### **Patrixbourne, Bisphopsbourne, Kingstone, Barham and Bridge**

1. Members saw at first hand the problems caused by the emergence of the River Nailbourne. Residents said that this river flows every few years (many people say every seven years) normally starting in February and making its way at a predictable pace through these villages on its route. This year it began in November and has flowed faster than people can recall, reaching Bridge much sooner than expected. Canterbury City Council representatives admitted that this unexpected speed had caught them by surprise, unprecedented as it seemed to be.

2. One group of residents made the point that at one time water was being extracted from the aquifer for the construction of the Channel Tunnel. Now that the Tunnel is completed and water is not being extracted, they wondered what effect that had had on the aquifer and the Nailbourne itself.

3. At Black Robin Lane Members of the Core Group were shown where roadworks started in October to strengthen a culvert. The road is blocked here making access to villages only possible by making a long detour. Nearby, Members saw sewage being pumped into fields. More generally flooding seemed to have been exacerbated by a combination of run-off from fields, including winter wheat fields, blocked ditches and highway gullies and lack of maintenance of drainage systems.

4. The longest memory of any local resident was that of a very extensive flood in the 1920s, but even that was not on the scale of the current flooding. Nobody locally knew that the river could do what it had done in 2000/2001, and it is thought that event if there is not further rain it will be at least June before the flow stops.

**Oral Evidence**

**21 November 2000**

Mr A Pearce and Mr P de Caux, the Environment Agency  
Mr K Hymas, Manager, the Severe Weather Warning Service, The Met Office  
Mr N Rowe, County Emergency Planning Officer, KCC  
Mr J Wale, Head of Network Management, KCC  
Mr L Herington, County Land Use and Transport Planning Officer, KCC  
Mr P Raine, County Environmental Management Officer, KCC  
Mrs J Bennett and Mr A Gairns, Association of British Insurers

**7 December 2000**

Mr D Petford, Chief Executive, Maidstone Borough Council  
Mr W Roffey, Radio Kent  
Mr M Pitt, Chief Executive, Kent County Council  
Mr F Stocks, Kent Ambulance Service  
Mr N Easterbrook, Gravesham Borough Council  
Mr J Barnes, Emergency Planning Co-ordinator, Consortium of Health Authorities

**14 December 2000**

Mr Coombs, Mr Hendry and Mr Dimitrios, Kent Fire Brigade  
Chief Superintendent G Gardner, Kent County Constabulary  
Mr T Thompson, Chief Executive and Mr M O'Brien, Principal Engineer Tonbridge and Malling Borough Council  
Wing Commander Vary, RAF  
Mr J Whitehorn, Highway Manager, Tunbridge Wells Borough Council

**12 January 2001**

Mr J Gibbs, Emergency Planning Manager, Seeboard  
Mr A Holland, Ashford Borough Council  
Mr V Pritchard, Canterbury City Council  
Mr P Sabin, Chief Executive, Leeds Castle  
Mr D Goff and Mr P Hannan, Hadlow College  
Mrs K Trenam and Mr A Pearce, the Environment Agency  
Captain N Wilcox, the Army

**25 January 2001**

Mr P Kent, Southern Water  
Mr J Tipples and Mr J Archer, National Farmers Union  
Mr N Henwood, Strategic Director Education and Libraries, KCC  
Mr L Herington, County Land Use and Transport Planning Officer, KCC

Dr J Boardman, the Environment Institute, Oxford University  
Dr H F Cook, Senior Lecturer in Hydrology, Imperial College at Wye  
Mr R Cahill, Emergency Planning Co-ordinator, KCC Social Services  
Mr J Biron, Chief Executive, the Country Land and Business Owners' Association

**14 March 2001**

Mr M Watson, Upper Medway Internal Drainage Board  
Mrs A Baptiste, Regional Flood Defence Manager and Mr A Pearce, Area Flood Defence Manager, the Environment Agency